



ROBERTSON PROPERTY LTD AND CARDIFF COUNCIL

ATLANTIC WHARF, BUTETOWN MASTERPLAN AND CARDIFF ARENA AND HOTEL

NON-TECHNICAL SUMMARY

AUGUST 2021

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CONTENTS

1	INTRODUCTION	4
2	DESCRIPTION OF THE SITE AND DEVELOPMENT	6
2.1	The Site	6
2.2	The Surrounding Area	6
2.3	Environmental Designations	7
2.4	The Development Proposals	7
2.5	Consideration of Alternatives	8
3	SCOPE AND APPROACH	10
3.1	Scope of Assessment	10
4	ENVIRONMENTAL ASSESSMENT	13
4.1	Introduction	13
4.2	Traffic and Transport	13
4.3	Water Resources	14
4.4	Ground Conditions	15
4.5	Biodiversity	15
4.6	Air Quality	16
4.7	Noise and Vibration	17
4.8	Cultural Heritage	17
4.9	Socio-Economics	18
4.10	Health	18
4.11	Townscape and Visual Amenity	19
4.12	Climate Change	21
4.13	Materials and Waste	22
4.14	Wind Microclimate	22
5	RESIDUAL AND CUMULATIVE EFFECTS	25
5.1	Residual Effects	25
5.2	Cumulative Effects	25
6	SUMMARY	26

1 INTRODUCTION

- 1.1.1 This report provides a summary, in non-technical language, of the Environmental Impact Assessment (EIA) undertaken in support of a hybrid planning application, for the redevelopment of part of the Atlantic Wharf, Butetown Masterplan area, and the proposed development of a new Arena and associated Hotel (on land within the illustrative masterplan area) (the 'Proposed Development') on land at Cardiff Bay (the 'Site').
- 1.1.2 The Site is located within the Inner Harbour area of Cardiff Bay, Cardiff and within the administrative area of Cardiff Council. Figure 1 illustrates the location of the Site, and the application boundary.
- 1.1.3 The Site which extends to 13.5 hectares in size comprises a large part of the Atlantic Wharf, Butetown Masterplan. The arena and hotel development is encompassed within this area.
- 1.1.4 This Non-Technical Summary provides a brief Site description, a discussion of the proposals and then presents the assessment findings for each technical section of the Environmental Statement. For further, more detailed technical information relating to the existing baseline conditions, the Proposed Development and the impact assessment, reference should be made to the Environmental Statement (ES).

