



Environmental Statement – Non-Technical Summary

Liverpool Cruise Terminal

March 2019

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This document has been prepared and checked in accordance with Waterman Group's IMS (BS EN ISO 9001: 2008, BS EN ISO 14001: 2004 and BS OHSAS 18001:2007)

Issue	Date	Prepared by	Checked by	Approved by
First	October 2017	Various	Gavin Spowage Associate Director	Gavin Spowage Associate Director




Comments

Second	June 2018	Various	Gavin Spowage Associate Director	Gavin Spowage Associate Director
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Comments

Amended in line with June 2018 ES Addendum, taking account of MMO EIA Scoping Opinion

Third	January 2019	Various	Gavin Spowage Associate Director	Gavin Spowage Associate Director
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Comments

Amended in line with January 2019 ES Addendum (second issue), taking account of MMO and Consultee comments

Third	March 2019	Various	Gavin Spowage Associate Director	Gavin Spowage Associate Director
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Comments

Amended in line with March 2019 ES Addendum (third issue), taking account of further MMO comments

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1. INTRODUCTION

In November 2017, Liverpool City Council (LCC) submitted a hybrid planning application (part full, part outline) (reference 17O/3230) for a new cruise ship terminal and associated infrastructure (hereafter referred to as the 'Development'). The Development would be located within an area (hereafter referred to as the 'Site') located at Princes Parade, Liverpool on the east bank of the Mersey Estuary.

An Environmental Impact Assessment (EIA) was undertaken by Waterman Infrastructure & Environment Limited (hereafter referred to as 'Waterman') to assess the likely significant environmental effects of the Development. The EIA was reported in an Environmental Statement (ES) (hereafter referred to as the 'November 2017 ES') which accompanied the planning application. The November 2017 ES described the likely significant environmental effects of the Development and, where necessary, recommended appropriate mitigation measures.

The hybrid planning application, together with the November 2017 ES and other supporting planning documents were validated by LCC on 17th November 2017. Planning permission was granted on 3rd April 2018.

Mersey Docks and Harbour Company Ltd has now applied to the Marine Management Organisation ('MMO') for a Harbour Revision Order ('HRO') pursuant to Section 14 of the Harbours Act 1964 to authorise *inter alia* the construction and maintenance of works forming part of the Development within the Port of Liverpool. The Mersey Docks and Harbour Company Ltd is the Statutory Harbour Authority for the Port and Harbour of Liverpool. LCC is also applying to the MMO for a Marine Works Licence pursuant to Section 65 of the Marine and Coastal Access Act 2009.

To this end, an EIA Scoping Report was submitted to the MMO on 18th December 2017 to request a formal EIA Scoping Opinion under the requirements set out in both the Marine Works (Environmental Impact Assessment) Regulations 2007¹, (as amended)² and Schedule 3 of the Harbours Act 1964, hereafter collectively referred to as the 'EIA Regulations'.

An EIA Scoping Opinion was issued by the MMO on 16th March 2018 (reference DC10147). The MMO's Scoping Opinion included a number of requirements additional to those already addressed in the November 2017 ES.

A First Issue of an ES Addendum was compiled to address those additional requirements and was submitted to the MMO in July 2018 with the HRO application. As part of the consultation undertaken in accordance with the 1964 Act, the MMO and their consultee organisations reviewed the First Issue of the ES Addendum and provided consultation responses in September 2018. A number of the responses provided included requests for additional information and confirmations to supplement the EIA undertaken by the Applicant in support of the HRO application.

A Second Issue of the ES Addendum was compiled to address the additional requirements of the March 2018 Scoping Opinion and the September 2018 consultation responses. It was issued in January 2019.

A Third Issue of the ES Addendum ("the ES Addendum (third issue)") has now been compiled to address subsequent additional comments received from the MMO. It supersedes the previous two issues of the ES Addendum. It should be read in conjunction with the November 2017 ES.

This document provides a summary of the entire ES (i.e. the November 2017 ES and the updates provided in the Third Issue of the ES Addendum) in non-technical language.

The Site location is shown on **Figure 1** and the Site boundary is indicated on **Figure 2**.

1 HMSO (2007) Marine Works (Environmental Impact Assessment) Regulations'

2 HMSO (2017) Marine Works (Environmental Impact Assessment) (Amendment) Regulations

2. ENVIRONMENTAL IMPACT ASSESSMENT METHODOLOGY

EIA is a process which aims to ensure that the likely significant environmental effects of a proposed development (which can be beneficial or adverse) are given due consideration in the determination of regulatory approvals. In accordance with the relevant legislative requirements and best practice guidelines, the EIA was undertaken using established methods and assessment criteria. This involved visits to the Site, along with surveys, data reviews, consultation with all relevant statutory authorities, computer modelling and specialist assessment undertaken by a team of qualified and experienced consultants.

The first stage of the EIA process involved undertaking a 'Scoping Study'. The purpose of the study was to identify the potentially significant environmental effects associated with the Development and therefore provide the focus or scope of the EIA. A Scoping Report, which presented the findings of the Scoping Study, was submitted to the MMO on 18th December 2017 in support of a request for a 'Scoping Opinion'. The scope of the EIA was formally agreed with the MMO via their 'Scoping Opinion' which was received on 16th March 2018.

It was agreed with the MMO that the EIA should include assessments of the same environmental topics that had previously been agreed with LCC for the November 2017 ES, namely:

- Air Quality;
- Noise and Vibration;
- Townscape and Visual Impact;
- Built Heritage;
- Archaeology;
- Ground Conditions and Contamination;
- Marine Ecology, Ornithology and Terrestrial Ecology;
- Coastal Processes, Sediment Transport and Sediment Contamination; and
- Cumulative Effects.

Specific additional comments and requests made by the MMO in their Scoping Opinion and subsequent correspondence are addressed in the ES Addendum (third issue), which supplements or amends specific parts of the November 2017 ES.

Each of the above topics is addressed in the November 2017 ES, with a chapter dedicated to each topic. Where appropriate, additional or updated information is provided in the ES Addendum (third issue). In each chapter, a description of the assessment methodology is given together with, the relevant environmental conditions on and adjacent to the Site and the likely significant effects of the Development.

The significance of likely effects is graded on a scale as either negligible, minor, moderate or major (note, this Non-Technical Summary (NTS) does not generally use this terminology as its purpose is to present the findings of the ES in non-technical language).

Each chapter also describes measures that would be incorporated to avoid, reduce, or offset any identified likely adverse effects or enhance likely beneficial effects. Such measures are referred to as 'mitigation measures'. The resulting effects (known as 'residual effects'), following the implementation of mitigation measures, are also described.

The EIA is based on a set of 'Parameter Plans' which set out, amongst other things, the buildings and structures to be demolished, the maximum possible footprints and heights of proposed buildings and structures (i.e. the limits of deviation for each of the proposed works), and the proposed movement and access arrangements throughout the Site.

It is important to note, therefore, that this EIA does not assess the detailed design of the proposed new jetty, cruise terminal or associated infrastructure, rather an area within which those works may be constructed.

3. EXISTING AND LAND USES AND ACTIVITIES

The Site is an irregular 'C' shape, bound by the Mersey Estuary to the west, the residential Alexandra Tower and the Princes Half Tide Dock to the north, Princes Dock and office buildings to the east and the Royal Liver Building and Water Street to the south. The current temporary cruise ship terminal is located adjacent to the south-east of the Site.

The northern part of the Site currently includes the derelict Princes Jetty and an area of surface car parking known as Plot 11. Princes Jetty and Plot 11 are separated by Princes Parade which connects to Waterloo Road in the north and St Nicholas Place in the south. A series of floating pontoons (Pontoons A to D) are located in the west and south-west of the Site. The existing cruise ship reception building is located on Pontoon A (refer to **Figure 3**). The southern part of the Site contains the Isle of Man ferry terminal and a marshalling area associated with the cruise ship and ferry terminals. The Titanic Memorial is excluded from the Site boundary.

Figure 3 shows the key existing land uses of the Site and the surrounding area.

The following features are located in close proximity to the Site:

- The residential Alexandra Tower adjacent to the north;
- The residential apartment block 1 Princes Dock ('City Lofts') adjacent to the north-east;
- The Malmaison hotel approximately 125m to the east;
- The commercial Princes Dock Offices at 12 Princes Parade adjacent to the east;
- The Royal Liver Building (Grade I Listed), approximately 50m south of the Site;
- The Cunard Building (Grade II* Listed), approximately 125m south;
- The Port of Liverpool Building (Grade II* Listed), approximately 200m south;
- The Mersey Narrows and North Wirral Foreshore Ramsar site, Special Protection Area (SPA) and Site of Special Scientific Interest (SSSI), approximately 800m to the west of the Site (on the opposite side of the Mersey);
- The Dee Estuary Special Area for Conservation (SAC), approximately 4.2km north-west;
- The Mersey Estuary SPA, approximately 5.3km to the south-east;
- The Sefton Coast SAC and SSSI, approximately 6.3km north; and
- The Ribble and Alt Estuaries Ramsar site and SPA, approximately 6.4km north.

The southern section of the Site is located within the 'Liverpool Maritime Mercantile City' World Heritage Site (WHS) and the rest of the Site is within the WHS's buffer zone. The southern portion of the Site, along part of Princes Parade and St Nicholas Place, is located within the Castle Street Conservation Area. The north-east portion of the Site is adjacent to the Stanley Dock Conservation Area.

4. ALTERNATIVES AND DESIGN EVOLUTION

In line with the UK regulations which relate to EIA, the ES provides a description of the main alternatives to the Development which were considered by the Applicant. In addition, a description of how the design of the Development has evolved over time is presented.

The Applicant is proposing the replacement of the existing temporary cruise terminal facilities in the south of the Site and adjacent to the south-east of the Site with a new purpose-built facility. The new facility would cater for the projected growth in cruise ship passenger numbers over the next decade and would also be capable of accommodating larger cruise ships than is currently the case.

An options appraisal carried out on behalf of the Applicant concluded that the existing temporary cruise ship facility area and the undeveloped Plot 11 are not large enough to accommodate a new terminal building and would require passenger walkways over Princes Parade, exacerbating technical difficulties with levels and walkway gradients. These locations were therefore discounted.

Locations to the north and south of the Site are constrained due to being within the Liverpool WHS. All other nearby shore-side locations within the wider Liverpool Waters masterplan area to the north are subject to alternative development proposals. Locations to the south of the Site generally have environmental constraints such as proximity to buildings of high heritage value (e.g. the Cunard and Liver Buildings).

Princes Jetty therefore emerged as the most appropriate location for the proposed Development. It affords the opportunity to remove the derelict jetty and replace it with new, fit-for-purpose infrastructure. It avoids the WHS (although it is within its buffer zone) and is sufficiently removed from the cluster of listed buildings to the south of the Site. For these reasons, therefore, the Applicant has settled on the proposed Site as the location for the cruise ship terminal.

As noted above, this EIA assessed the maximum footprint and height of the proposed cruise terminal building and associated infrastructure, as set out in a series of Parameter Plans. Within those maximum parameters, two indicative design options are currently being considered. These two indicative designs are presented as **Figures 4 and 5**. These figures are adapted from information provided at the public consultation events for the proposed Development held on the 20th and 21st September 2017. A final detailed design will emerge in due course.

Option 1 (**Figure 4**) is a modern interpretation of the buildings previously occupying Princes Dock. Large-footprint low-rise structures with repetitive roofscapes, such as Liverpool Riverside railway station (which was demolished in the 1990s), gave the area a horizontal emphasis. This direction has been gradually evolving to the vertical, with several nearby high-rise projects completed and others proposed. Option 1 would therefore create a lasting reference to the past roofscape and uses of Princes Dock and of the wider city centre waterfront area, legible on the city skyline.

