

Leckwith Quays Leckwith Road, Cardiff

Environmental Statement Addendum

Volume 1: Written Statement

December 2022



CARNEYSWEENEY
PLANNING

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1 INTRODUCTION

Introduction

- 1.1 This Environmental Statement Addendum (ESA) has been prepared on behalf of Mr Worthing in support of the submitted hybrid planning application for the residential development for up to 250 dwellings (submitted in OUTLINE), associated highway and bridge improvement/realignment works (submitted in FULL). Development involves the demolition of all buildings on site and of the existing B4267 Leckwith Road Bridge.
- 1.2 The application, which was accompanied by an Environmental Statement (ES), was submitted to both Vale of Glamorgan Council and Cardiff Council on 7th October 2020. The application was registered by Vale of Glamorgan Council under the reference number 20/01218/HYB and by Cardiff Council under the reference number 20/02081/MJR.
- 1.3 This Addendum has been prepared in response to the consultation comments that have been received since the planning application was submitted in 2020 and to reflect the additional information and assessments that have been undertaken during this time.
- 1.4 In preparing the ESA, regard has been given to the Town and Country Planning (Environmental Impact Assessment) (Wales) Regulations 2017.
- 1.5 This Addendum should be read alongside the October 2020 ES and associated Figures and Appendices.

Issues Addressed in the Addendum

Parameter Plans

- Proposed Land Use Plan– No changes have been made.
- Movement Hierarchy Plan – the key routes have been revised to reflect the new internal layout.
- Building Heights Plan – the middle block of Area 03 has been increased in height by 1m (from 27m to 28m) to accommodate undercroft parking within the revised design. N/B the building height does not extend the maximum parameter of the block behind which stands at 31m.

Amended Scheme

- The layout of Block A has been altered slightly to bring the edge inside the redline.
- Strengthening/widening of the 'green fingers for ecological benefit. Some blocks on the southern plateau have been shifted to accommodate this.
- Reconfiguration of blocks along the riverside of the southern plateau to create sufficient acoustic shadows where outdoor amenity space can be situated.
- Area 03 (Block Es) has revised road, building and parking layout to accommodate the above acoustic and ecological requirements, as well as improve efficiency.

- Drainage basins, swales and rain gardens have been amended in association to the changes made to the site layout and landscaping scheme.
- Very minor changes have also been made to a number of the engineering drawings and are associated with refinement as a result of the flooding model, culvert design and levels.

Ecology

1.6 Additional survey work has been undertaken in respect of otters and bats.

Landscape and Visual

1.7 Landscaping scheme has been refined and strengthened incorporating all necessary ecological mitigation requirements. Further details in terms of compensatory mitigation for the loss of trees caused by the development proposals in conjunction with the revised landscape strategy has also been included.

1.8 Additional viewpoints and visualisations have been provided, as requested by the Council.

Flood Risk and Drainage

1.9 Extensive additional flood modelling work has been undertaken in accordance with NRW requirements. The proposed site levels and culverts have been refined in accordance with the outcome of the flood modelling process. A revised Hydraulic Modelling Report (April 2022) and revised Flood Consequences Assessment (November 2022) have been prepared in support of the development proposals.

1.10 The Drainage Strategy (August 2022) has been updated in support of the amended masterplan proposals.

Noise

1.11 In response to the Council's Regulatory Services teams' comments to the application proposals, the of development blocks located along the riverside of the southern plateau have been re-configured to create sufficient acoustic shadows where outdoor amenity space can be situated. The noise maps associated with the Noise Impact Assessment undertaken for the site have been updated accordingly. It is no longer proposed to include a noise barrier within the scheme.

Structure of the ES Addendum

- 1.12 The structure of the ES Addendum (December 2022) reflects the submitted ES (October 2020):
- Volume 1 – Main text (this document), providing a description of the scheme and results of the assessments subdivided by topic where additional information or clarification has been requested. A summary table of environmental effects is also included for each ESA chapter (where relevant).
 - Volume 2 – Figures and Appendices containing technical data to support the text where there are amended or additional documents.
 - Non-Technical Summary – providing a brief description of the scheme and a summary (written in layman's terms) of any significant issues and impacts likely to arise, along with

proposals for mitigation measures. For clarity, the entire text of the non-technical summary has been reproduced and updated where necessary.

- 1.13 The document is divided into the following chapters and has been written by the companies listed. Clarification of additional information provided in the ES Addendum by chapter is provided below.

Table 1.1 Summary of Key Changes to ES by Chapter

Chapter	Company Name	Summary of Key Changes
Chapter 1: Introduction	CarneySweeney	Review the requirement for any changes.
Chapter 2: Proposals	CarneySweeney	Updated to reflect the new parameter plans and concept masterplan.
Chapter 3: Planning Policy	CarneySweeney	Updated to reflect newly published National policy.
Chapter 4 - Highways	Aecom	Reviewed and only minor changes required to take into account consultation response received to the application proposals.
Chapter 5: Ecology	David Clements Ecology	Updated to reflect the additional ecological survey work that has been undertaken and changes to the site layout.
Chapter 6: Landscape and Visual Character	RPS	Updated to reflect the updated landscape strategy and site layout.
Chapter 7: Flooding and Hydrology	WSP	Updated to reflect the additional flood mitigation modelling and analysis that has been completed since the original ES assessment was prepared.
Chapter 8: Ground Conditions	WSP	Reviewed but no changes required.
Chapter 9: Archaeology	GGAT	Reviewed but no changes required.
Chapter 10: Noise and Vibration	Mach Acoustics	Updated to reflect the changes to the site layout and building massing that have taken place since the original ES assessment was prepared.
Chapter 11: Air Quality	WSP	Reviewed but no changes required.