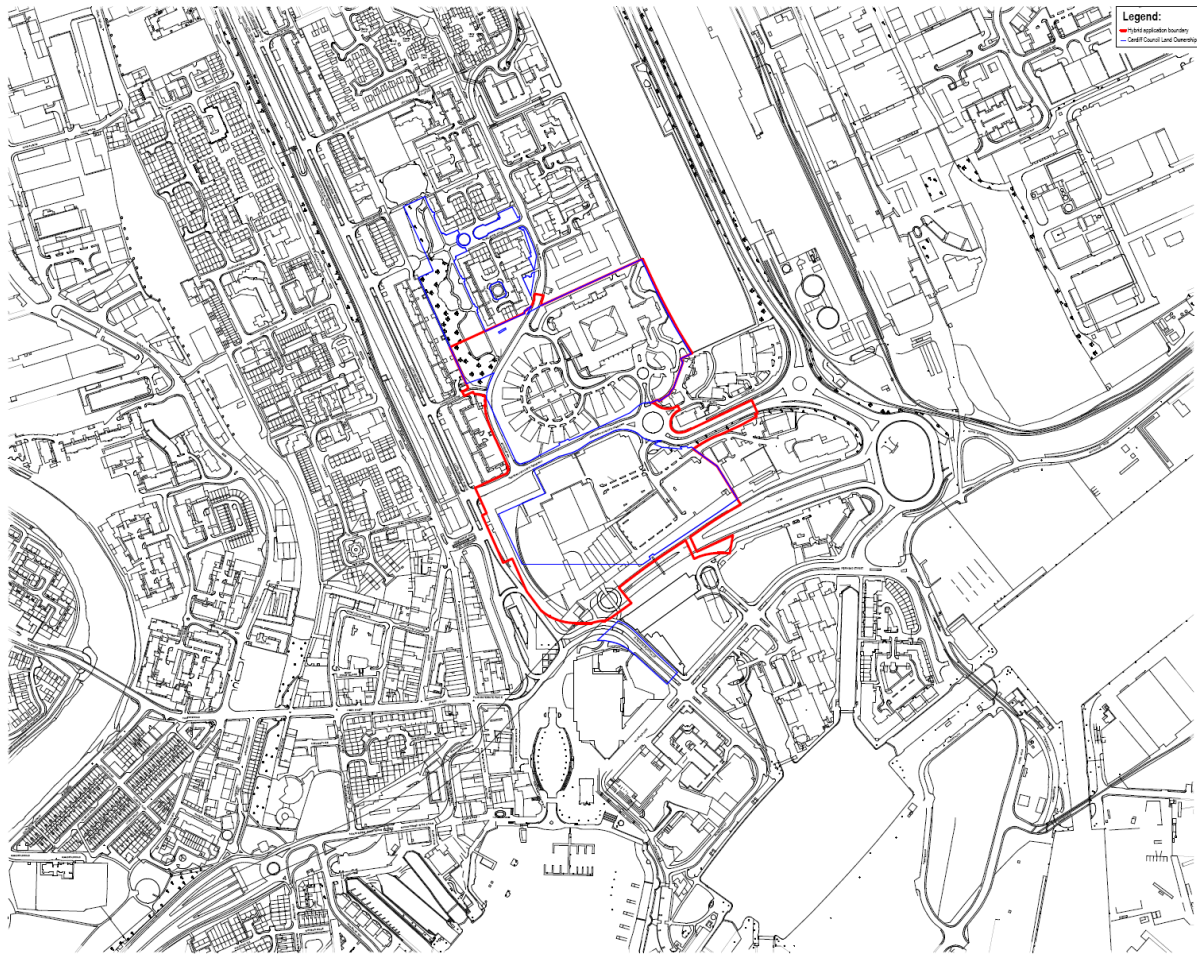


Figure 1 – Site Location

2 DESCRIPTION OF THE SITE AND DEVELOPMENT

2.1 The Site

- 2.1.1 The Site is located on land within the Inner Harbour area of Cardiff Bay, Cardiff. The Site is located between Bute East Dock and the Future Inn to the east, Lloyd George Avenue to the west, the A4232 and the Wales Millennium Centre to the south and Schooner Way and Silurian Park to the north.
- 2.1.2 The Site is 13.5 hectares in size and is currently occupied by Cardiff County Hall and its car park, the Red Dragon Centre and its car park, part of Silurian Park, Schooner Way and Hemingway Road.
- 2.1.3 The outline application area of the Site is relatively flat but contains a number of constraints below the ground including a Welsh Water sewer which runs underneath the existing Red Dragon Centre, various telecommunications equipment and the Dock Feeder. The Site contains a number of buildings which will be demolished should planning permission be granted, as well as a number of mature trees that will need to be cleared in the Red Dragon Centre car park and near its entrance along Bute Place.
- 2.1.4 The proposed location for the Arena and Hotel sits between Cardiff County Hall to the east, Hemingway Road to the south and residences within Halliard Court and Lloyd George Avenue to the north and west. This area of the Site is mainly a surface car park for Cardiff County Hall and also includes the southern extent of Schooner Way and part of Silurian Park in the northwest corner of the proposed Site.
- 2.1.5 This area of the Site is relatively flat but contains a number of constraints below including the buried West Dock wall which crosses the Site from east to west, a Welsh Water sewer which runs underneath Schooner Way, and an Associated British Ports (ABP) culvert at the eastern boundary of the Site which runs from north to south. The Site is bound by residential properties to the north and west, and both Silurian Park and the existing Cardiff County Hall car park contain a number of mature trees.

2.2 The Surrounding Area

- 2.2.1 The Site is located to the southeast of Cardiff city centre. Most of the land to the north is a mixture of residential areas located within Atlantic Wharf, commercial premises and community facilities. A railway line connecting to Cardiff Central station runs in an east / west direction beyond this.

- 2.2.2 To the west, beyond Lloyd George Avenue, and running in a north / south direction, is a further railway line connecting to Cardiff Bay station. Beyond this, the land is developed with a mixture of residential areas, commercial premises and community facilities.
- 2.2.3 The area further south of the Site, beyond the Wales Millennium Centre and the A4232, contains Mermaid Quay, Roald Dahl Plass, the Pierhead and Senedd buildings, and commercial premises around Pierhead Street. Beyond this lies the Porth Teigr and Cardiff Docks areas of Cardiff Bay which form the waterfront to the Severn Estuary.
- 2.2.4 To the east, beyond Bute East Dock, the A4234 runs in a north / south direction with manufacturing premises located on the eastern side of the carriageway. Further industrial and commercial uses are located in this area.

2.3 Environmental Designations

- 2.3.1 There are no designated sites within the Site boundary. The Severn Estuary, approximately 1.3 kilometres (km) to the southeast of the Site is designated a Ramsar site, Site of Special Scientific Interest (SSSI), Special Area of Conservation (SAC) and a Special Protection Area (SPA). A number of Listed Buildings are located to the southwest of the Site beyond Lloyd George Avenue, along Bute Street.

2.4 The Development Proposals

- 2.4.1 The Proposed Development will comprise a leisure led mixed-use development and include an Arena and Hotel (detailed element) as follows:
- **Arena Quarter:** a 15,000 capacity indoor Arena and a 182 room 3* Hotel to replace the existing Travelodge hotel on Hemingway Road which will be demolished. In addition to the Arena Plaza, accesses and associated public realm and green and blue infrastructure are proposed.
 - **Cultural Quarter:** this will contain a range of leisure and cultural uses, potentially including The Cardiff Story Museum, Wales Millennium Centre (WMC) Academy and Contemporary Art Museum of Wales. This zone will provide a key gateway into the site from Roald Dahl Plass and will respond to and connect with the existing established cultural uses within Cardiff Bay.
 - **Mixed Use Quarter:** this will contain a range of commercial, leisure and residential uses, including the new Red Dragon Centre 2 (RDC2), residential

development, high quality office accommodation and the new Atlantic Square event square at the heart of the masterplan. This zone will allow for the re-provision of key facilities currently within Atlantic Wharf and provide a hub for day and night-time activities at the centre of the Site. The proposed Atlantic Square will provide a large flexible space to facilitate city wide events and attractions for example seasonal markets and a range of entertainment events. The space will also allow for outdoor spill-out from surrounding food and beverage outlets and be a publicly accessible space for people to dwell on non-event days.