Option 2 (**Figure 5**) is influenced by Princes Jetty itself, with references to the structure as well as the movement of the marine environment. The strong, simple roof form twists across the building, with it lowering in proximity to the existing Alexandra Tower. Angled views are afforded at either end of the building – to highlight to the visitor the outbound route, and the point of departure. Layered in front of the west facing window are a series of panels to provide solar shading. Their pattern references the existing structures of Princes Jetty and the dock wall.

5. THE PROPOSED DEVELOPMENT

The Applicant is seeking to construct a new cruise ship terminal facility and supporting infrastructure to replace the existing temporary cruise ship terminal. The main elements of the proposed Development comprise:

- Demolition of buildings and structures, including the controlled removal of Princes Jetty;
- Construction of a new landing stage and suspended concrete deck;
- Construction of a cruise liner terminal building;
- Modification of the existing cruise liner terminal building to accommodate cruise related ancillary uses, including staff facilities and storage, on completion of the new cruise liner terminal; and
- Erection of a vehicular and pedestrian linkspan bridge (linking the new terminal building and the existing pontoons).

As noted, the physical characteristics of the proposed Development are set out in a series of Parameter Plans which set out, amongst other things, the location and maximum buildable envelope of the proposed built elements within the Site. The details of the proposed Development's appearance, including fixed building heights and footprints, will be established in due course, during the detailed design stage. The detailed design will need to accord with the relevant Parameter Plans.

Figure 6 shows the Parameter Plan which sets the maximum building footprint and height. **Figure 7** shows how vehicles and pedestrians would move around the Site and **Figure 8** shows the different 'Development Parcels' across the Site.

The primary use of the proposed Development would be the berthing of cruise ships, generally from March through to November, to accommodate the predicted growth in passenger numbers in this sector. Additionally, at appropriate times throughout the year and particularly during the off-season, it is proposed to use the new terminal building as conferencing and exhibition space.

The Cruise Liner Terminal Building would be built on the new suspended concrete deck. It would be a two-storey building comprising:

- Baggage x-ray area;
- Baggage hall;
- Customs area;
- Ground floor entrance atrium and departure lounge; and
- Café at 1st floor level.

As indicated on **Figure 6**, the terminal building would have a maximum height of 30m above Ordnance Datum (AOD) across most of its footprint, with a maximum height of 24m AOD at the north-east and south-west corners. The 'ground level' of the jetty would be approximately 7.55m AOD so the terminal building would be a maximum of 22.45m above ground level.

A vehicular link bridge (a 'linkspan') would connect the new suspended concrete deck with the retained existing floating pontoons to the south. The linkspan would float to adjust for tidal variations and would be supported by a dedicated support pontoon at the southern end. The northern end of the linkspan would be supported from the new suspended deck. To segregate pedestrians from the vehicle access area and ensure a smooth transition of passengers to the varying deck levels of the cruise ships, a pedestrian walkway would be provided as part of the linkspan. A hinged walkway bridge would connect the cruise terminal building to a fixed walkway which would provide access to the cruise ships.

Once the new terminal building is in operation, the existing cruise ship reception building on Pontoon A (refer to **Figure 3**) would be modified for cruise-related uses including storage and operational staff facilities.

Access to the cruise terminal would be similar to the existing arrangements, with vehicles accessing the Site either from Bath Street / Waterloo Road to the north or St Nicholas Place to the south.

Cruise passengers would be able to use private vehicles, valet parking ('meet & greet'), coaches, shuttle buses or taxis to get to the new terminal. Aside from the coaches which would use off-road coach bays alongside the terminal frontage, a dedicated passenger pick-up / drop-off area would be provided on land opposite the new terminal building, known as Plot 11, to serve other modes of transport to the terminal (refer to **Figure 7**).

Twelve coach bays would be provided along the frontage of the terminal building on Princes Parade. An additional eight coach bays would be provided within the passenger pick-up/ drop-off area. This area would also include up to 60 spaces for drop-off and pick-ups by private vehicles and 12 spaces for taxis. There would also be up to three bays for shuttle buses linking with off-site long-term designated car park(s).

6. DEVELOPMENT PROGRAMME AND CONSTRUCTION

For the purposes of assessment within the EIA, a construction start date of Quarter 1 2019 has been assumed, with completion anticipated in late 2020. Buildings and structures to be demolished are identified in **Figure 9**.

The general sequence of the demolition and construction activities is envisaged to be:

- Pre-commencement surveys, including structural and archaeological recording of Princes Jetty;
- Service diversions;
- Enabling works, including installation of perimeter hoarding and a temporary Site office with staff welfare facilities;
- The use of barges in the Mersey Estuary to undertake the demolition of Princes Jetty including the concrete deck and wooden piles;

- Installation of new piles upon which a new concrete deck structure would be constructed;
- Removal and relocation of the building on Pontoon D;
- Construction of the new concrete deck jetty;
- Construction of the new terminal building on the new concrete deck jetty; and
- Finishing, testing and commissioning.

Current estimates are that jetty demolition works would commence in May 2019 and pile installation would be complete by Quarter 2 2020.

The proposed construction works are illustrated in **Figures A1 to A6**. These figures show the individual elements of construction work being applied for as part of the HRO application.

Hours of Work

It is proposed that works would be predominantly limited to 0700-1900 Monday to Saturday. Due to some works being tidal dependent, flexibility of working Sunday 0700-1900, evenings (1900-2300) and at night time (2300-0700) is also proposed, subject to advance notification and agreement with LCC. However, only 'low noise' generating works are proposed to be undertaken after 1900 and during night time hours (2300-0700). In particular, no piling works are proposed during these hours.

Construction Environmental Management Plan

The nature, extent and magnitude of likely adverse effects associated with construction works are largely dependent on the implementation of effective management controls e.g. employment of dust suppression methods, use of plant with low noise and vibration levels, and use of properly maintained plant.

Prior to commencement of construction works, a Construction Environmental Management Plan (CEMP) would be prepared in accordance with relevant guidance for agreement with LCC. The purpose of the CEMP would be to:

- Identify potential adverse environmental effects associated with the construction of the proposed Development;
- Specify measurable limits and targets in relation to, for example, dust emissions and noisy construction activities;
- Detail the mitigation measures to be implemented; and
- Specify the management tools and procedures required.

7. AIR QUALITY

The main likely effects on local air quality during construction relate to dust and to exhaust emissions from construction vehicles. A range of measures to minimise or prevent dust and reduce exhaust emissions generated from construction activities would be set out in the CEMP and implemented throughout works to construct the Development.

Dust mitigation measures would include, for example, damping down surfaces during dry windy weather, the sheeting of chutes, skips and vehicles removing construction wastes, and the fitting of all equipment with dust control measures such as water sprays wherever possible. Therefore, it is considered that effects due to dust emissions would not be significant.

A route management strategy for HGVs associated with demolition and construction activities would be set out in the CEMP to minimise the effects of vehicle emissions at nearby residential properties in particular. Some occasional instances of small adverse effects are predicted during peak construction periods although, generally, no significant effects are expected when compared to local background pollutant concentrations and existing local road traffic emissions.

A detailed modelling exercise has been undertaken to assess likely effects on local air quality associated with changes to road traffic flows and emissions from the predicted increase in cruise ship sizes and numbers once the Development is fully operational. The modelling indicates that levels of nitrogen dioxide and particulates would not exceed nationally accepted acceptable limits at any of the nearby residential or commercial properties. It is concluded that the effect of the proposed Development on levels of nitrogen dioxide and particulates would not be significant.

The current cruise ship terminal facility does not provide any electricity for moored vessels which means cruise ships must use their engines to provide power while docked in port. The proposed Development would allow future installation of shore-side power should the cruise industry move in that direction and would have the potential to bring about air quality benefits by removing the need for cruise ships to use their engines while in port, thereby further reducing pollutant emissions.

Other potential measures which could be incorporated into the Development are:

- Provision of extensive green infrastructure;
- All port authority vehicles using electric / hybrid fuel;
- Incorporation of electric vehicle (EV) infrastructure; and
- Geofencing within the port area to switch hybrid vehicles via GPS to electric mode.

8. NOISE AND VIBRATION

The Site is situated in an urban, dock-side location with road traffic noise being dominant.

Noise monitoring was undertaken at four locations on and around the Site in March 2017 to robustly quantify the existing noise climate during day, evening and night-time periods, providing a good representation of the noise environment experienced at residential and commercial properties in the vicinity of the Site and in the wider area.

Additional noise monitoring of key existing on-shore operations, the cruise ship generator, and engine noise arriving and leaving from the existing cruise ship terminal location was undertaken on Thursday 28th September and Friday 29th September 2017 when the 'Amadea' transit and 'Marco Polo' cruise ships were docked.

Demolition and construction works are likely to include activities that have the potential to increase noise levels and potentially cause vibration at nearby residential and commercial properties, particularly when activities are occurring closest to the Site boundary. Without mitigation measures in place, these effects could be significant. There could also be an increase in perceptible construction traffic noise in the absence of mitigation measures.

The implementation of noise and vibration control and management measures is recommended through a CEMP for the demolition and construction works to help reduce potential disturbance to occupants of nearby residential and commercial properties. Such measures would include the erection of suitable hoardings, selection of modern 'quiet plant' and the implementation of piling methods designed to result in reduced levels of noise and vibration.

Items of fixed building services plant installed within the proposed Development (for example, air conditioning plant) would be designed to ensure that noise levels would not cause disturbance to nearby residents in the surrounding area.

Noise from road traffic once the Development is operational would generally be negligible although there is the potential for some elevated noise levels at nearby residential and commercial properties on Princes Parade during the periods that cruise ships visit the new cruise ship facility. Similarly, small increases in noise levels are predicted from the drop off / pick up area, but only when cruise ships are in port.

No significant changes in noise emissions from the cruise ships themselves are predicted. The location of the docked cruise ships would remain unchanged from the present arrangement. The newer and bigger cruise

ships that the proposed Development would attract are expected to be generally quieter as a result of technological advances.

9. TOWNSCAPE AND VISUAL IMPACT

As noted above, a small area in the south of the Site is located within Liverpool's WHS with the rest of Site being within the WHS buffer zone. The southern part of the Site also overlaps with the Castle Street Conservation Area and the north of the Site is adjacent to the Stanley Dock Conservation Area.

During demolition and construction activities, some small temporary adverse effects to the local townscape character would be evident due to the presence of construction plant, vehicles, hoarding etc. Nevertheless, once it is completed and operational, the proposed Development is predicted to be a very positive addition to the local townscape, revitalising this area of the waterfront, including the derelict Princes Jetty.

For the visual assessment, 21 viewpoints were identified and assessed, including views from the Wirral, Liverpool city centre and from the waterfront to the north and south of the Site, a key visitor destination for the city. During demolition and construction activities there would be inevitable small adverse effects to some views of the Site due to the presence of construction plant, vehicles, hoarding etc.

Once completed, the Development would have a mainly positive effect on views towards the Liverpool waterfront. The Development would be in scale with the existing built form on Princes Parade and for viewpoints looking north and south along the waterfront there would be permanent beneficial visual effects.

A small number of permanent minor adverse visual effects are predicted where the new cruise terminal building would screen and enclose existing views across the River Mersey, but these effects would be very limited in extent and only in close proximity to the Development.

10. BUILT HERITAGE

The proximity of the Site to Liverpool's WHS and to two conservation areas has been described above. There are no listed buildings located within the Site although there are a number of listed buildings and non-designated heritage assets located nearby, including (amongst others):

- The Royal Liver Building (Grade I Listed), approximately 50m south of the Site;
- The Cunard Building (Grade II* Listed), approximately 125m south; and
- The Port of Liverpool Building (Grade II* Listed), approximately 200m south.