2 SITE DESCRIPTION & DEVELOPMENT PROPOSAL

Site Description

- 2.1 The site description remains unchanged from the October 2020 ES.

The Development Proposals

- 2.2 The description of the development proposals remains unchanged from the October 2020 ES.
- 2.3 Paragraphs 2.2.4-2.2.5 refer to a series of parameter plans and concept masterplan which illustrate the proposed development relating to land use, building heights, movement and access and proposed site layout. As already stated, the parameter plans and concept masterplan have been amended to take into account the changes to the scheme, as outlined in Chapter 1 of this ES Addendum. The amended Parameter Plans are included as **Figures 2.6, 2.7 and 2.8**. The amended Concept Masterplan is included as **Figure 2.9**.

Aims and Objectives of the Development Proposal

- 2.4 No changes have been made to this section of the October 2020 ES.

Alternatives

- 2.5 No changes have been made to this section of the October 2020 ES.

3 PLANNING POLICY CONTEXT

Introduction

- 3.1 On the 24th February 2021, the Welsh Government (WG) published the 11th Edition of Planning Policy Wales (PPW11). Alongside this, the National Development Framework 'Future Wales – the National Plan 2040' (Future Wales) was also published. This ES Addendum therefore reflects the updated National Policy position in respect of the development proposals since the October 2020 ES was written.
- 3.2 The October 2020 ES also included reference to Technical Advice Note 1 (TAN1): Joint Housing Land Availability Studies (2015) which has now been revoked. Paragraphs 3.2.18-3.2.23 of the October 2020 ES should therefore be disregarded.
- 3.3 No changes have been made to the local planning policy context and as such, all of the Vale of Glamorgan Local Development Plan policies and the Cardiff Council Local Development Plan policies remain relevant.

National Legislation and Policy

- 3.4 Due to the publication of Future Wales and PPW11, paragraphs 3.2.2 to 3.2.17 of the October 2020 ES have been superseded and the updated text set out below should be read in its place. It is however noted that whilst Welsh Government has strengthened its commitment to meeting the challenges of climate change through the revision to PPW and the introduction of Future Wales, the underlying policy messages and content of the National Policy set out in the October 2020 ES remains largely unchanged.

Well-being and Future Generations Act 2015

- 3.5 No changes have been made to this section of the October 2020 ES.

Future Wales: The National Plan 2040

- 3.6 Future Wales is the new national development framework which sits alongside PPW11 and sets the direction for strategic and local development plans for the 2020-2040 period. It replaces the previous Wales Spatial Plan as the first National Spatial Plan which forms part of the statutory development plan. Future Wales sets the direction for investment in infrastructure and strategic development across Wales. It makes clear the importance of planning new infrastructure and development in such a way that they are complementary rather than competing priorities, ensuring opportunities are maximised and multiple benefits are achieved. Key priorities include sustaining and developing a vibrant economy; achieving decarbonisation and climate-resilience; developing strong ecosystems; and improving the health and well-being of communities.
- 3.7 Future Wales has been prepared in the context of Wales' three-tiered development plan system and positioned as the highest tier of development plan. It is of material consideration in plan making and decision making. The strategy seeks to address key national priorities through the planning system, by providing a framework which will in turn direct strategic and local development planning.

Being focussed on solutions to issues and challenges at a national scale, it therefore does not allocate development to specific locations nor does it direct specific land uses.

- 3.8 Instead, Future Wales provides strategic direction for all scales of planning and sets out policies and key issues to be taken forward at the regional scale by Strategic Development Plans and at local authority level by Local Development Plans. Strategic and Local Development Plans are required to be in conformity with Future Wales and must be kept up to date to ensure they and Future Wales work together effectively.
- 3.9 A number of challenges and opportunities are identified for Wales nationally, challenges including climate change and Covid-19 and opportunities including progress towards a low carbon economy, renewable energy generation and abundance of natural resources. A changing society, the need for good quality housing, prosperity and increasing resilience in the economy as well as improved connectivity are also identified as drivers for the next 20 years.
- 3.10 Future Wales' outcomes are overarching ambitions based on the national planning principles and national sustainable placemaking outcomes set out in PPW11. The aim of the spatial strategy and regional ambitions contained within Future Wales is to achieve these outcomes. These outcomes are inter-related and inter-dependent and will improve places and well-being across Wales.
- 3.11 There are 11 outcomes set out in Future Wales which collectively are a statement of where Wales 'wants to be' in 20 years. These 11 outcomes envisage a Wales where people live:
- and work in connected, inclusive and healthy places;
 - in vibrant rural places with access to homes, jobs and services;
 - in distinctive regions that tackle health and socio-economic inequality through sustainable growth;
 - in places with a thriving Welsh Language;
 - and work in towns and cities which are a focus and springboard for sustainable growth;
 - in places where prosperity, innovation and culture are promoted;
 - in places where travel is sustainable;
 - in places with world-class digital infrastructure;
 - in places that sustainably manage their natural resources and reduce pollution;
 - in places with biodiverse, resilient and connected ecosystems; and
 - in places which are decarbonised and climate-resilient.
- 3.12 The Future Wales spatial strategy is made up of 36 policies and provides a framework to achieve the outcomes outlined above. This includes identifying and connecting key national and regional centres, providing a basis for long term infrastructure investment, identifying priorities for the planning system and providing a framework for the management of natural resources.
- 3.13 Initial policies in the spatial strategy direct strategic areas for growth, outlining both Regional Growth Areas and National Growth Areas, with National Growth Areas being economically distinct. The National Growth Areas includes, Cardiff, Newport and the Valleys which also appears to include the Vale of Glamorgan, within which the development proposal is located alongside Cardiff. Strategic placemaking principles are also introduced to shape urban growth and regeneration in