- Bute East Dock Quarter: this will comprise a new residential and hotel district located to the south and west of Bute East Dock and provide a landscaped area for future residents. The zone will also potentially include new 4* hotels located adjacent to the Arena to provide an alternative to the proposed 3* Hotel and support the masterplan and Cardiff as an international visitor destination.
- Waterfront Quarter: this will contain a number of leisure, residential and hotel led uses. The zone will respond to its waterfront setting and include a landmark building for the masterplan and a new addition to the Cardiff city skyline.
- Car Parking Quarter: a new multi storey car park (MSCP) will be provided, replacing existing surface level car parking which dominates the current Site and providing car parking to support the proposed Arena and wider masterplan uses. The zone will be located to the east of the main event spaces of the masterplan but provides a direct connection to the future Transport Hub at Pierhead Street.

2.5 Consideration of Alternatives

- 2.5.1 The consideration of realistic alternatives to the Proposed Development helps to evaluate the environmental effects of a project.
- 2.5.2 The consideration of alternatives has reviewed the 'Do Nothing' scenario which assumes that the Proposed Development will not proceed and considers how the Site would evolve should the Site continue with its current use. Whilst this scenario would eliminate potential adverse environmental impacts as a result of the Proposed

Development, the opportunity to redevelop the Site, benefiting the local economy; improving active travel linkages; and biodiversity gains would be lost.

- 2.5.3 Informed by discussions with relevant stakeholders, the design of the proposals has evolved to reflect the findings of the assessments undertaken in order to reduce the potential environmental effects to the lowest practical level and enhance the potential benefits of the scheme.
- 2.5.4 It is concluded that the proposals constitute the most sustainable option for development in the area, whilst minimising negative impacts on the environment.

3 SCOPE AND APPROACH

3.1 Scope of Assessment

3.1.1 The scope of the EIA has been developed through discussions with Cardiff Council and informed by consultation with relevant consultees. The following environmental assessments have been undertaken as part of this EIA:

- Traffic and Transport
- Water Resources
- Ground Conditions
- Biodiversity
- Air Quality
- Noise and Vibration
- Cultural Heritage
- Socio-Economics
- Health
- Townscape and Visual Amenity
- Climate Change
- Materials and Waste
- Wind Microclimate
- Daylight, Sunlight and Overshadowing

3.2 Assessment Approach

3.2.1 For each environmental discipline, the method of assessment differs according to the guidance documents that relate to the discipline. However, the overarching assessment approach is as described below.

Step 1: Establish the Baseline

3.2.2 The baseline conditions refer to the current status of the Site and the surrounding area (which, together, comprise the study area) that relate to the environmental

discipline(s) being assessed. For example, noise surveys were undertaken to ascertain the existing noise levels surrounding the Site.

Step 2: Assess the Effects

- 3.2.3 The standard approach to each assessment is to identify how sensitive the baseline is to change (i.e. impact) as a result of the Proposed Development and to determine the magnitude of that change. The assessment of sensitivity and magnitude of change are then combined to provide an overall level of effect of the impact. Depending upon impact, an effect may be adverse or beneficial.
- 3.2.4 Effects assessed below a certain level are considered to be 'Not Significant' and effects assessed as being above a certain level are identified as being 'Significant'. Where significant adverse effects are recorded, mitigation measures are identified to avoid, reduce or remedy these effects. Where possible, enhancements are recommended for beneficial effects.

Step 3: Identify Mitigation Measures

- 3.2.5 Where possible, potential adverse effects are 'designed out' of the design proposals as far as practicably possible. Any remaining adverse effects are then addressed via mitigation measures intended to avoid, reduce or remedy the potential adverse them. This may include the adoption of best practice working methods and techniques, or specific strategies or action plans.

Step 4: Assess Residual Effects

- 3.2.6 The potential impacts of the proposals are reassessed with the mitigation measures in place and the resulting effect is referred to as the 'residual effect'. It is the purpose of the mitigation measures to have reduced any potential adverse effects to the lowest level possible.

Step 5: Assess Cumulative Effects

- 3.2.7 Cumulative effects have also been considered as part of this assessment. This includes:
- Potential cumulative effects occurring as a result of different impacts of the Proposed Development in combination with each other; and
 - Potential cumulative effects occurring as a result of the Proposed Development in combination with other nearby developments.