Some temporary adverse effects to the setting of the WHS and to nearby listed buildings and structures are predicted during the demolition and construction phases. However, through the implementation of a site-specific CEMP, care would be taken to limit the extent of vibration and dust effects. This would ensure that the temporary effects to nearby listed buildings and structures would be generally insignificant and there would be, at worst, only slight adverse effects to the setting of the WHS and the Castle Street Conservation Area.

Once the proposed cruise ship terminal building and associated infrastructure are completed and operational, effects to the nearby heritage assets would be uniformly beneficial.

Once the proposed Development is operational, the cruise ships that visit Liverpool are predicted to be larger and more frequent. This increase in size and frequency has the potential to result in small intermittent adverse effects to the setting of the heritage assets closest to the Site, although only on the occasions that cruise ships are docked at the new terminal.

11. ARCHAEOLOGY

A number of known and potential archaeological remains have been identified within and close to the Site.

The derelict Princes Jetty is the only surviving element of the original Liverpool Landing Stage, where many people embarked and disembarked for emigration to North America. It also demonstrates very early use of innovative construction techniques using reinforced concrete.

Associated with the jetty, there are several sets of railway tracks and the footprints of previous buildings and stone block surfaces, within Plot 11 and extending outside the Site. The tracks are part of the early twentieth century Riverside Railway, first shown on mapping in 1905. The railway and the buildings were part of the infrastructure of the Liverpool Docks, and therefore part of a major international port. Further survey would be required to fully assess the nature and extent of these surviving features.

Taken together, these features which survive within the Site, and which relate to the port, contribute to Liverpool's marine mercantile history and therefore have regional archaeological importance.

It is proposed to undertake a programme of archaeological investigation including recording of the existing jetty structure and the associated infrastructure on Princes Dock prior to demolition works commencing. A 'watching brief' is proposed during the creation of the proposed passenger pick up / drop off area on Plot 11 so that any additional subsurface archaeological remains would be assessed and recorded. With these mitigation measures in place, any adverse archaeological effects resulting from the removal of Princes Jetty and its associated infrastructure would be minor.

There is the potential for the Site to contain buried archaeological deposits dating back to prehistoric times until the present day. A 'watching brief' during future geotechnical site investigations is therefore proposed. Depending on the results of the watching brief, the requirement for further mitigation would be established if necessary. With the appropriate mitigation measures in place, no significant archaeological effects are predicted.

The northern end of Princes Dock is the site of a former eighteenth-century fort. Historic map evidence shows that the limits of the former fort may extend to within the northern part of the Site. Evidence suggests that the fort was dismantled to make way for the Princes Dock. It is unlikely that any footings or foundations of the fort remain, due the extensive nature of the works relating to the construction of the docks. No significant archaeological effects are therefore predicted.

12. GROUND CONDITIONS AND CONTAMINATION

A preliminary assessment of existing ground conditions and contamination risk at the Site has been undertaken, involving a site visit and desk-based research. This preliminary assessment has established that there is a potential for contamination to be present in the underlying soils and groundwater as a result of historical activities at the Site and the surrounding area.

During the demolition and construction works, any existing contamination on the Site could be exposed and disturbed. Furthermore, to facilitate demolition and construction it is anticipated that potentially polluting substances and activities would be introduced to the Site. A number of measures for good site management would be implemented to minimise the risk of contamination whilst providing protection to the River Mersey and groundwater beneath the Site from potential pollution incidents. These would be detailed within a CEMP which would be agreed with LCC prior to demolition and construction works commencing. In addition, a Foundation Works Risk Assessment would be prepared in consultation with the Environment Agency to establish the appropriate piling methodology to minimise contamination risks to aquifers underlying the Site.

It is possible that the Site and surrounding area may have suffered bomb damage during the Second World War and unexploded ordnance (UXO) could be encountered during excavation works. A specialist site-specific desk-based risk assessment of UXO risk would therefore be procured in advance of any intrusive works to examine the possibility of encountering UXO at the Site. In the event that the assessment identifies a potential risk, the recommendations and mitigation measures outlined in the UXO report would be deployed in full ahead of all future intrusive ground investigation and piling. Mandatory health and safety requirements would also

ensure all construction workers are provided with necessary awareness training to recognise potential UXO and are provided with safety instructions detailing actions to take should UXO be encountered.

In addition to any specific remediation measures, the creation of built elements and hardstanding across the majority of the Site and the provision of clean topsoil in soft landscaping areas would result in a low risk of harm to human health and the wider environment following completion of the Development.

13. MARINE ECOLOGY, ORNITHOLOGY AND TERRESTRIAL ECOLOGY

A desk-based review of available data for the marine, ornithological and terrestrial environment at the Site and surrounding area was conducted. Following this review, it was considered that further site-specific data were required for benthic (i.e. river-bed) invertebrates, and a benthic ecology survey was undertaken which involved the collection of grab samples and wall scrape samples within, and in the vicinity of, the Site. Data from the desk-based studies and site-specific survey were used to inform the assessment of effects.

The main effects considered were loss of habitat, disturbance of bottom sediments, sediment accretion, visual disturbance, airborne and underwater noise and vibration, changes to water quality and water pollution, collision risk and the introduction/spread of invasive non-native species and indirect food chain effects.

All effects were assessed to be of minor significance or less. To reduce the potential magnitude of adverse effects the following mitigation measures have been proposed:

- The piles for the jetty would be installed using rotary drilling which is less noisy and vibration-inducing than percussive piling;
- Use of a soft-start approach to piling (i.e. gradually increasing the force of piling, thereby steadily increasing the level of noise generated over a period of time and giving fish and marine mammals an opportunity to move away from the area before the loudest levels are reached); and
- A CEMP would be implemented and would provide inherent mitigation against potential pollution from activities at the Site.

A preliminary ecological appraisal of the terrestrial elements of the Site was undertaken which included a site visit. The Site is of low or negligible value to birds and terrestrial ecology. There are no ecological habitats of any significant value within the Site since it is dominated by areas of hardstanding and the derelict Princes Jetty. Nevertheless, in consultation with LCC and MEAS, a programme of additional wintering bird surveys was undertaken in late-2017 and early 2018 to establish if the Site, particularly Princes Jetty, is used by wintering birds. The surveys concluded that the Site is not used by significant numbers of wintering birds.

14. COASTAL PROCESSES, SEDIMENT TRANSPORT AND SEDIMENT CONTAMINATION

The elements of the Development that have the potential to affect the Mersey Estuary (i.e. the marine aspects) comprise:

- Demolition of the existing Princes Jetty; and
- Construction of a new landing stage and a suspended (piled) concrete deck.

The sensitive receptors considered included:

- Tidal flows;
- Wave effects;
- Sediment transport; and
- Sediment contamination.

A number of different forecasting methods were used to predict the potential effects of the Development on the existing marine environment. These included modelling the tidal flows and sediment transport during the demolition of the existing structure and once the Development is completed and operational.

The tidal range in the Mersey Estuary can vary from 4m at neap tides to approximately 10m during spring tides, giving a tidal range of over 4m (classified as macrotidal). The largest differences between spring and neap tides occur towards the mouth of the estuary. The speed of the water movements in the centre of the river channel frequently exceeds 1.65 metres per second, although this velocity decreases towards the banks of the estuary.

Due to the shape of the estuary (i.e. its narrow entrance) and its wide tidal range, the tides have a strong influence on the wave regime. At low tide, sand banks outside the mouth of the estuary shelter the Site from most of the wave energy entering from Liverpool Bay and the Irish Sea. At high tide, the increased water level within the estuary leads to larger wave heights.

Desk-based computer modelling has established that the likely effects of tidal flows, the wave regime, sediment transport and sediment contamination during demolition and construction operations would be insignificant. No mitigation measures are therefore required.

Similarly, most of the likely effects once the Development is completed and operational have been assessed as being insignificant, with no mitigation measures required.

15. CUMULATIVE EFFECTS

Two types of cumulative effects have been assessed:

- Type 1 Effects: The interaction of the individual effects during construction upon a set of defined sensitive receptors; for example, noise, traffic and visual intrusion; and
- Type 2 Effects: The combined effects arising from other reasonably foreseeable schemes.

Type 1 Effects

Table 1: Type 1 Cumulative Effects

Sensitive Receptors	Phase of Development			
	Demolition of Existing Structures	Piling for New Jetty	Construction of Cruise Terminal	Highway Works & Landscaping
Residents at Alexandra Tower	T, N, Vis	T, N, Vib, Vis	T, N, Vis	T, (N), (Vis)
Residents at 1 Princes Dock (Liverpool City Lofts) and Waterside Apartments	T, Vis	T, Vis	T, Vis	T, (Vis)
Occupants and users of existing commercial premises on Princes Parade	T, N, Vis	T, N, Vib, Vis	T, N, Vis	T, (N), (Vis)
Cyclists, pedestrians and other road users on local road network.	T, Vis	T, Vis	T, Vis	T, (Vis)

Key: T: Adverse construction traffic effects
 N: Adverse construction noise effects
 Vib: Adverse construction vibration effects
 Vis: Adverse visual effects
 (.): Possible very minor effects

Type 2 Effects

Table 2 sets out the reasonably foreseeable schemes that were considered as part of the assessment. **Figures 10 and 11** identify the locations of these schemes (known as 'cumulative schemes'). The reference numbers in **Table 2** help to identify the locations of the cumulative schemes in **Figure 11**. All other proposed schemes in the wider Liverpool and Merseyside area would be either too distant or too small-scale to have any cumulative effects with the proposed Development.

Liverpool Cruise Terminal
ENVIRONMENTAL STATEMENT: NON-TECHNICAL SUMMARY

Table 2: Schemes Included within the Cumulative Effects Assessment

Ref	Cumulative Scheme	Current Status	Approximate Distance from Site	Summary Description
n/a	Liverpool Waters Masterplan	Approved	On-site	Comprehensive redevelopment of up to 60ha of former dock land to provide a mixed-use development of up to 1,691,100sqm, including residential, commercial/retail units and public spaces.
1	The Hive, William Jessop Way	Approved subject to legal agreements	80m	Erection of 31 storey residential tower comprising 278 private apartments, parking spaces and recreational facilities.
2	The Lexington, William Jessop Way	Approved	120m	Erection of a 34-storey residential tower comprising 304 apartments, parking spaces and associated residential amenity areas.
3	William Jessop House	Registered March 2015	130m	Erection of an eight-storey office building with flexible ground floor space for retail, financial and professional, food and drink and office use.
4	Ovatus 1, Leeds Street	Approved April 2017	220m	Erection of 27 storey residential development plus basement levels, comprising 168 dwellings, plus associated public spaces.
5	Infinity, Leeds Street	Application submitted February 2017	370m	Demolition of existing buildings and construction of three towers (39, 33 and 27 storeys) together with a two-storey podium and basement, comprising 1,002 residential units together with commercial/retail uses, offices, leisure and parking spaces.
6	30-36 Pall Mall	Application submitted November 2016	540m	Demolition of existing buildings and structures and erection of part 10 and part 22 storey residential development comprising 336 apartments with associated communal facilities, commercial units and parking areas.
7	North Point, 70-90 Pall Mall	Under construction; completion spring/summer 2018	440m	Demolition of industrial buildings with facade retention of 70-90 Pall Mall and erection of a 4 to 8 storey mixed use development comprising 426 residential units, a multi-storey car park, offices, retail units and leisure areas.
8	Land to west of Waterloo Road Plot C04 and C06 Central Docks Liverpool Waters	Registered September 2017	430m	Erection of a part 14 and part 8 storey residential block comprising 237 apartments, commercial spaces and parking spaces.
9	Vacant Land William Jessop Way Liverpool	Approved subject to legal agreement	110m	Erection of 15 storey residential tower comprising 105 apartments and commercial units and associated parking spaces.