these areas and range from ensuring a mix of uses and housing types to improving walkability and permeability as well as increasing population density and promoting a plot-based approach to development which incorporates green infrastructure.

3.14 Policies which seek to ensure vibrant rural communities and a thriving rural economy are also central to the strategy in recognition that large parts of Wales are rural in character with 40% of the population living in settlements with fewer than 10,000 people. These policies focus on supporting development of innovative and emerging technology businesses and sectors to help rural areas unlock their full potential, broadening the economic base, and creating higher paid jobs. A number of policies focus on sustainable management of the natural environment, including commitment to development of a National Forest and management of flood risk as well as commitment to enhance biodiversity, support resilient ecosystems and ensure safeguarded provision of green infrastructure.

3.15 In parallel with the aspirations of PPW11, Future Wales' spatial strategy aims to support Welsh Government to address the Climate Emergency declared in 2019 through its policies and ambitions.

3.16 Future Wales policies that are of particular relevance to the development proposals include:

Policy 2 – Shaping Urban Growth and Regeneration – Strategic Placemaking

3.17 It states that the growth and regeneration of towns and cities should positively contribute towards building sustainable places that support active and healthy lives, with urban neighbourhoods that are compact and walkable, organised around mixed-use centres and public transport, and integrated with green infrastructure. As such, Urban growth and regeneration should be based on the following strategic placemaking principles:

- Creating a rich mix of uses;
- Providing a variety of housing types and tenures;
- Building places at a walkable scale, with homes, local facilities and public transport within walking distance of each other;
- Increasing population density, with development built at urban densities that can support public transport and local facilities;
- Establishing a permeable network of streets, with a hierarchy that informs the nature of development;
- Promoting a plot-based approach to development, which provides opportunities for the development of small plots, including for custom and self-builders; and

3.18 Integrating green infrastructure, informed by the planning authority's Green Infrastructure Assessment.

3.19 Policy 3 – Supporting Urban Growth and Regeneration

3.20 The policy outlines that the Welsh Government will play an active and enabling role to support the delivery of urban growth and regeneration to ensure that growth and regeneration aspirations can be met.

Policy 7 – Delivering Homes including Affordable Homes

- 3.21 The delivery of housing and affordable homes at levels which meet local and regional needs is also of focus in the spatial strategy. Future Wales specifically outlines that the planning system must facilitate the provision of additional market and affordable housing and recognises that there is a complex picture of housing need and provision with the opportunities people have varying significantly depending on income and where they live in Wales.

Policy 8 – Flooding

- 3.22 The policy outlines that flood risk management that enables and supports sustainable strategic growth and regeneration in National and Regional Growth Areas will be supported.

Policy 9 – Resilient Ecological Networks and Green Infrastructure

- 3.23 The policy outlines that the strategic focus of Future Wales on urban growth requires an increased emphasis on biodiversity enhancement (net benefit) in order to ensure that growth is sustainable. In particular, the policy recognises the need to maximise the use of green infrastructure and nature-based solutions as part of shaping urban growth, supporting rural communities and responding to the twin challenges of addressing the climate emergency and reversing biodiversity decline.

Planning Policy Wales Edition 11 (February 2021)

- 3.24 PPW11 primarily represents a refresh of PPW10, in particular, the refresh brings PPW in line with the Future Wales National Plan and other policy changes since PPW10 was published in December 2018, including Welsh Government’s ‘Prosperity for All: A Low Carbon Wales and the National Infrastructure Commission for Wales ‘Annual Report 2020.
- 3.25 With this revision, therefore, comes an added focus on climate change and responding to the Climate Emergency by placing greater emphasis on principles of creating and sustaining communities, reducing car dependency and making best use of resources.
- 3.26 Placemaking was previously established as the core of PPW10 under key placemaking themes. PPW11 retains these placemaking themes and additionally sees the introduction of the Placemaking Wales Partnership Charter which has evolved to support the development of high-quality places across Wales. The Charter includes six placemaking principles:
- People and community – proposals are shaped to meet needs of the local community, as well as to create, integrate, protect and enhance a sense of community, promoting equality.
 - Location – places grow and develop in a way that uses land efficiently, supports and enhances existing places and is well connected.
 - Movement – walking, cycling and public transport are prioritised to provide a choice of transport modes and avoid dependence on private vehicles.
 - Mix of uses – places have a range of purposes which provide opportunities for community development, local business growth and access to jobs, services and facilities.
 - Public realm – streets and public spaces are well-defined, safe and inclusive, designed to be robust and adaptable and well connected to existing places.
 - Identity – the positive, distinctive qualities of existing places are valued and respected.
- 3.27 A new section on ‘The Covid-19 Pandemic and Building Better Places’ is introduced at paragraph 2.21, recognising the need for positive recovery and the pivotal role that planning has for shaping