3.2.8 The nearby developments considered within the cumulative assessment for this EIA are as follows:

- 16/00660/MJR (The Wharf, Schooner Way, Atlantic Wharf)
- 17/01292/MJR (Land at Suffolk House, Trade Street, Butetown)
- 17/01906/MJR (Custom House, Custom House Street and former York Hotel, City Centre)
- 17/01300/MJR (East Bay Close, Atlantic Wharf)
- 17/02615/MJR (Land on the north and south side of John Street, Callaghan Square, Butetown)
- 18/00735/MJR (Brains Brewery, Crawshay Street, Butetown)
- 18/01280/MJR (Land adjacent to 12 – 14 Drake Walk, Atlantic Wharf)
- 18/01705/MJR (Site of former Marland House and NCP Car Park, Central Square)
- 18/02634/MJR (Plot J, Capital Quarter, Tyndall Street, Atlantic Wharf)
- 19/00632/MJR (Part of land at Schooner Way, Atlantic Wharf)
- 19/01930/MJR (Crawshay Court, Curran Road, Butetown)
- 19/02851/MJR (Site adjacent to St Mary the Virgin Church, Bute Street, Butetown)
- 20/00102/MJR (The Brewery, Crawshay Street, Butetown)
- 20/00204/MJR (1, 2 and 3-7 Percy Street and Penarth Road, Butetown)
- 20/00262/MNR (Part of Canal Park adjacent to Cardiff and Vale College, Dumballs Road, Butetown)
- 20/00384/MJR (Cardiff and Vale College, Dumballs Road, Butetown)
- 21/00783/MJR (Land at Curran Embankment, Butetown)
- 21/01666/MJR (Land at Channel View, Grangetown)

4 ENVIRONMENTAL ASSESSMENT

4.1 Introduction

4.1.1 An overview of each of the environmental assessments is provided below.

4.2 Traffic and Transport

4.2.1 The traffic and transport assessment has considered the likely significant effects of changes in traffic flows during construction and operation on sensitive receptors in relation to:

- severance (separation of people from places or other people or obstruction of pedestrian access to essential facilities)
- Driver Delay (traffic delays to non-development traffic)
- Pedestrian Delay (ability of pedestrians to cross roads due to changes in traffic volume, composition and speed and the level of pedestrian activity, visibility and physical conditions of the Proposed Development)
- Pedestrian Amenity (effect of the Proposed Development on the experience of pedestrian journeys due to changes in traffic flow, composition, and separation from traffic)
- Fear and Intimidation (due to increase in traffic volume and its proximity or lack of protection)
- Accidents and Safety (risk of collisions occurring through the Proposed Development changing the character of existing traffic)

4.2.2 The assessment has shown there will be no significant effects during construction of the Proposed Development on its own, or cumulatively.

4.2.3 There will be significant beneficial effects on perceptions of amenity, fear and intimidation during operation.

4.2.4 The only significant effect on the local highway network which will be experienced is on the approach to the proposed multi-storey car park. This is due to the amalgamation of various surrounding car parks into one location.

4.2.5 The use of this approach for vehicular movements will be reflected within the design of the approach and the surrounding pedestrian environment.

4.2.6 There will be no other significant effects during operation of the Proposed Development either cumulatively or on its own.

4.2.7 Active travel improvements will be incorporated into the Proposed Development including improved cycle parking facilities, sustainable travel enhancement, a new NextBike station, an active travel corridor linking Schooner Way to Lloyd George Avenue and Fford Garthorne, a new bus gate between Schooner Way and the Waterfront Quarter providing a link to Hemingway Road, and general improved public realm permeability.

4.3 Water Resources

4.3.1 The water resources assessment has considered the likely significant effects of the Proposed Development on the water environment relating to changes in the hydrological (surface water) and hydrogeological (ground water) regime, and pollution and degradation in water quality.

4.3.2 A Hydrogeological Conceptual Site Model was developed and potential source-pathway-receptor relations were identified for the Proposed Development in relation to the water environment.

4.3.3 Potential impacts during the construction phase are anticipated to be arise from activities such as soil compaction, soil stripping and vegetation removal, use of machinery on site, earthworks, demolition works, use of cement and concrete and construction of impermeable surfaces and subsurface infrastructure.

4.3.4 Potential impacts during the operational phase are anticipated to be arise from activities such as impermeable surfaces, subsurface infrastructure, alteration of the existing drainage regime, and vehicle movement.

4.3.5 The potential impacts of the Proposed Development on the identified sensitive water resource receptors, with embedded mitigation in place, are considered to be not significant.

4.3.6 A Water Framework Directive (WFD) assessment also identified that the risk of the Proposed Development preventing surface and groundwater bodies from achieving WFD objectives as low.

4.4 Ground Conditions

- 4.4.1 The ground conditions assessment has considered the likely significant effects of the Proposed Development on geology, soil resources, hydrogeology and contamination.
- 4.4.2 A Conceptual Site Model was developed and potential contaminant linkages were identified for the Proposed Development in relation to ground conditions.
- 4.4.3 Sensitive receptors potentially affected by the Proposed Development during construction were identified as demolition / construction workers due to potential for human health hazards and groundwater due to potential for pollution.
- 4.4.4 Sensitive receptors potentially affected by the Proposed Development during operation were identified as Site end users and maintenance workers due to potential sources of contamination present within the Site.
- 4.4.5 The potential impacts of the Proposed Development on the identified sensitive ground condition receptors, with embedded mitigation in place, are considered to be not significant. The embedded mitigation would be implemented via a Construction Environmental Management Plan.