For the purposes of the assessment of Type 2 effects, it has generally been assumed that construction activities in relation to the Development and in relation to the cumulative schemes listed above would occur simultaneously. However, particularly in the case of outline planning consents, this is unlikely to actually occur.

The Liverpool Waters Masterplan cannot be built-out in its approved form in combination with all the other nine cumulative schemes. The Liverpool Waters Masterplan and the nine other cumulative schemes cannot and will not all be built-out together because of various clashes of footprint, specifically with schemes 1, 2, 3 and 9 in **Table 2** and **Figure 11**.

Therefore, in the assessment of Type 2 cumulative effects, for both the demolition and construction phases and the operational phase, an assessment of the proposed Liverpool Cruise Terminal Development in

Liverpool Cruise Terminal

ENVIRONMENTAL STATEMENT: NON-TECHNICAL SUMMARY

combination with the Liverpool Waters Masterplan is provided, followed by a separate assessment of the proposed Liverpool Cruise Terminal Development in combination with the nine 'other' cumulative schemes.

Table 3 summarises the assessment of cumulative effects. Each of the technical disciplines assessed within this EIA are addressed in turn. The results of the cumulative effects assessment are summarised first for the assessment of effects in combination with the Liverpool Waters Masterplan and then in combination with the other nine cumulative schemes.

Table 3: Summary of Cumulative Effects Assessment

Assessment	In Combination with Liverpool Waters Masterplan	In Combination with the Other Nine Cumulative Schemes
Air Quality	Occasional minor adverse cumulative effects from construction vehicle emissions at the closest sensitive receptors if demolition and construction activities occur simultaneously. No other significant cumulative effects.	Occasional minor adverse cumulative effects from construction vehicle emissions at the closest sensitive receptors if demolition and construction activities occur simultaneously, particularly at the cumulative schemes closest to the Site. No other significant cumulative effects
Noise and Vibration	At worst, temporary moderate adverse cumulative effects due to noise and vibration from demolition and construction activities at the closest sensitive receptors if demolition and construction activities occur simultaneously within the Princes Dock neighbourhood of the Masterplan area. Occasional minor adverse cumulative effects from construction vehicle noise at the closest sensitive receptors if demolition and construction activities occur simultaneously within the Princes Dock neighbourhood of the Masterplan area. No other significant cumulative effects.	At worst, temporary moderate adverse cumulative effects due to noise and vibration from demolition and construction activities at the closest sensitive receptors if demolition and construction activities occur simultaneously within 100m of the Site. Occasional minor adverse cumulative effects from construction vehicle noise at the closest sensitive receptors if demolition and construction activities occur simultaneously at the closest cumulative schemes. No other significant cumulative effects.
Townscape and Visual Impact	There would be a large degree of change resulting from either the Liverpool Waters Masterplan or the other nine cumulative schemes in combination. However, the effect of the proposed Development itself within the context of this large degree of change would generally be negligible or minor, or there would be no cumulative effects at all as the developments would not be seen together.	
Built Heritage	If tower cranes are present concurrently, there could be, at worst, temporary minor adverse cumulative effects on the setting of the heritage assets. There would be permanent beneficial effects on the setting of the heritage assets within the World Heritage Site and Stanley Dock conservation area and the important designated heritage assets in the area.	If tower cranes are present concurrently, there could be, at worst, temporary minor adverse cumulative effects on the setting of the heritage assets. The proposed Development in combination with any or all of the other nine cumulative schemes would have no significant cumulative effect on heritage assets in the vicinity of the Site.
Archaeology	The build-out of the Liverpool Waters Masterplan would have the potential to result in the truncation and / or removal of any surviving elements of the eighteenth-century fort or associated infrastructure of Princes Dock. This would result in possible minor adverse cumulative effects. No other cumulative effects are predicted.	Cumulative schemes numbers 1 and 9 (refer to Table 2 and Figure 11) have the potential to result in the truncation and / or removal of any surviving elements of the eighteenth-century fort or associated infrastructure of Princes Dock. This would result in possible minor adverse cumulative effects. No other cumulative effects are predicted.

Liverpool Cruise Terminal
ENVIRONMENTAL STATEMENT: NON-TECHNICAL SUMMARY

Assessment	In Combination with Liverpool Waters Masterplan	In Combination with the Other Nine Cumulative Schemes
Ground Conditions and Contamination	<p>Sources of contamination such as oil, chemicals and concrete would likely be introduced during the demolition and construction of the proposed Development and each of the cumulative schemes, thereby increasing the potential for accidental spillages and contamination of underlying aquifers, surface waters and sensitive ecological receptors. Such occurrences would be minimised as far as practicable through the implementation and adherence to best practice control measures and site-specific CEMPs; however, risks cannot be completely eradicated.</p> <p>Therefore, the predicted cumulative effect on the quality of controlled waters and sensitive ecological receptors can be regarded as generally negligible and, at worst, temporary and minor adverse, assuming adherence to relevant regulatory and best practice standards.</p> <p>None of the cumulative schemes include land uses that would be likely to result in significant contamination of soil or controlled waters. Once the proposed Development and any of the cumulative schemes are completed and operational, no significant effects to human health, controlled waters, sensitive ecological receptors, plants and landscaped areas or buried services and structures would be expected, although the potential for pollution incidents associated with the day to day activities of the proposed cruise terminal and associated infrastructure cannot be completely discounted. For these reasons, the predicted cumulative effect on the quality of controlled waters and sensitive ecological receptors can be regarded as generally negligible and, at worst, minor adverse.</p>	
Marine Ecology, Ornithology and Terrestrial Ecology	Negligible cumulative effects are predicted for all potential ecological receptors.	Negligible cumulative effects are predicted for all potential ecological receptors.
Coastal Processes, Sediment Transport and Sediment Contamination	<p>Any construction works taking place within the estuary as part of the Liverpool Waters Masterplan would have the potential to influence coastal processes in the marine environment. Any adverse effects in terms of the wave regime, sediment transport or erosion would be likely to be small and localised. Nevertheless, in combination with the predicted effects during demolition and construction for the proposed Development, temporary minor adverse cumulative effects cannot be ruled out.</p>	The other nine cumulative schemes are not located adjacent to the Mersey Estuary. There would be no cumulative effects on coastal processes, sediment transport and sediment contamination.

In addition, the MMO requested that possible combined effects are considered with the Wirral Waters proposals. A review of the Wirral Waters planning application documents indicates that:

- The land and water within and around the proposed Site supports little of biodiversity interest and the valued ecological receptors identified are not significantly affected by the proposed Development; and
- None of the potential effects that arise from the Development in either its construction or operational phase would extend as far as the Wirral Waters development on the west bank of the Mersey Estuary.

Consequently, it is considered that there will not be any significant cumulative effects with the Wirral Waters development.

16. ES AND ES ADDENDUM AVAILABILITY AND COMMENTS

The ES and the ES Addendum (third issue) are available for viewing by the public on the MMO website:

<https://www.gov.uk/check-marine-licence-register>

Hard copies of this NTS and of the full ES are available for purchase. For copies of these documents, please contact:

Waterman Infrastructure and Environment Ltd

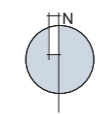
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Manchester

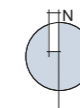
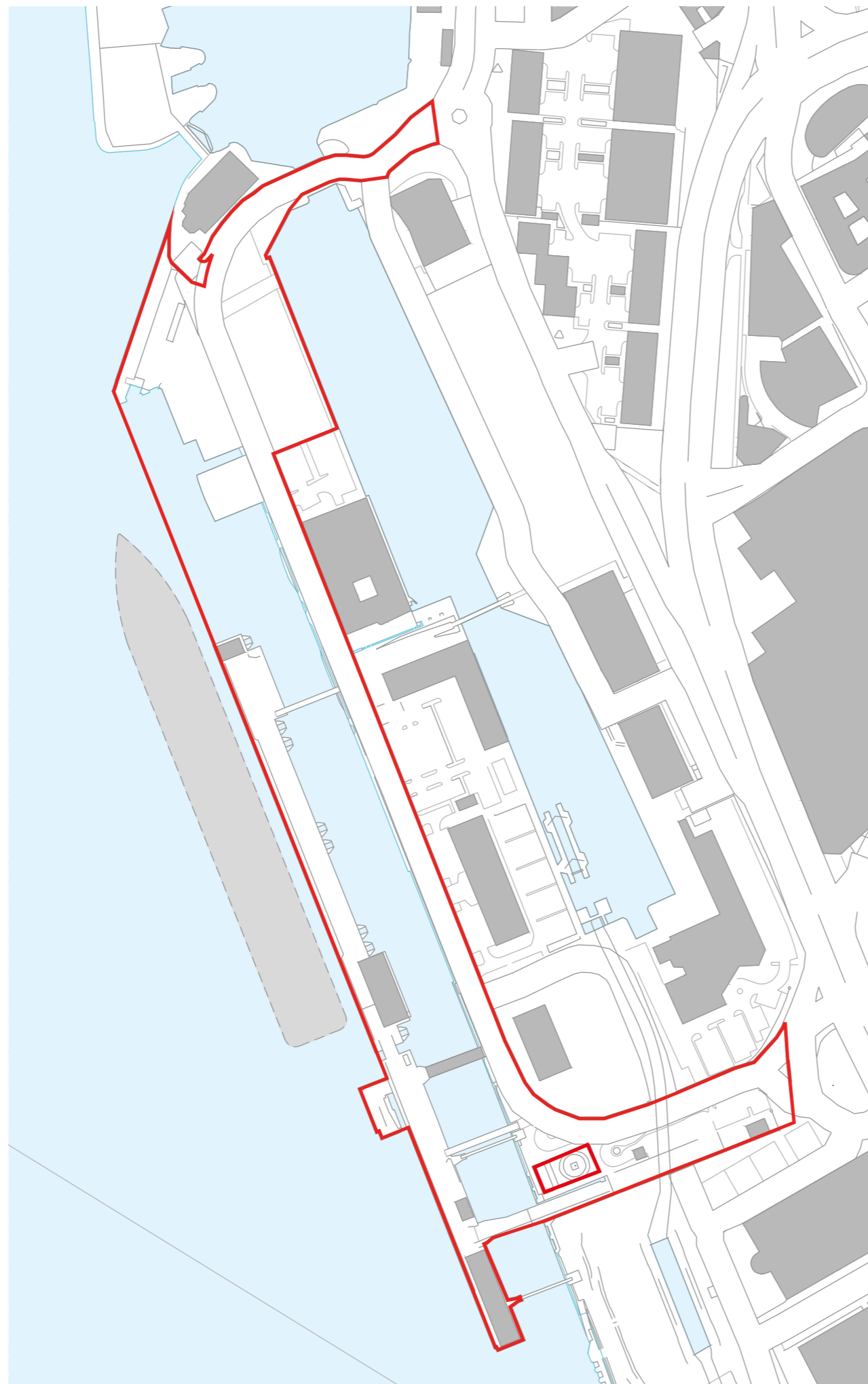
M2 5QR

Tel: 0161 839 8392

Email: ie@watermangroup.com








Project Details	WIE12464-100: Liverpool Cruise Terminal
Figure Title	Figure 1: Site Location
Figure Ref	WIE12464-100_GR_ES_1.1A
Date	2017
File Location	\\s-inc\wiel\projects\wie12464\100\graphics\es\issued figures










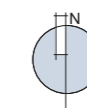
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Figure Title	Figure 2: Site Boundary
Figure Ref	WIE12464-100_GR_ES_1.2A
Date	2017
File Location	\\s-incs\wiel\projects\wie12464\100\graphics\es\issued figures



-  Site Boundary
-  World Heritage Site
-  World Heritage Site Buffer
-  Stanley Dock Conservation Area
-  Castle Street Conservation Area