society for the future. Building on this principle, paragraph 3.30 refers to the Welsh Climate Emergency, noting that ‘the transition to a low carbon economy not only brings opportunities for clean growth and quality jobs, but also has wider benefits of enhanced places to live and work, with clean air and water and improved health outcomes.’

- 3.28 Paragraph 4.1.2 references the development of the new Wales Transport Strategy to set out Welsh Government’s long-term vision for transport for the next 20 years, as well as outlining five-year priorities. Further to this, paragraph 4.1.39 includes the added requirement for new public transport infrastructure and services to be in place early on in the development process. This is a reflection of wider national ambitions to reduce reliance on private vehicle movement.

Local Planning Policy

- 3.29 No changes have been made to this section of the October 2020 ES.

4 HIGHWAYS AND TRANSPORTATION

Introduction

- 4.1 This Environmental Statement Addendum has been prepared in relation to Chapter 4 'Highways and Transportation' prepared as part of the Environmental Statement (ES), which was submitted in October 2020.
- 4.2 A comprehensive Transport Assessment (TA), which is a separate document accompanying the planning application, was submitted in October 2020. The TA examines in detail the transport effects of the Proposed Development on the existing transport system and provides the basis for this assessment; this is included in full, at **Appendix 4.1** of the 2020 ES.
- 4.3 In the preparation of this ES Addendum the TA has been considered in detail and that this formed the basis for informing the preparation of the ES Chapter. This Addendum will consider each section of the transport planning inputs and advise where updates may be required.
- 4.4 It was concluded, through this ES Addendum review, that whilst the TA and ES Chapter for transport were prepared in 2020, the assessments that were carried out are still considered robust. The extensive years of assessment requested by the Highway Authority and the production of a post consent Technical Note (TN) in May 2021, provided more detailed assessments between the TA 2020 and this ES Addendum 2022. The TN fully addressed the queries raised in a detailed manner, and demonstrated a detailed and robust approach, one which is still valid at the time of producing this Addendum.
- 4.5 The findings of the TA and the ES Chapter are not affected by the short time which has passed, and these were further supported by the TN in 2021. The findings of the transport inputs are therefore still considered to be valid.

Assessment Methodology

Planning Policy Context

- 4.6 Following the preparation and completion of the Transport Planning documents, Edition 11 of Planning Policy Wales (PPW) was published in February 2021, superseding PPW Edition 10, which was referenced in the original reports.
- 4.7 Edition 11 of PPW was published in February 2021 and sets out the land use planning policies of the WG. It is supported by a number of Technical Advice Notes (TANs), which provide detailed planning advice on subjects contained within PPW. *TAN 18: Transport* is considered of particular relevance to the Proposed Development and is included in this policy review. An overarching theme within PPW is the commitment of the Welsh Government (WG) to sustainability.
- 4.8 Planning policy in Wales is plan-led, with up-to-date LDPs forming a fundamental part of the system. PPW states that planning applications *"must be determined in accordance with the adopted plan unless material considerations indicate otherwise."*

4.9 PPW outlines the vision for development of a more effective and efficient transport system, the promotion of more sustainable and healthy forms of travel, as well as minimising the need to travel. PPW indicates that this will be achieved through integration:

- *“Within and between different types of transport;*
- *Between transport measures and land use planning;*
- *Between transport measures and policies to protect and improve the environment; and*
- *Between transport measures and policies for education, health, social inclusion and wealth creation.”*

4.10 The WG outlines a support for a transport hierarchy in relation to the accessibility of new development that prioritises walking and cycling in the first instance, followed by public transport, ultra-low emissions vehicles and finally other private motor vehicles.

4.11 Paragraph 4.1.11 states:

“Development proposals must seek to maximise accessibility by walking, cycling and public transport, by prioritising the provision of appropriate on-site infrastructure and, where necessary, mitigating transport impacts through the provision of off-site measures, such as the development of active travel routes, bus priority infrastructure and financial support for public transport services.”

4.12 Paragraph 4.1.40 relates to the provision of facilities for EVs:

“To encourage the use of Ultra Low Emission Vehicles (ULEVs), the planning system should encourage and support the provision of ULEV charging points as part of new development.”

4.13 Paragraph 4.1.49 states that car parking provision has a major influence on both mode choice and development patterns.

4.14 Paragraphs 4.1.55 to 4.1.56 identify the requirements for development proposals to be accompanied by an appropriate level of transport assessment. It directs professionals to the TAN 18 for guidance on the preparation and content of assessments.