4.5 Biodiversity

- 4.5.1 The biodiversity assessment has considered the likely significant effects of the Proposed Development on habitats and their associated species.
- 4.5.2 A Preliminary Ecological Appraisal has been carried out on the Site and the findings have informed an Ecological Impact Assessment. The survey of baseline conditions identified hardstanding, building, scrub, introduced shrubs, scattered trees, broad leaved woodland and standing water habitats on the Site.
- 4.5.3 The sensitive receptors potentially affected by the Proposed Development were identified as habitats, the Severn Estuary due to its environmental designations, bats, birds, hedgehogs and otters.
- 4.5.4 It has been determined that the Proposed Development will not have a significant effect on the Severn Estuary.
- 4.5.5 The Proposed Development includes ecological enhancement through the removal of invasive plant species, planting of native species and inclusion of ornamental planting, raingardens, installation of bird and bat boxes and a management plan, which will

minimise the long-term impact of the development on the Site and the surrounding area's biodiversity.

- 4.5.6 Overall, it is considered that the Proposed Development will have a positive ecological impact.
- 4.5.7 A Biodiversity Net Gain assessment is being prepared and will be submitted in support of the hybrid planning application. Based on initial assessment, it is anticipated that Biodiversity Net Gain could be achieved for both the Arena Quarter element of the development and the wider masterplan. This is due to the ecological enhancements expected as a result of proposed native planting replacing non-native planting and removal of invasive species, that has been incorporated into the Proposed Development.

4.6 Air Quality

- 4.6.1 The air quality assessment has considered the likely significant effects of the Proposed Development in terms of dust and particulate matter generation during the construction phase, and the impact of emissions from development-generated traffic in the operational phase on sensitive receptor locations within the area around the Proposed Development.
- 4.6.2 The closest sensitive human receptor locations to where construction phase activities will take place were identified for the assessment of dust.
- 4.6.3 For the operational phase assessment, eleven representative existing sensitive receptor locations and nine proposed sensitive receptor locations were considered.
- 4.6.4 During the construction phase, site-specific mitigation (e.g. a best practice Dust Mitigation Plan) would be implemented at the Site. With this in place, the residual effect on receptor locations is considered to be not significant.
- 4.6.5 During the operational phase, as the residual effect is expected to be not significant, mitigation measures are not specifically required, however best practice mitigation measures will be embedded into the design of the scheme, including electric vehicle charging points and an emphasis on active travel provision.

4.7 Noise and Vibration

- 4.7.1 A noise assessment has been carried out for the Proposed Development. Existing noise sensitive receptors were identified through aerial mapping and photography. The process identified the locations of existing sensitive receptors, and suitable locations for the baseline noise monitoring.
- 4.7.2 To establish baseline noise levels an attended noise survey was carried out at locations representative of the existing noise sensitive areas.
- 4.7.3 The activities carried out during the demolition, earthworks and construction phase of the development will have the potential to generate short term increases in noise and vibration levels. The use of plant and machinery associated with the demolition, enabling and construction works, including piling, has the potential to give rise to ground borne vibration.
- 4.7.4 The assessment has concluded that with the implementation of mitigation measures including best working practices, temporary screening and restrictions on working hours, the noise effects of the demolition, earthworks and construction phases, will be slight to moderate in the short-term and at a local level.
- 4.7.5 At the operational phase, it has been concluded that no further mitigation is required to reduce noise from the Arena or Hotel, or associated traffic. A range of mitigation measures have been proposed to be embedded within the design to minimise the potential impact of noise from events within Atlantic Square and of crowd noise related to the Arena events. Mitigation measures are recommended for the proposals which form part of the illustrative masterplan and will be specified at the detailed design stage.
- 4.7.6 Overall, with mitigation measures in place, effects at existing sensitive receptors will be none to moderate in the long and short term.

4.8 Cultural Heritage

- 4.8.1 The cultural heritage assessment has considered the likely significant effects of the Proposed Development on the historic environment during the construction and operational phases.
- 4.8.2 The assessment of the direct impact has been focused on the known and potential remains associated with the former Docks, whilst the assessment of indirect impact

was concentrated on the Listed Buildings contained within the Mount Stuart Square and Pierhead Conservation Areas to the south and southwest.

- 4.8.3 A Historic Environment Desk-Based Assessment (HEDBA) was carried out to inform the assessment. 148 previously recorded sites of archaeological interest were identified within a 300m study area, including two Conservation Areas and 59 Listed Buildings. Seven of these sites lie within the Proposed Development Site. The assessment also identified 13 new sites of archaeological interest within the Proposed Development Site.
- 4.8.4 When assessing the direct impact of the Proposed Development on 18 identified post-medieval dock sites within the Site, it has been determined that where possible, any ground works, foundations and piling should be placed to avoid known assets.
- 4.8.5 The similarity in character between the Proposed Development and the current Site use means that the change to the settings of the two Conservation Areas and 33 Listed Buildings is negligible.