Listed Buildings

-  Memorial to Heroes of the Marine Engine Room (Grade II Listed)
-  Royal Liver Building (Grade I Listed)
-  Monument to Sir Alfred Lewis Jones (Grade II Listed)
-  Cunard Building (Grade II Listed)
-  Monument to Edward VII (Grade II Listed)
-  Port of Liverpool Building (Grade II Listed)
-  Church of Our Lady and St. Nicholas (Grade II Listed)



Project Details

WIE12464-100: Liverpool Cruise Terminal

Figure Title

Figure 3: Existing Land use

Figure Ref

WIE12464-100_GR_ES_3.1A

Date

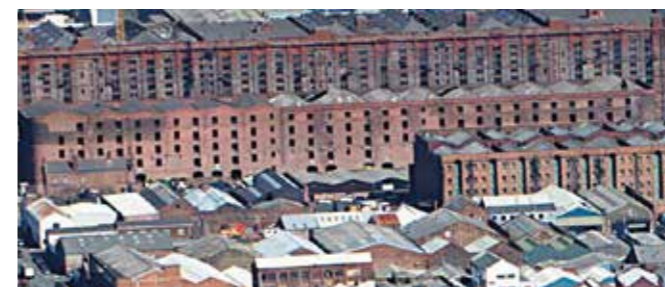
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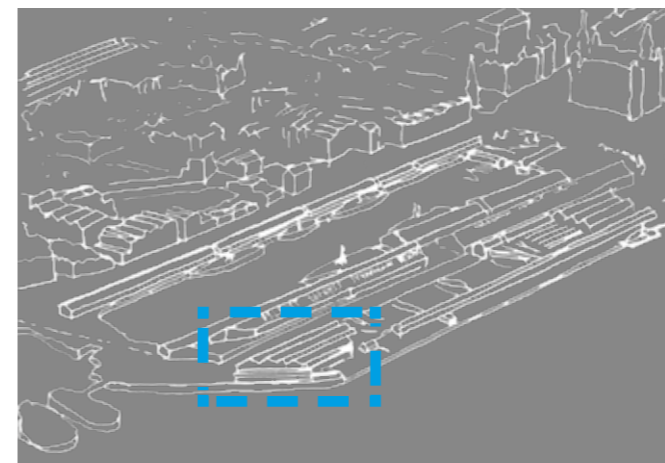


Right: The roofscape of the Stanley Dock and '10 Streets' area, with repetitive and angular forms covering large-plan buildings



Right: Sketch of Princes Dock in the 1920s, with Liverpool Riverside Railway Station and the landing stages. The angle of Princes Jetty forces an intersection of the roofs, and creates a geometry which has been recreated in this 'Folded' option.

Left: The interior view from the cafe, with view to the river and arrival atrium. The undulating roof creates interest inside the building, as well as giving excellent panoramic views across of the River Mersey.



Project Details	WIE12464-100: Liverpool Cruise Terminal
Figure Title	Figure 4: Indicative Design Option 1
Figure Ref	WIE12464-100_GR_ES_4.1A
Date	2017
File Location	\\s-Incs\wie\projects\wie12464\100\graphics\es\issued figures



Right: The existing Princes Jetty structure, with horizontal timber boarding and strong vertical elements. The condition of the jetty has created a haphazard and waved pattern, which has informed the screen to the west elevation of the proposed terminal.

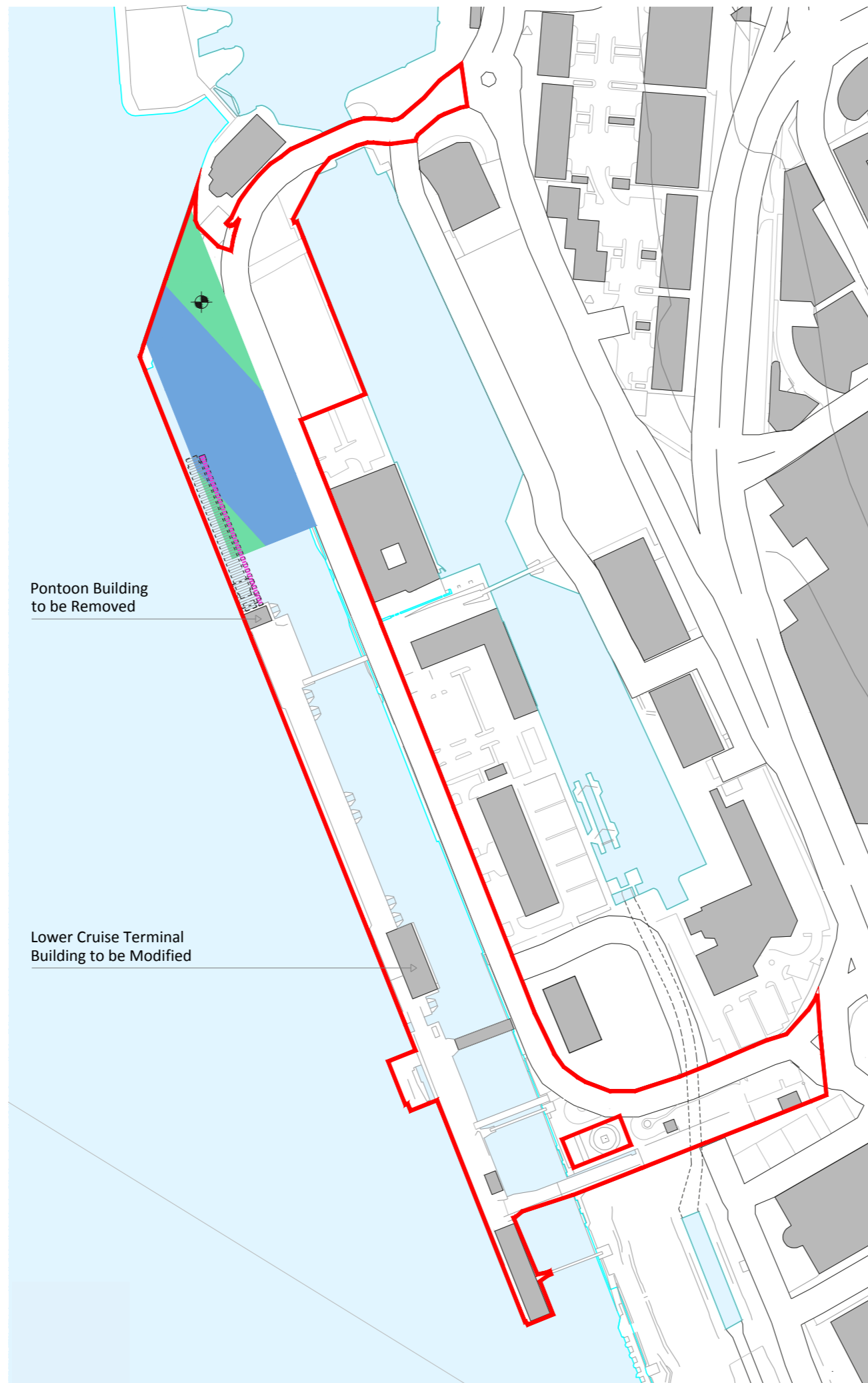


Right: The colour, banding and texture of the dock wall influenced the design of the Slope option - with the lighter textured element sitting on a darker band.



Left: The interior view from the cafe, with view to the river and arrival atrium. The panels to the west elevation create a dappled pattern within the building, helping to shade the interior, whilst still celebrating views out to the River Mersey.

Project Details	WIE12464-100: Liverpool Cruise Terminal
Figure Title	Figure 5: Indicative Design Option 2
Figure Ref	WIE12464-100_GR_ES_4.2A
Date	2017
File Location	\\s-Incs\wie\projects\wie12464\100\graphics\es\issued figures



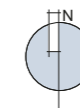
- Site Boundary
- Existing Jetty Level
+7.55m A.O.D.
- Proposed new linkspan bridge for commercial vehicles (one way)
Maximum Level +18.00m A.O.D.
- Extent of proposed new linkspan (walkway) for pedestrians
Maximum Level +18.00m A.O.D.

Proposed Terminal Building

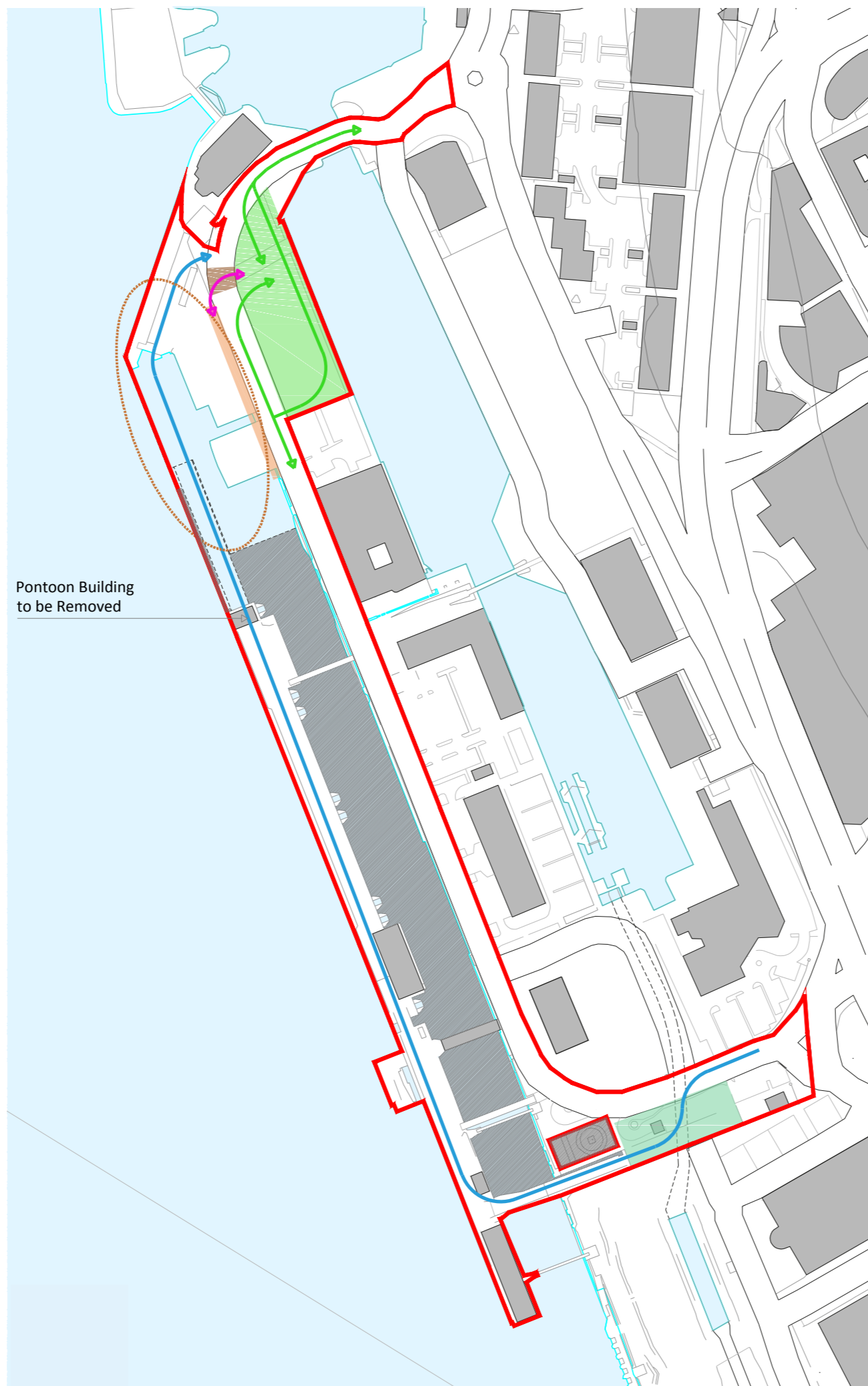
- Extent of Proposed Upper Floor(s) / roof.
Maximum Level +24.00m A.O.D.
- Extent of Proposed Building
Maximum Level +30.00m A.O.D.