Relevant Guidance

4.15 No changes are required to this section.

Study Area

4.16 No changes are required to this section.

Baseline Methodology

4.17 No changes are required to this section.

Consultation

4.18 Since the 2020 ES submissions, further correspondence has been received from both the Vale of Glamorgan (VoG) and the City and County of Cardiff (CCC) containing highways comments in response to the planning application. A formal response to the comments received from both VoG and CCC was prepared and submitted in May 2021, detailing both the comments raised and the applicant response. This response is included in full within **Appendix 4.4** of the ES; this forms an

additional Appendix to the ES as part of this update. For the purpose of clarification, **Appendix 4.1** (TA), **Appendix 4.2** (Travel Plan) and **Appendix 4.3** (Highway Links for Assessment) remain unchanged from the original submission.

Table 4-1: Consultation Responses Relevant to this Chapter

Date	Consultee and Issues Raised	How/ Where Addressed
February 2021	Comments raised in response to Planning Application (Ref. 2020/01218/HYB) by VoG and CCC.	A Technical Note (TN) was prepared by AECOM (May 2021) to address comments received from both VoG and CCC.

Assessment Criteria and Assignment of Significance

4.19 No changes are required to this section.

Limitations of the Assessment

4.20 No changes are required to this section

Baseline Environment

4.21 This section of the ES provides a description of the site location and its existing usage, the local highway network, current safety and traffic conditions, and a review of accessibility to non-car modes of travel. The TA (**Appendix 4.1**) provides a more detailed version of the elements described in this section. A review of the TA has concluded the following:

- Existing Traffic Conditions - Existing traffic conditions were based on traffic survey data collected in 2019. This formed the basis for assessments of link sensitivity and operational traffic impact. Although the surveys carried out are three years old, the surveys were conducted prior to the outbreak of the COVID-19 pandemic, and are therefore likely to show similar or higher levels of traffic than would be recorded in a post-COVID-19 traffic survey. It has been considered, that in this case, the existing traffic conditions presented are considered to still be valid and do not require updating.
- Road Safety - Personal Injury Collision (PIC) data has been obtained from the WG for the five-year period from 1st January 2014 to 31st December 2018. Analysis undertaken at Section 2.5 of the TA (**Appendix 4.1**) did not identify any existing highway safety issues that require more detailed examination or that could be exacerbated by the proposed development. Although the PIC data was collected around two years ago, it is unlikely that a review of the most recent five-year period's worth of data would change the conclusions reached in the original analysis. Therefore, the PIC analysis presented is considered to be valid and does not require updating.

Future Baseline Conditions

4.22 No changes are required to this section.

Mitigation Measures Adopted as Part of the Project

4.23 No changes are required to this section.

Assessment of Construction Effects

4.24 No changes are required to this section.

Assessment of Operational Effects

4.25 The TA (**Appendix 4.1**) sets out the methodology for assessment of the Proposed Development during its operational phase (i.e. once it is complete and occupied). Changes to the proposed Masterplan have not resulted in an increase or decrease in the number of dwellings proposed, therefore assessments of operational effects are still valid. Therefore, no changes are required to this section. The years of assessment include an opening year, which is still attainable, and an assessment of the impact in 2030, at the request of the Highway Authority. The assessments are robust and the findings have been concluded to be valid.

Assessment of Cumulative Effects

4.26 No changes are required to this section.

Summary of Effects and Conclusion

4.27 The conclusions have not changed since the 2020 submission.

5 ECOLOGY AND NATURE CONSERVATION

Introduction

- 5.1 This addendum to Chapter 5 of the 2020 Environmental statement (ES) has been prepared following changes in the masterplan, taking into account comments from NRW, Vale of Glamorgan Council and Cardiff Council. The results of additional bat and otter surveys have been added, as well as further mitigation and enhancement measures. **Appendix 5.4** includes the updated Ecological Assessment and an additional Appendix (**Appendix 5.5**) has been added.

Assessment Methodology

Planning Policy Context

- 5.2 In Section 5.2.2 Planning Policy Wales Edition 10 has been superseded by Planning Policy Wales Edition 11 (Welsh Government, 2021).

Relevant Guidance

- 5.3 There are no changes to Sections 5.2.6, 5.2.7 or 5.2.8.

Study Area

- 5.4 There are no changes to Section 5.2.9.

Baseline Methodology

- 5.5 Additional protected species surveys were carried out following consultation with NRW, Vale of Glamorgan LPA and Cardiff LPA. In Section 5.2.15, the following should be added to the fourth bullet point (Otters): An additional assessment of the suitability of the site habitats for natal use by otter was carried out on 14th September 2020. In Section 5.2.15, the fifth bullet point (Bat surveys) should be replaced by the following: Bat surveys including: building inspections, viaduct inspection and flight surveys (for built structures and trees), and ground & aerial tree surveys to look for any evidence of use by bats and characterise roosts where possible, all of which were undertaken in accordance with BCT good practice guidance (2016) (surveys undertaken on the following dates: 1st July 2019, 2nd July 2019, 3rd July 2019, 29th August 2019, 13th September 2019, 18th September 2019, 25th September 2019, 15th January 2020, 21st August 2020, 8th September 2020, 31st January 2021, 24th August 2021, 15th September 2021).

Consultation

- 5.6 See Table 5.1 below.