4.9 Socio-Economics

- 4.9.1 The socio-economics assessment has considered the likely direct and indirect significant effects of the Proposed Development on employment, housing, social infrastructure, and community cohesion.
- 4.9.2 Sensitive receptors were identified on the basis of baseline conditions data and include people seeking employment, existing and future businesses / public sector / third sector organisations on-site and in the surrounding area, existing and future residents, visitors and people seeking residential accommodation.
- 4.9.3 The Proposed Development will provide a number of socio-economic benefits to Butetown, Cardiff and the Cardiff Capital Region. The assessment concluded that effort should be taken to maximise these benefits for the existing local community. No significant adverse socio-economic effects have been identified.

4.10 Health

- 4.10.1 The health assessment has considered the likely adverse and beneficial significant health and wellbeing effects associated with changes to health determinants resulting from the Proposed Development.

- 4.10.2 The assessment has considered groups of people who will potentially be affected by the Proposed Development including construction workers, residents living in close proximity to the Site, residents of the new housing provision, people working in close proximity to the Site, people working in the new leisure, retail, food and beverage, and entertainment spaces, and vulnerable people i.e. older people, children, young people, people with ill health, people with disabilities etc.
- 4.10.3 During construction, the loss of the southern part of Silurian Park is considered to decrease access to open space and nature which is considered to result in a moderate adverse significant health effect. The provision of construction jobs will contribute to increased income and employment and will result in a moderate beneficial significant health effect.
- 4.10.4 During operation, the provision of housing is considered to improve the quality and design of housing in the study area and will result in a moderate beneficial significant health effect. The provision of new leisure, retail, food, and beverage spaces will improve access to social infrastructure and result in a moderate beneficial significant health effect. The provision of a range of new open spaces and public realm will improve access to open space and nature and result in a major beneficial significant health effect. The creation of jobs will contribute to increased income and employment and will result in a major beneficial significant health effect.

4.11 Townscape and Visual Amenity

- 4.11.1 The Townscape and Visual Impact Assessment (TVIA) reports the likely significant effects of the Proposed Development upon the townscape of the Site and its wider context and upon the visual amenity of identified receptors. The TVIA outlines the scale and nature of changes upon the character and fabric of the townscape and as observed within views looking towards the Site. It considers the likely significant effects that would be generated during construction and operation of both the initial development comprising the Arena, Hotel and Plaza, as well as the subsequent phased development proposed across the remainder of the Site.
- 4.11.2 An initial study area of up to circa 10km was considered, and refined following site appraisal and desk-based research. Although some opportunities for very long-distance views were possible from select locations on higher surrounding ground, due to the extensive built context of the Site and the relatively unvarying landform upon

which Cardiff is situated, it was considered that significant effects were unlikely to arise beyond a 2-3km radius.

4.11.3 The Site and the majority of the Study Area has been identified as sitting within National Landscape Character Area 35 (NLCA 'Cardiff, Barry and Newport') at a national level of analysis, and within the 'Cardiff East' Aspect Area as defined at a local scale within the LANDMAP database. There are a number of other Aspect Areas within the Study Area, identified and described within the report.

4.11.4 The landscape assessment concluded that no significant effects (direct or indirect) would arise upon any of the Character Areas identified during construction or completion of the Arena, Hotel and Plaza, nor during construction of the outline proposals. There would however be significant effects upon the Site and its immediate setting during construction across Phases 1 to 5, resulting in effects of up to Moderate to Substantial Adverse. On completion of the Proposed Development and implementation of the landscaping scheme the level of predicted effects upon the Site and its setting would no longer be significant, being of a Moderate Beneficial level within the Site and Slight Adverse on the Site's immediate setting.

4.11.5 Significant effects upon views are confined to receptors within short (and typically immediate distance) of the Site. During the construction and completion stages of the Arena, Hotel and Plaza, and subsequent construction of the Proposed Development across the remainder of the Site, significant effects will be experienced by:

- Public right of way users along a short section of the route of the Wales Coast Path where this passes through the Site;
- Residents bordering / overlooking the Site along Lloyd George Avenue and around Bute Dock East, including the DYZYN apartment blocks;
- Visitors and recreational users around Cardiff Bay, particularly at Roald Dahl Plass;
- Visitors and recreational users around Bute East Dock;
- Recreational users of Silurian Park; and
- Road users passing the Site or approaching at short distance, including Hemingway Road and Schooner Way.

4.11.6 On completion of the scheme, significant residual effects upon long term views would be confined to residents bordering / overlooking the Site along Lloyd George Avenue and around Bute East Dock, including the DYZYN apartment blocks and visitors and recreational users around Bute East Dock. These would typically result from the proximity of existing residential outlooks at short distance towards either the arena or the high-rise blocks within the Bute East Dock or Waterfront Quarters, on changes to views from around the Bute East Dock looking towards Proposed Development in these Quarters.

4.12 Climate Change

4.12.1 The climate change assessment has considered the likely significant effects of the Proposed Development in terms of climate change and risk mitigation in the context of the Site, surrounding area and the wider environment, recognising that climate change is a global issue.

4.12.2 The assessment has considered the potential effects of the Proposed Development i.e. greenhouse gas (GHG) emissions on the climate and reviewed the resilience of the Proposed Development to the potential effects arising from projected changes in future climate.