Pontoon Building
to be Removed

Lower Cruise Terminal
Building to be Modified

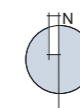


Project Details	WIE12464-100: Liverpool Cruise Terminal
Figure Title	Figure 6: Parameter Plan 1 – Maximum Footprint and Heights
Figure Ref	WIE12464-100_GR_ES_5.1A
Date	2017
File Location	\\s-incs\wiel\projects\wie12464\100\graphics\es\issued figures



- Site Boundary
- Passenger Pick-Up and Drop-Off Area
- Shared Surface Crossing
- Coach Bays (chevrons)
- Secure Marshalling Area for HGVs, commercial vehicles, taxis & Isle of Man Vehicular Marshalling Area
- Foot Passenger Main Desire Line
- Terminal Traffic Access to Interchange Area (inc. private vehicles, taxis, shuttle buses, coaches)
- Servicing/Deliveries

Pontoon Building to be Removed



Project Details	WIE12464-100: Liverpool Cruise Terminal
Figure Title	Figure 7: Parameter Plan 3 – Movement and Access
Figure Ref	WIE12464-100_GR_ES_5.3A
Date	2017
File Location	\\s-incs\wie\projects\wie12464\100\graphics\es\issued figures



— Site Boundary

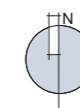
Development Parcels

Passenger Pick-Up / Drop-Off Area

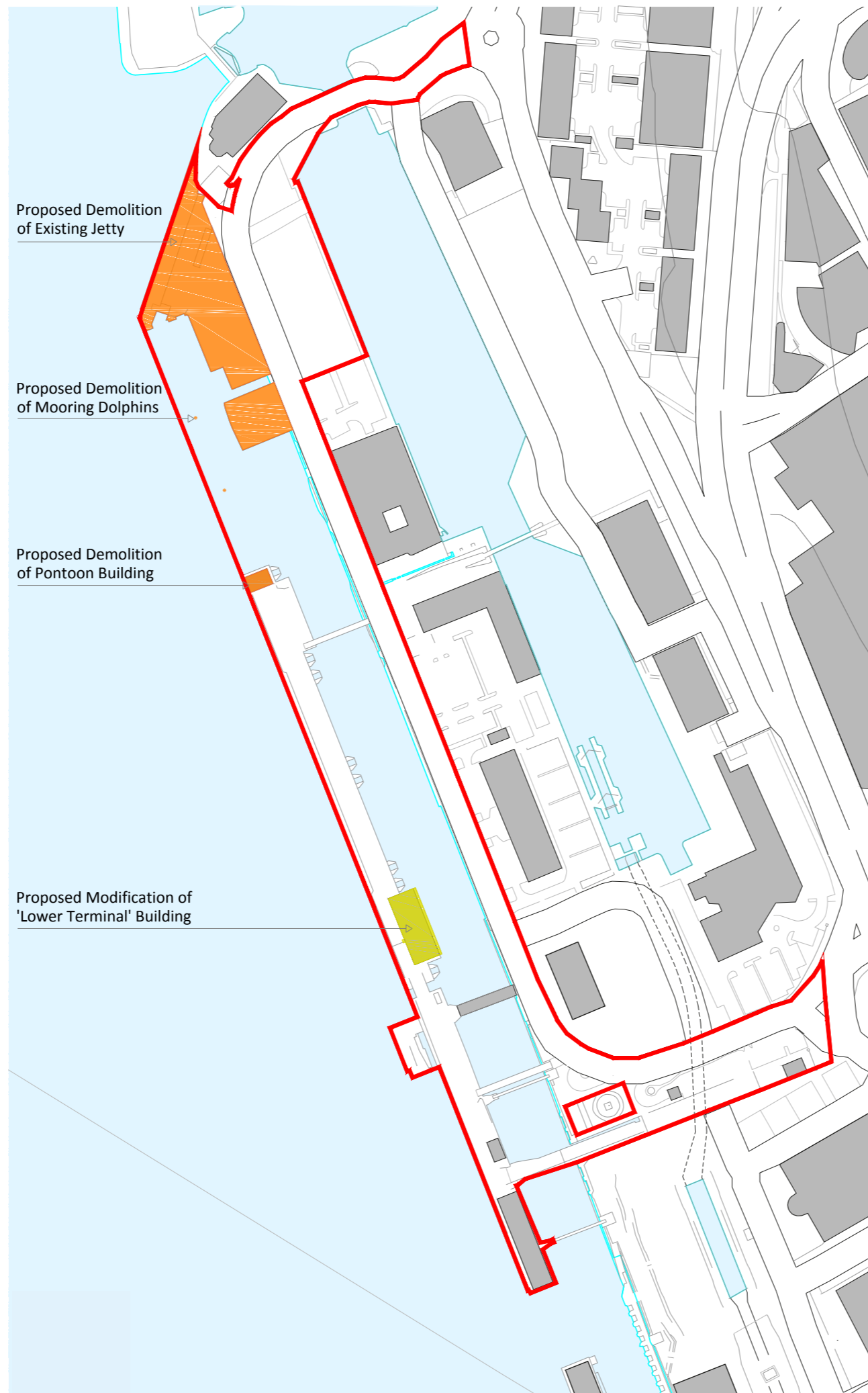
Terminal Building

Store Building

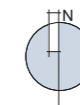
Pontoon Building
to be Removed



Project Details	WIE12464-100: Liverpool Cruise Terminal
Figure Title	Figure 8: Parameter Plan 4 – Development Parcels
Figure Ref	WIE12464-100_GR_ES_5.4A
Date	2017
File Location	\\s-incs\wiel\projects\wie12464\100\graphics\es\issued figures




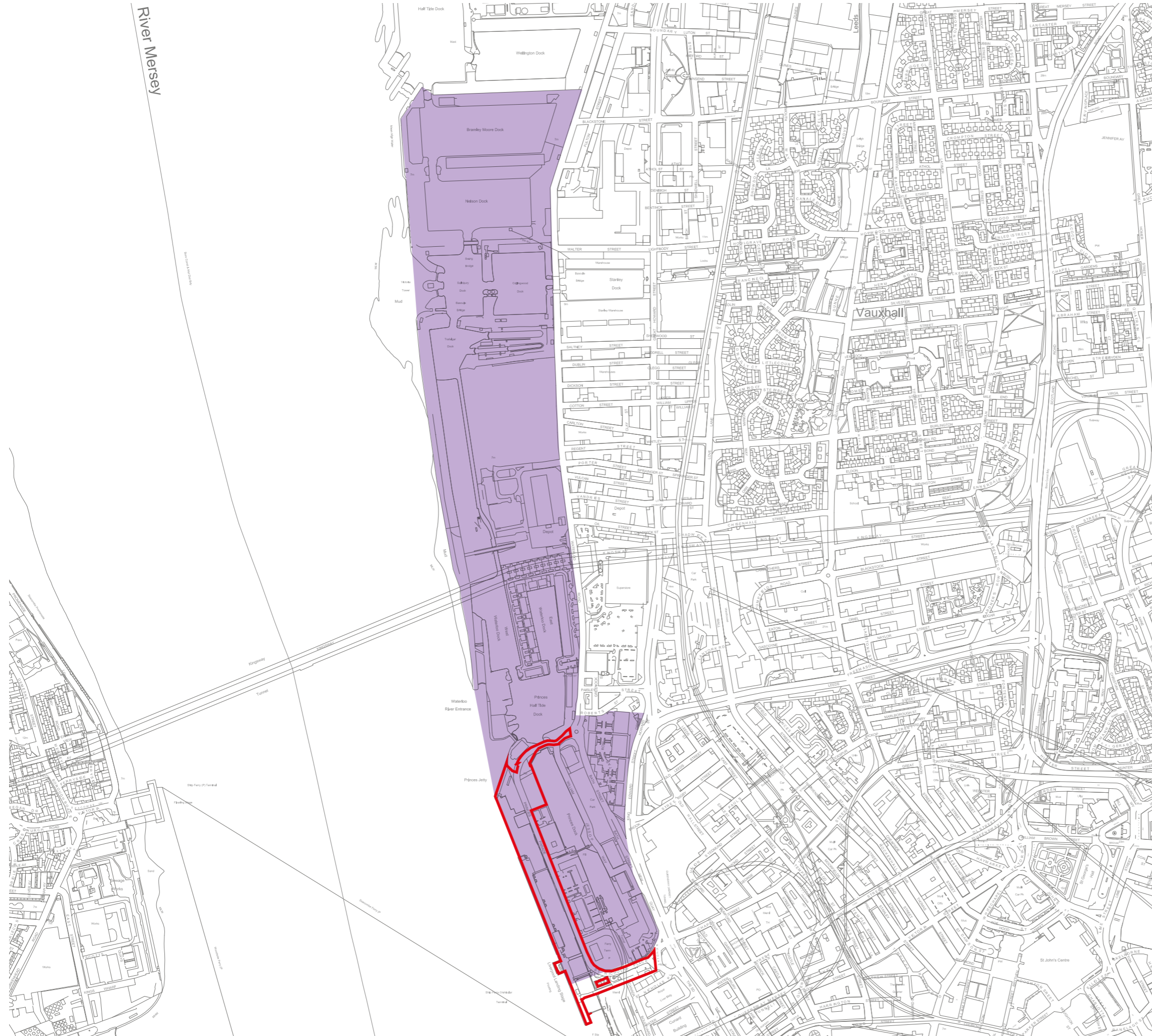
- Site Boundary
- Proposed Demolition Works
- Proposed Building Modification



Project Details	WIE12464-100: Liverpool Cruise Terminal
Figure Title	Figure 9: Parameter Plan 2 – Demolition Plan
Figure Ref	WIE12464-100_GR_ES_5.2A
Date	2017
File Location	\\s-incs\wiel\projects\wie12464\100\graphics\es\issued figures

 Site Boundary

 Extent of Liverpool Waters Masterplan Area (Planning Ref: 100/2424)