Table 5.1: Consultation Responses Relevant to this Chapter

Date	Consultee and Issues Raised	How/ Where Addressed
24th June 2020	NRW: Further surveys required of potential bat roosts within trees	Further surveys have now been carried out and the results added to updated Appendix 5.4 Ecological Assessment v6 (See Section 3.2.14).
24th June 2020	NRW: Additional information on the use of site by otters	Further survey carried out and additional mitigation measures included. See updated Appendix 5.4

		Ecological assessment v6, Sections 3.2.24 & 6.2.
24th June 2020	NRW: Requirement for a HRA	A HRA has been carried out by the Vale of Glamorgan Council.
24th June 2020	NRW: Impact on Cwm Cydfin SSSI	Cwm Cydfin Site of Special Scientific Interest (SSSI) has no formal rights of way through it. Public access to the SSSI is currently, therefore, legally denied and the applicant has no intention of amending that provision.
14th January 2021	Cardiff LPA Ecologist: Small area within site boundary not included within ecological assessment.	This area has now been surveyed. See Appendix 5.4 updated Ecological assessment v6 Plan 2 and Section 3.1.10
14th January 2021	Cardiff LPA Ecologist: Ecological Assessment to reflect current masterplan	The ecological assessment has been updated to reflect masterplan See Appendix 5.4 updated Ecological assessment v6.
14th January 2021	Cardiff LPA Ecologist: Information needed on reptile mitigation	This has been outlined in Appendix 5.4 updated Ecological assessment v6. A reptile mitigation strategy will be agreed prior to development, following the guidelines in Appendix 3.
14th January 2021	Cardiff LPA Ecologist: Information needed on nesting bird mitigation	Seasonal requirements included in Appendix 5.4 updated Ecological assessment v6
14th January 2021	Cardiff LPA: Pollution prevention measures needed for River Ely	A Pollution Prevention Plan will be included within the Construction Environmental Management Plan (CEMP) for the site. (See also Appendix 5.4 updated Ecological assessment v6, Section 6.6.8).
14th January 2021	Cardiff LPA: Need to demonstrate net biodiversity benefit of development	A number of measures to create new habitats within the development have been included in Appendix 5.4 updated Ecological assessment v6, Section 6, including a bat house, bat boxes on buildings and trees, bird boxes on buildings and trees, an artificial kingfisher nest site, an artificial otter holt, reptile hibernacula and artificial invertebrate habitat features, such as bee walls and beetle banks. There is also further information on the creation of habitat corridors and other ways of retaining connectivity between habitats within the site boundary, adjacent woodland and the river. The planting of native trees, shrubs and bankside vegetation is also included.
11th March 2021	Vale of Glamorgan LPA Ecologist: Justification for development and more details on mitigation, compensation & enhancement.	Further details on biodiversity mitigation, compensation and enhancement provided in Appendix 5.4 updated Ecological assessment v6, Section 6.
11th March 2021	Vale of Glamorgan LPA Ecologist: Need to review the impact and scale of the development in greater detail.	Section 5 of Appendix 5.4 updated Ecological assessment v6 has been revised to assess the ecological impact of the current masterplan

		design. proposed for the site. The impact of new residential properties on the adjacent woodland is considered in Section 5.4.
11th March 2021	Vale of Glamorgan LPA Ecologist: Design of SUDS attenuation pond could create habitats for newts.	One wildlife pond now incorporated into the masterplan with the ability to retain water all year round. (Two attenuation basins also included). The pond design will be suitable for breeding amphibians and other wildlife, as described in Appendix 5.4 updated Ecological assessment v6, Section 6.6.1.
11th March 2021	Vale of Glamorgan LPA Ecologist: Compensatory bat roost sites located to the edge of the woodland along with a sympathetically designed low level lighting scheme will be required.	Additional recommendations for appropriate bat mitigation measures are included in Appendix 5.4 updated Ecological assessment v6, Section 6.1, including the requirement for a bat house, retention of dark corridors and bat boxes on buildings and retained trees. Full details will be included in a Bat Conservation Plan.
11th March 2021	Vale of Glamorgan LPA Ecologist: Appropriate mitigation measures required for river habitats and wildlife.	Appendix 5.4 updated Ecological assessment v6, Section 6.6.2 describes the 5m buffer of vegetation maintained between the development and the riverbank, to prevent riparian wildlife from being disturbed. Details on the impact of the drainage and flood-risk plans for the development are found in the Water Framework Directive (WFD) report (February 2021).
11th March 2021	Vale of Glamorgan LPA Ecologist: Mitigation measures required for badger	Further information on this species is detailed in Appendix 5.5 (confidential badger report).
11th March 2021	Vale of Glamorgan LPA Ecologist: Need to ensure that provision for hedgehog, etc included.	Details added to Appendix 5.4 updated Ecological assessment v6, Section 6.5.2.
11th March 2021	Vale of Glamorgan LPA Ecologist: More details on mitigation for nesting birds.	A bird box plan will be produced for the site: further information is included in Appendix 5.4 updated Ecological assessment v6, Section 6.3.2. New compensatory woodland habitat will be planted (See Section 6.6.4)
11th March 2021	Vale of Glamorgan LPA Ecologist: Inclusion of biodiversity enhancement measures.	Biodiversity enhancement measures for the site are described in Appendix 5.4 updated Ecological assessment v6, Section 6.
26th July 2021	NRW: Additional bat surveys of trees required; Further details of mitigation measures for bats	Further surveys have now been carried out and the results added to Appendix 5.4 updated Ecological assessment v6 (Section 3.2.14). Additional recommendations for appropriate mitigation measures are included in Section 6.1 of Appendix 5.4 updated Ecological assessment v6, including the requirement for a bat house.
19th August 2021	Vale of Glamorgan LPA Ecologist: Access to the River Ely needs to be	There will be a fenced buffer of scrub vegetation from at least 5m from the