4.12.3 The assessment has identified that the estimated emissions for the Proposed Development will be below the baseline emissions for the Arena Quarter and the Atlantic Wharf, Butetown Masterplan, representing a minor positive beneficial effect. The emissions saving achieved over the anticipated lifetime of the development would be reduced when taking into account the decarbonisation of the national grid. The Joint Applicant is considering measures that exceed the minimum standards required by Building Regulations as well as meeting the Future Buildings Standard.

4.12.4 These results should not be interpreted as the Proposed Development having no impact on climate change through greenhouse gas emissions. It signifies that the Proposed Development includes measures that will improve the overall impact above a development of the same size, with comparable facilities, constructed to Building Regulations.

4.12.5 When considering the susceptibility and vulnerability of the Proposed Development to a future climate baseline, sensitive receptors have been identified as building structure, species and habitats and site workers.

4.12.6 The overall significance of future climate change on the Proposed Development is deemed to be not significant. This is based on the assumption that the Proposed Development would meet the minimum standards required by Building Regulations in place at the time of construction and will implement mitigation measures to reduce GHG emissions and build in resilience to future changes in climate.

4.12.7 It will not be possible to eliminate every risk associated with climate change but through intelligent design, preparation and responsible construction, these risks will be minimised.

4.13 Materials and Waste

4.13.1 The assessment of recoverable materials and waste has considered the likely significant effects of the Proposed Development associated with the demolition, construction and operational phases.

4.13.2 In line with the waste hierarchy, it is expected that the vast majority of material from the demolition of the buildings will be recycled or recovered for another purpose. The impact on local recycling, recovery for reclamation, and inert landfill outlets for these waste streams is considered to be of minor adverse significance. Overall, the demolition of the buildings will not cause significant impacts on the environment.

4.13.3 During the construction phase the implementation of a Site Waste Management Plan is expected to mitigate the potential for adverse environment affects. The need to dispose of waste off-site is considered to be a negligible during this phase of development, and therefore would not constitute a significant impact on the environment.

4.13.4 For the Operational Phase, the assessment has concluded there will be an increase in commercial waste above the baseline situation, but this will be a small increase in terms of the waste totals that are currently managed within the Cardiff area. With mitigation, the overall significance of effect is expected to be negligible to minor adverse.

4.14 Wind Microclimate

4.14.1 An environmental wind desk study assessment has been undertaken to assess wind microclimate conditions within and around the Proposed Development.

- 4.14.2 The wind climate in Cardiff has been reviewed using long-term wind records from the area and previous knowledge of the wind climate in the region.
- 4.14.3 The acceptability of windiness is subjective and depends on a number of factors, most notably the activities to be performed in the area being assessed.
- 4.14.4 The assessment found that the arena is taller than the building surroundings immediately to the west and southwest and will deflect the upper level winds from these directions to ground level. These wind components will be accelerated within the passage between the arena and plot M of the illustrative masterplan where upper 'Strolling' wind conditions are anticipated. Wind mitigation measures consisting of landscaping or porous screens or art are options available to be included within this area to improve the local wind levels to 'Standing' or lower 'Strolling' levels, as required for queueing or mild walking activities.
- 4.14.5 Some secondary northeast winds were found to marginally effect eastern entrances on the south-east corner of the Arena and the main entrance to the Hotel. Wind mitigation measures consisting of local side screens or recessing of entrances are options available to be included to improve the local wind levels to 'Standing' or better.
- 4.14.6 Windiness levels in other areas around the Arena and Hotel are expected to remain suitable for intended pedestrian activities and no additional mitigation measures have been recommended around these plots.
- 4.14.7 Windiness levels around the illustrative masterplan plots which form the Waterfront Quarter, the Bute East Dock Quarter, the Car Parking Quarter, the Cultural Quarter and Mixed Use Quarter are generally expected to remain suitable for general public access. Additional wind mitigation measures such as additional landscaping canopies or other external measures may be required within some of the most exposed areas around the illustrative plots (particularly the Waterfront Quarter and the Bute East Dock Quarter).

4.15 Daylight, Sunlight and Overshadowing

- 4.15.1 The assessment has considered the likely significant effects of the Proposed Development in terms of daylight, sunlight and overshadowing.

4.15.2 The assessment has considered the potential impacts in relation to the operational phase of the Proposed Development, as follows:

- impact on daylight access of the existing residential properties due to physical obstruction;
- impact on daylight access of the residential blocks of the Proposed Development itself;
- solar access (external overshadowing) of the existing outdoor amenity spaces that can be affected by the Proposed Development; and
- solar access (external overshadowing) of the proposed outdoor amenity spaces within the Proposed Development.

4.15.3 The impact of the Proposed Development on the majority of existing properties is anticipated to be negligible, however some potentially significant adverse environmental impacts have been identified for some areas of the properties on Lloyd George Avenue, including the Schooner Way and Hemingway Road Façades, and the Galleon Way properties. At Lloyd George Avenue, Schooner Way Façade, the impacts of the Arena development are considered to be minor / moderate, however this is limited to two kitchens out of ninety-six rooms assessed.

4.15.4 In relation to the illustrative masterplan, properties on the Hemingway Road façade and the Galleon Way properties, daylight levels will be adversely affected in the range of minor / moderate to major. Mitigation measures may be considered at the detailed design stage for the masterplan and further assessment will inform mitigation measures.