Project Details

WIE12464-100: Liverpool Cruise Terminal

Figure Title

Figure 10: Liverpool Waters Masterplan Area

Figure Ref

WIE12464-100_GR_ES_15.1A

Date

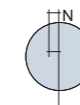
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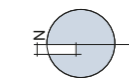
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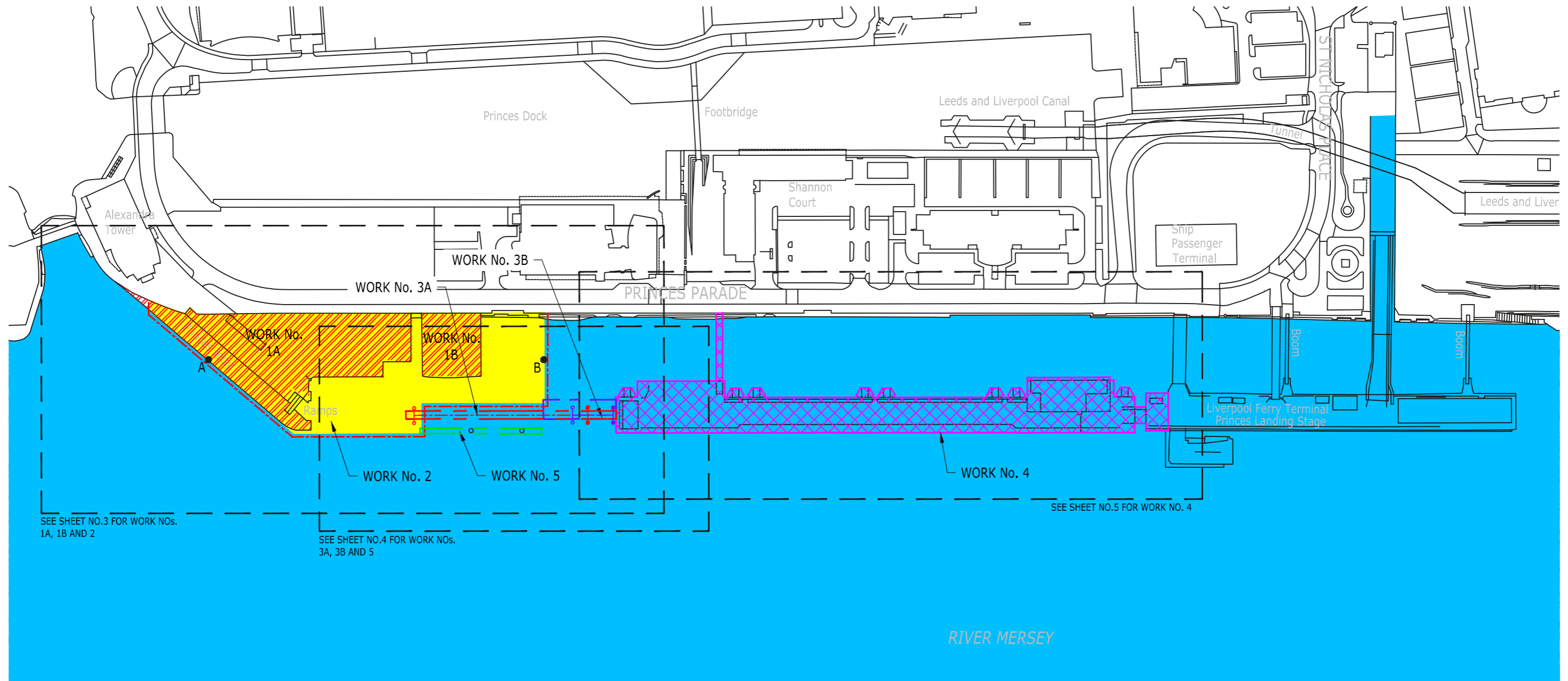
- Site Boundary
- 1 The Hive, William Jessop Way (17F/0456)
- 2 The Lexington, William Jessop Way (16F/1370)
- 3 William Jessop House (15F/0560)
- 4 Ovatus 1, Leeds Street (17F/0042)
- 5 Infinity, Leeds Street (17F/0340)
- 6 30-36 Pall Mall (16F/2634)
- 7 North Point, 70-90 Pall Mall (14F/2543)
- 8 Land to west of Waterloo Road Plot C04 and C06 Central Docks Liverpool Waters (17F/1628)
- 9 Vacant Land William Jessop Way Liverpool (17F/0913)



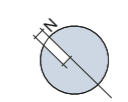
<p>Project Details</p> <p>Figure Title</p> <p>Figure Ref</p> <p>Date</p> <p>File Location</p>	<p>WIE12464-100: Liverpool Cruise Terminal</p> <p>Figure 11: Other Cumulative Schemes</p> <p>WIE12464-100_GR_ES_15.2A</p> <p>2017</p> <p>\\s-incs\wiel\projects\wie12464\100\graphics\es\issued figures</p>
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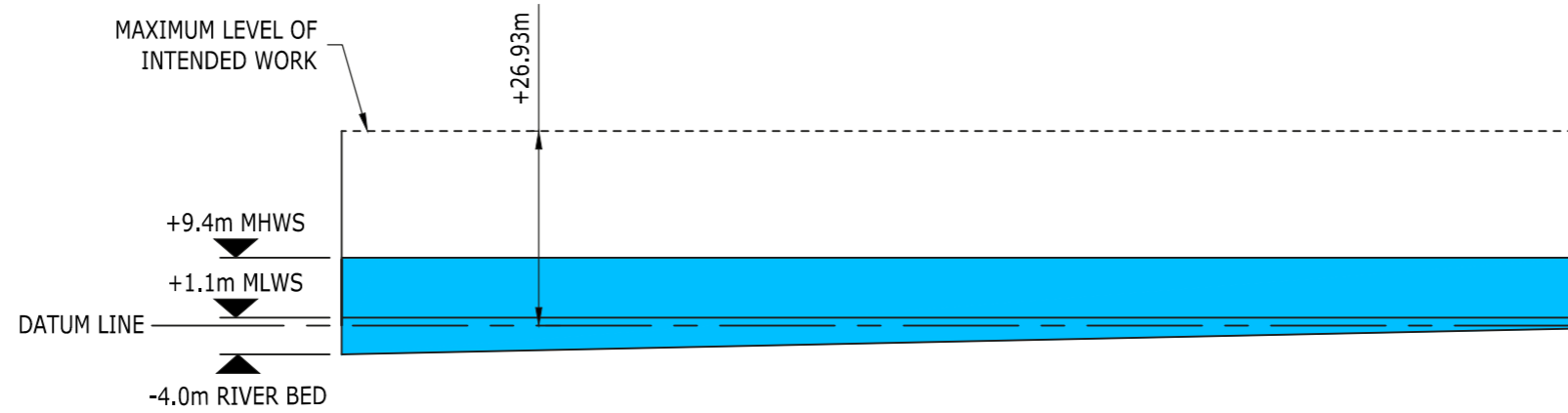
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Figure Title	Figure A1: Location Plan
Figure Ref	WIE12464-100_GR_ESA_A1C
Date	2019
File Location	\\s-incs\wie1\projects\wie12464\100\graphics\es\issued figures



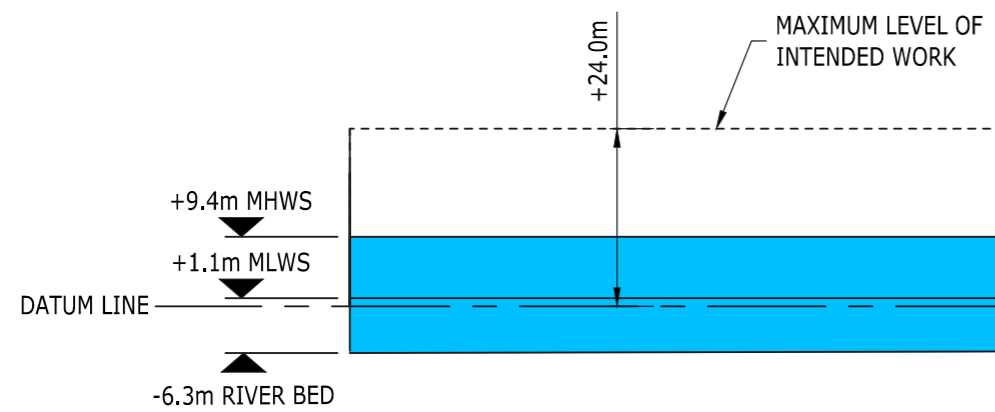
- TIDAL WATERS
- COMMENCEMENT OF WORK
- TERMINATION OF WORK



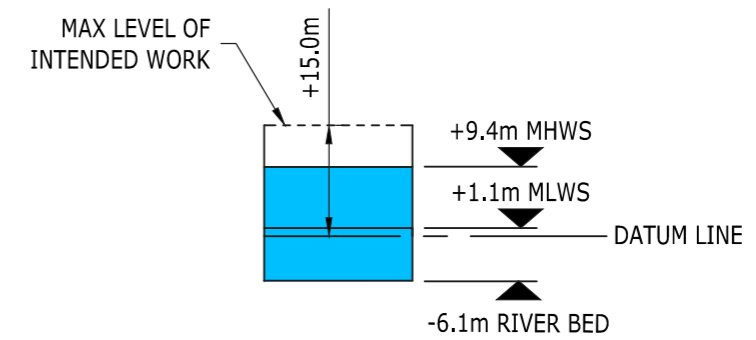
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Figure Title	Figure A2: Key Plan
Figure Ref	WIE12464-100_GR_ESA_A2C
Date	2019
File Location	\\s-inc\wiel\projects\wie12464\100\graphics\es\issued figures



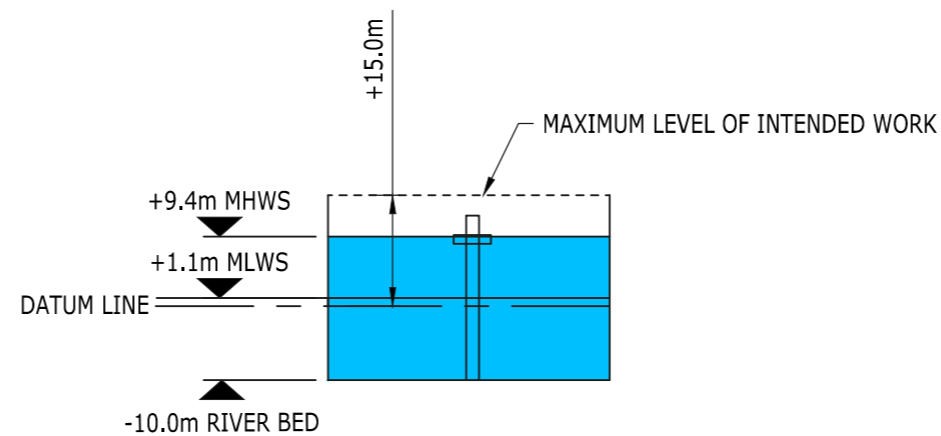
LONGITUDINAL SECTION ALONG WORK No.2
FROM POINT A TO POINT B



LONGITUDINAL SECTION
ALONG WORK No.3A



LONGITUDINAL SECTION
ALONG WORK No.3B



ELEVATION ON TYPICAL MONOPILE
MOORING - DOLPHIN
WORK No.5

NOTES

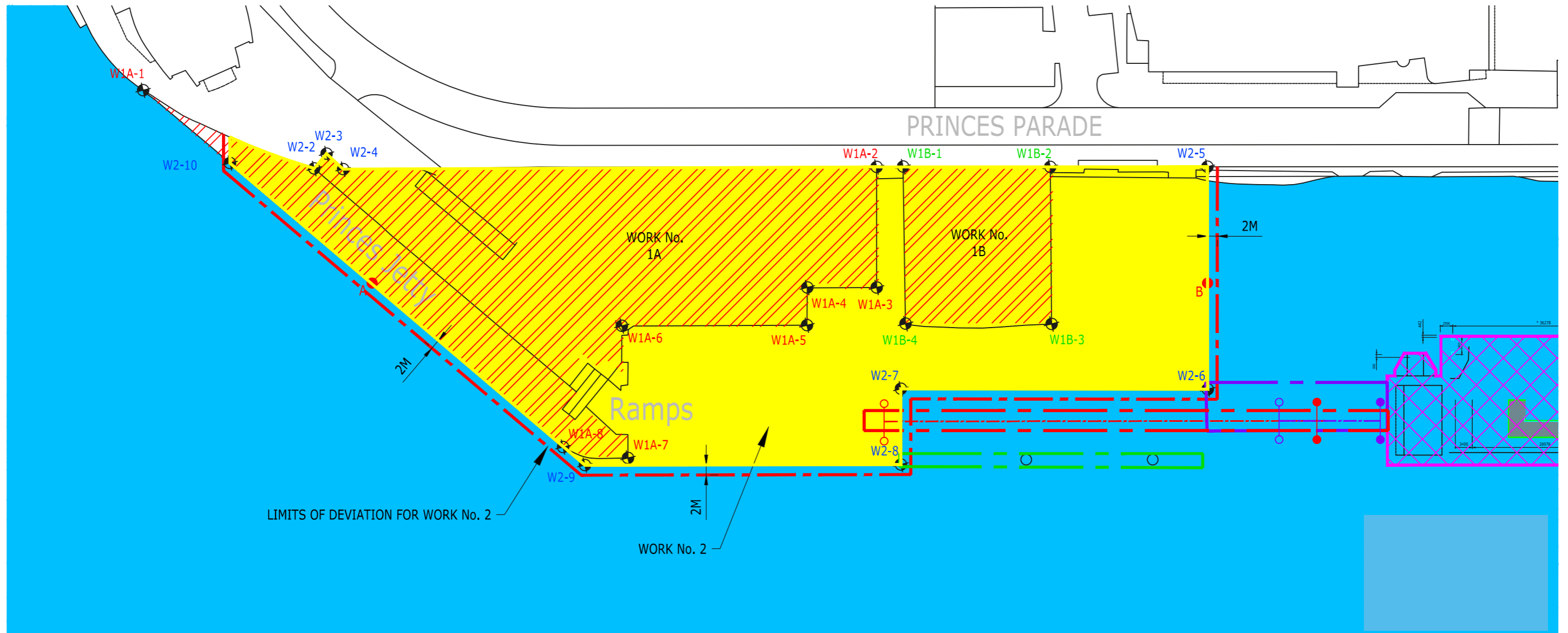
1. MHWS - MEAN HIGH WATER SPRINGS
2. MLWS - MEAN LOW WATER SPRINGS
3. ALL LEVELS ARE IN METERS AND RELATIVE TO CHART DATUM
4. TIDAL WATERS