	limited (to protect otter and kingfisher)	top of the riverbank, apart from at the existing river access point. No new access points to the riverbank will now be created. (See Appendix 5.4 updated Ecological assessment v6, Section 6.2.3).
19th August 2021	Vale of Glamorgan LPA Ecologist: Complete bat surveys and information on conservation measures for bats	Further surveys were carried out, as requested by NRW. No further bat roosts were recorded. (See Appendix 5.4 updated Ecological assessment v6, Section 3.2.16. The bat conservation plan will include a bat house, bat box scheme and bat access points incorporated into 10 of the new buildings. The five wildlife corridors/ 'green fingers' areas marked on the landscape plan will be kept as dark corridors. See Appendix 5.4 updated Ecological assessment v6, Section 6.1.5 for further details.
19th August 2021	Vale of Glamorgan LPA Ecologist: Impact of boundary treatments on badger and nesting birds	It will be necessary to have robust fencing between the domestic gardens and new/ existing woodland areas, with a buffer zone of dense scrub/ understorey vegetation to restrict access into the woodland habitats.
19th August 2021	Vale of Glamorgan LPA Ecologist: The applicant needs to demonstrate that the loss of trees is being compensated for at or beyond the level of 2:1	This has now been addressed in the updated landscape strategy for the site.
19th August 2021	Vale of Glamorgan LPA Ecologist: Can the applicant demonstrate that the for the worst-case scenario envisaged that the SUDS scheme as currently designed could accommodate the spill without it entering the River Ely and thus ultimately to the River Severn SAC?	This has been addressed in the Drainage Strategy for the site.
19th August 2021	Vale of Glamorgan LPA Ecologist: Demonstrate that proposed wildlife corridor is effective	Two out of five wildlife corridors/ 'green fingers' on the new landscape plan are under pylons. Three of the wildlife corridors would be suitable for tree planting. All will be kept as dark corridors. The wildlife corridors/ 'green fingers' as shown on the plan are now more robust and should provide connectivity between the woodland habitats and the river.
19th August 2021	Vale of Glamorgan LPA Ecologist: The provision of a Lighting Strategy showing the location of intended dark corridors and the measures to be taken to ensure the minimum light intrusion into both the corridors and surrounding habitats.	The five wildlife corridors/ 'green fingers' areas marked on the landscape plan will be kept as dark corridors. Lighting strategy will be designed to prevent woodland, riverbank, hedgerows and other habitats from being illuminated, following the latest Bat Conservation Trust guidelines.

13th June 2022	Vale of Glamorgan LPA Ecologist: Methodology for compensatory planting on former road; Achieving 2:1 replacement tree planting/ compensation for loss of woodland; Protecting River Ely from increased access and as dark corridor; site boundaries to allow small mammal passage	An appropriate methodology for regenerating the former road will be produced. The landscape plan now demonstrates how a 2:1 ratio of replacement planting can be achieved with offsite planting also being part of the overall mitigation. See Section 6 of Appendix 5.4 updated Ecological assessment v6, Section 6.1.5 for further details.
8th July 2022	NRW: Details of Conditions required relating to a Bat Conservation Plan, Otter Conservation Plan, Lighting Scheme and Construction Environmental Management Plan	Further details will be provided prior to any development.

Assessment Criteria and Assignment of Significance

5.7 There are no changes to Sections 5.2.17 – 5.2.46.

Limitations of the Assessment

5.8 Section 5.2.50 should be replaced by the following: The tree surveys were constrained by the following factors: extensive ivy and/ or foliage obscuring the view of many trees on site and extensive dense scrub limiting close access to some groups of trees. Ground based and dusk emergence surveys are always constrained by the physical ability to view the tree, therefore only potential features on the visible parts of the tree are recorded and any features present on the upward facing side of branches will not be recorded. Some features were occupied by large numbers of slugs/competitors on the day of the aerial survey therefore internal measurements of the features could not be taken on this occasion.

Baseline Environment

5.9 In section 5.3.1, the DCE (2020) report has been superseded by DCE (2022).

5.10 Section 5.3.20 should now state: the following surveys were undertaken by DCE in 2019-2021. The following additional surveys should be added: Otter survey (to assess potential of site for natal use) – 14th September 2020; ground level tree assessments for bats – 21st August – 8th September 2020; aerial tree surveys for bats – 31st January 2021; dusk emergence bat surveys of trees – 24th August 2021 and 15th September 2021.

5.11 The following should be added to Section 5.3.34: further ground-based tree assessments identified seven trees as having moderate potential to support roosting bats and requiring further survey. Aerial and/ or dusk emergence surveys were carried out on these seven trees; however, no evidence of bats using any of the trees was recorded.

5.12 The following should be added to Section 5.3.36: It is considered unlikely that any natal holts are present on the site, although it is possible that otter occasionally uses the site for foraging and commuting.