4.15.5 No adverse environmental impacts have been identified for any of the existing outdoor spaces.

4.15.6 For the residential buildings proposed as part of the illustrative masterplan, some areas of non-compliance have been identified. At the detailed design stage, design measures will be considered that can mitigate these issues. This could include the size of windows, changes to room layout, and where necessary, more significant measures such as changes to massing and building usage.

4.15.7 All proposed external amenity spaces were assessed to be in compliance with the guidelines.

5 RESIDUAL AND CUMULATIVE EFFECTS

5.1 Residual Effects

- 5.1.1 Each assessment has identified the potential environmental effects of the scheme, and recommended mitigation measures that could reduce or avoid these effects. With these measures in place, the remaining significant effects are summarised within Table 5.1.

Table 5.1: Summary of Residual Effects	
Technical Chapter	Significant Residual Effects?
Traffic and Transport	Yes (beneficial)
Water Resources	No
Ground Conditions	No
Biodiversity	Yes (beneficial)
Air Quality	No
Noise and Vibration	Yes (temporary adverse)
Cultural Heritage	No
Socio-economics	Yes (beneficial)
Health	Yes (beneficial and adverse)
Townscape and Visual Amenity	Yes (beneficial and adverse)
Climate Change	Yes (beneficial and adverse)
Materials and Waste	No
Wind Microclimate	No
Daylight, Sunlight and Overshadowing	Yes (adverse)

5.2 Cumulative Effects

- 5.2.1 It is not considered that there will be any significant effects of the Proposed Development in-combination with other developments in the area.
- 5.2.2 In addition, the Proposed Development is not anticipated to have any cumulative effects as a result of the different impacts occurring in combination with each other.
- 5.2.3 The cumulative effects of the Proposed Development are considered to have positive ecological impacts.

6 SUMMARY

- 6.1.1 The Joint Applicant is seeking planning permission for a leisure led mixed used development at Atlantic Wharf, Cardiff.
- 6.1.2 An EIA has been carried out to assess the potential environmental impacts of the Proposed Development on the Site and its surroundings. The potential impacts have been considered as part of detailed technical assessments.
- 6.1.3 As far as possible, any potential significant adverse environmental effects have been designed out of the scheme through the iterative masterplanning and EIA process, and appropriate measures have been incorporated into the proposals to mitigate any impacts that cannot be adequately addressed through the design.
- 6.1.4 In conclusion, the only significant adverse effects associated with the Proposed Development are in relation to aspects of Noise and Vibration, Townscape and Visual Amenity, Daylight, Sunlight and Overshadowing, Climate Change and Health.
- 6.1.5 During the demolition and construction phases of the Proposed Development, the Noise and Vibration assessment has identified the potential for up to moderate adverse effects on sensitive receptors. This effect will be temporary over a short-term and mitigation measures will be implemented to reduced potential effects as much as possible.
- 6.1.6 On completion of the Proposed Development, significant residual effects upon long term views would be confined to residents bordering / overlooking the Site along Lloyd George Avenue and around Bute East Dock, including the DYZYN apartment blocks and visitors and recreational users around Bute East Dock. These would typically result from the proximity of existing residential outlooks at short distance towards either the arena or the high-rise blocks within the Bute East Dock or Waterfront Quarters, on changes to views from around the Bute East Dock looking towards Proposed Development in these Quarters.
- 6.1.7 Notwithstanding the visual impact on receptors arising from what is necessarily a large development, the environmental effects of the project have been addressed through the design and associated mitigation.
- 6.1.8 Significant residual effects on existing properties have been identified for in relation to daylight, however the impacts of the Arena development are limited to two

properties; and in relation to the illustrative masterplan, where daylight levels will be adversely affected, this will be further considered at the detailed design stage to inform appropriate mitigation measures.

- 6.1.9 When assessing decommissioning and construction phase emissions of the Proposed Development, the Climate Change assessment has determined a moderate adverse effect. The implementation of further mitigation measures will assist in limiting this effect where possible.
- 6.1.10 The Health assessment identified that during the construction phase, the Proposed Development would have a moderate adverse residual effect due to loss of the southern part of Silurian Park, which is considered to worsen access to open space and nature.
- 6.1.11 The Proposed Development will result in residual beneficial effects in relation to Health and Biodiversity, with the provision of housing, social infrastructure, improved access to open space and nature, improved accessibility in terms of public transport services, and the generation of jobs along with ecological enhancement.
- 6.1.12 The Proposed Development will also result in residual beneficial effects in relation to Traffic and Transport due to the potential for the design of the Site and the routes within it to affect perceptions of amenity, fear and intimidation by creating an attractive and secure environment for pedestrians and cyclists.
- 6.1.13 There are also predicted to be moderate beneficial effects in relation to socio-economics due to the employment opportunities presented to those seeking employment during the construction and operational phases of the Proposed Development. The Socio-economics assessment has also identified a major beneficial effect of the Proposed Development on community cohesion during the operational phase on existing residents and future visitors.
- 6.1.14 Taking the ES as a whole, which covers all relevant aspects of the Proposed Development, the scheme would not have an unacceptable impact on the local or wider environment.

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