Project Details	WIE12464-100: Liverpool Cruise Terminal ES Addendum
Figure Title	Figure A3: Sections Work Nos 2, 3a, 3b and 5
Figure Ref	WIE12464-100_GR_ESA_A3C
Date	2019
File Location	\\s-incs\wiel\projects\wie12464\100\graphics\esalissued figures

CO-ORDINATES WORK NO. 1A		
POINT	Latitude	Longitude
W1A-1	53.411160	-3.0017572
W1A-2	53.409890	-3.0011265
W1A-3	53.409808	-3.0014609
W1A-4	53.409923	-3.0015407
W1A-5	53.409897	-3.0016458
W1A-6	53.410204	-3.0018607
W1A-7	53.410103	-3.0022199
W1A-8	53.410218	-3.0022646
W2-2	53.410822	-3.0017777
W2-3	53.410812	-3.0017223
W2-4	53.410774	-3.0017461

CO-ORDINATES WORK NO. 1B		
POINT	Latitude	Longitude
W1B-1	53.409847	-3.0010950
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W1B-3	53.409492	-3.0013610
W1B-4	53.409735	-3.0015277

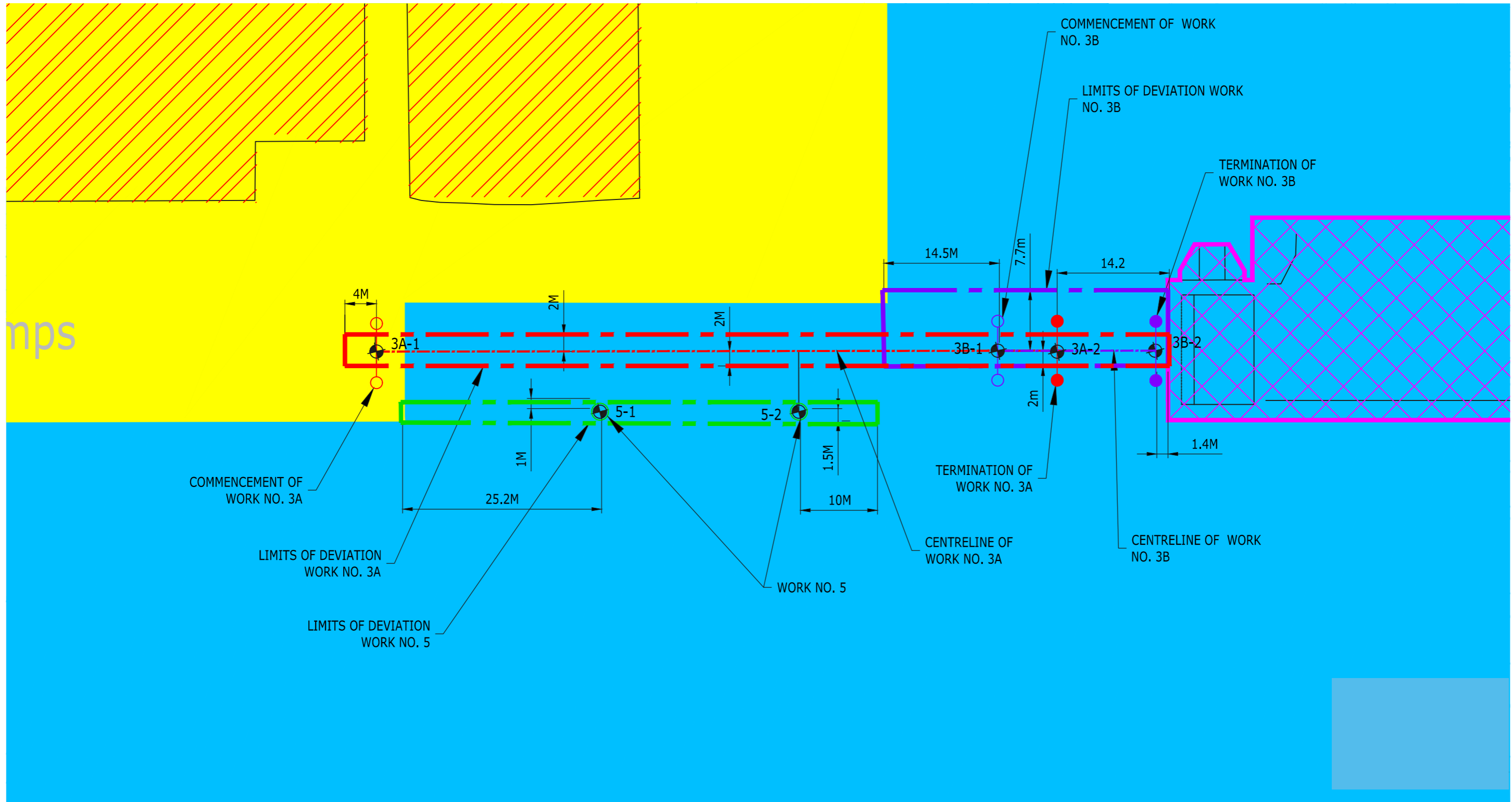
CO-ORDINATES WORK NO. 2		
POINT	Longitude	Longitude
W2-1	53.410984	-3.0017876
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W2-3	53.410812	-3.0017223
W2-4	53.410774	-3.0017461
W2-5	53.409342	-3.0007458
W2-6	53.409188	-3.0013627
W2-7	53.409698	-3.0017144
W2-8	53.409646	-3.0019244
W2-9	53.410169	-3.0022894
W2-10	53.410966	-3.0018594



- TIDAL WATERS
 - LIMITS OF DEVIATION MEASURED FROM CENTRELINE
 - DEMOLITION WORK
 - COMMENCEMENT OF WORK
 - TERMINATION OF WORK
- COLOURS VARY
DEPENDENT UPON
WORK NO.



Project Details	WIE12464-100: Liverpool Cruise Terminal ES Addendum
Figure Title	Figure A4: Works Plan – Work Nos 1a, 1b and 2
Figure Ref	WIE12464-100_GR_ESA_A4C
Date	2019
File Location	\\s-incs\wiel\projects\wie12464\100\graphics\esalissued figures



TIDAL WATERS

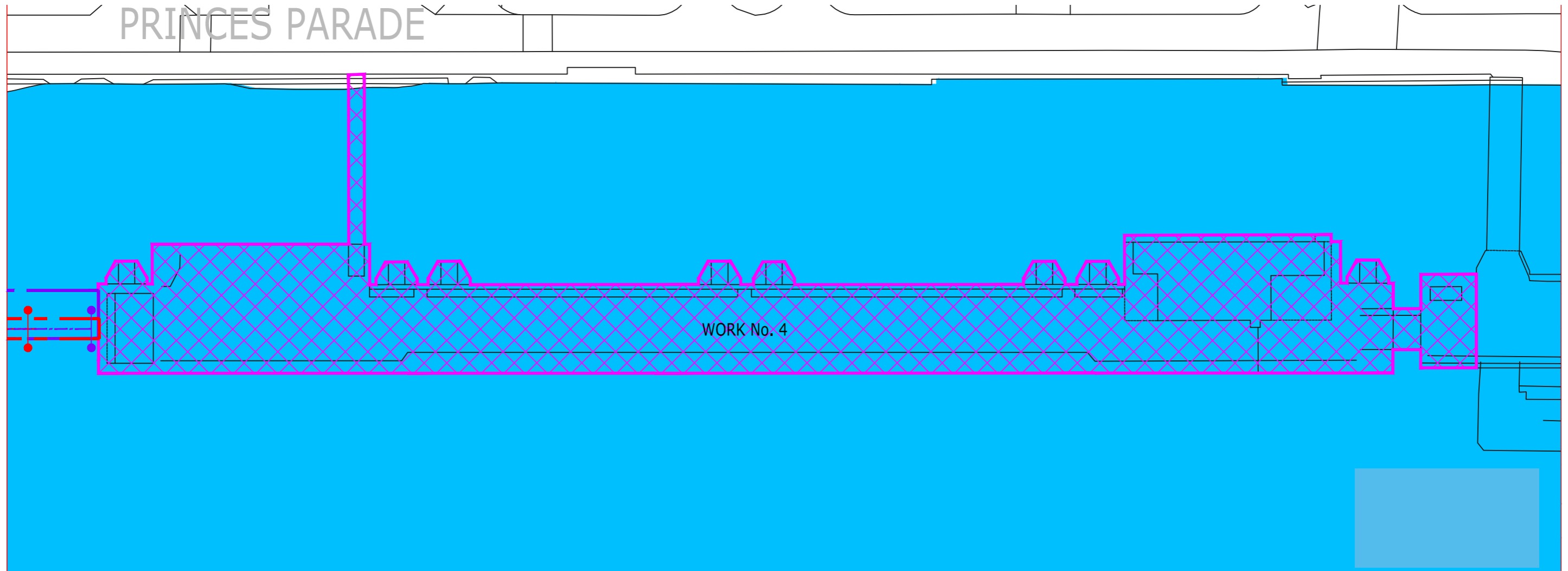
- LIMITS OF DEVIATION MEASURED FROM CENTRELINE
 - COMMENCEMENT OF WORK
 - TERMINATION OF WORK
- } COLOURS VARY DEPENDENT UPON WORK NO.

CENTRELINE START/FINISH CO-ORDINATES FOR WORK NOS 3A & 3B		
POINT	Latitude	Longitude
3A-1	53.409703	-3.0018239
3A-2	53.408985	-3.0013267
3B-1	53.409048	-3.0013685
3B-2	53.408882	-3.0012533

CENTRE POINT OF EACH MOORING BOLLARD FOR WORK NO. 5		
POINT	Latitude	Longitude
5-1	53.409441	-3.0017667
5-2	53.409231	-3.0016213



Project Details	WIE12464-100: Liverpool Cruise Terminal ES Addendum
Figure Title	Figure A5: Works Plan – Work Nos 3a, 3b and 5
Figure Ref	WIE12464-100_GR_ESA_A5C
Date	2019
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- TIDAL WATERS
- EXTENT OF WORK NO. 4



Project Details	WIE12464-100: Liverpool Cruise Terminal ES Addendum
Figure Title	Figure A6: Works Plan – Work No 4
Figure Ref	WIE12464-100_GR_ESA_A6C
Date	2019
File Location	\\s-Incs\wie\projects\wie12464\100\graphics\es\issued figures

Source: Ramboll

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