Future Baseline Conditions

5.13 There are no changes to Sections 5.3.41-5.3.43.

Mitigation Measures Adopted as Part of the Project

- 5.14 Section 5.4.10 should be replaced by the following: Where woodland areas are to be lost, an equivalent sized area will be replaced. Woodland habitat will be allowed to regenerate wherever possible; otherwise replacement planting will be carried out at a 2:1 ratio, using native broadleaved species of local provenance in keeping with the species assemblage currently found in the woodland. The majority of the replacement planting will be carried out within the site boundary, although a suitable offsite location will also be agreed with the LPA.
- 5.15 Section 5.4.23 should be replaced by the following: To compensate the loss of the pond (Approx. area: 10m²) a wildlife pond will be created on the site of at least the same area, with associated native planting.
- 5.16 Section 5.4.24 should be replaced by the following: The wildlife pond will be subject to an ongoing management plan to provide maximum benefit for amphibians, aquatic invertebrates and other wildlife.
- 5.17 Section 5.4.26 should be replaced by the following: A Bat Conservation Plan will need to be in place, prior to the commencement of any development. A derogation licence will also be required from NRW before any works take place on buildings containing bat roosts. Mitigation measures are likely to include: Demolition of the buildings during the winter months; a toolbox talk and stripping of bat sensitive features by a bat licensed ecologist; New roosting opportunities within the new buildings on the site, both in attic voids and in bat boxes. For more details see **Appendix 5.4** updated Ecological Assessment v6, Section 6.1.5.
- 5.18 Section 5.4.30 should be replaced by the following: A specially designed bat house will be built within the site boundary to compensate for the loss of bat roosts.
- 5.19 The following should be added to Section 5.4.35: The installation of an artificial kingfisher nest site will also be included.
- 5.20 Section 5.4.37 should be replaced by the following: An Otter Conservation Plan will need to be in place, prior to the commencement of any development. For more details see **Appendix 5.4** updated Ecological Assessment v6 Section 6.2.3.
- 5.21 Section 5.4.38 should be replaced by the following: At least one artificial otter holting site will be provided along the riverbank as an enhancement.
- 5.22 The following should be added to Section 5.4.39: A further badger survey will be required within 6 months of the start of any development.
- 5.23 The following should be added to Section 5.4.51: Invertebrate habitat features such as bee walls, artificial bumblebee nests and beetle banks will also be incorporated into the development.

Assessment of Construction Effects

- 5.24 Section 5.5.1 should be amended as follows: Bats: No Tree roosts found within the site boundary during the further surveys, although the possibility of bats roosts being present cannot be ruled out entirely. Therefore, the magnitude of potential bat roosts in trees being lost to the development is reduced to 'Moderate'.

Assessment of Operational Effects

- 5.25 Section 5.6.1 should be amended as follows: Wetland Habitat Creation: Two attenuation basins will be incorporated within the developed site, as well as a wildlife pond (which will be at least 10m² in area), with associated native species planting.
- 5.26 Table 5.9 (Residual effects) should be amended as follows: Pond: As an additional mitigation measure a wildlife pond of at least 10m² in area, will be created with associated native species planting.

Assessment of Cumulative Effects

- 5.27 There are no changes to Section 5.8.

Summary of Effects and Conclusion

- 5.28 There are no changes to Section 5.1

6 LANDSCAPE AND VISUAL

Introduction

- 6.1 The Landscape and Visual Impact Assessment (LVIA) chapter within the submitted Environmental Statement and landscape strategy were prepared by Novell Tullett in November 2019. RPS were instructed to refine and build upon the previously prepared landscape strategy and to produce this addendum to the LVIA. The former chapter and this addendum relate to the likely landscape and visual effects of the proposed development and whilst this addendum does not seek to critique the former chapter it will provide relevant updates to it based upon the current landscape strategy and any guidance or policy updates.

Assessment Methodology

- 6.2 This addendum will follow the same methodology and structure as the former chapter which is a recognised industry standard based upon guidance contained within the Guidelines for Landscape and Visual Impact Assessment (Volume 3) (GLVIA3) 2013.

Planning Policy Context

- 6.3 A summary of current legislation, policy and standards relevant to landscape and visual issues have been considered during this assessment. Where they were summarised in the former chapter they have not been repeated here, only an update provided where relevant.

Table 6.1: European Planning Policy Guidance

Legislation	Relevant Key Provisions
Council of Europe (2000) European Landscape Convention	Remains current and relevant

Table 6.2: National Planning Policy Guidance

Legislation	Relevant Key Provisions
Welsh Government (2018) Planning Policy Wales 10	Replaced with Edition 11 in Feb 2021 <ul style="list-style-type: none"> • Special Landscaped Areas (SLA's) remain non-statutory designations that define local areas of high landscape importance, which may be unique, exceptional, or distinctive to the area • Section 6 Duty (The Environment [Wales] Act 2016) states that development should not cause any significant loss of habitats or populations of species, locally or nationally and must provide a net benefit for biodiversity • Ancient woodland should be afforded protection from development which would result in their loss or deterioration unless there are significant and clearly defined public benefits
Welsh Assembly Government (2009) Technical Advice Note 5 – Nature Conservation and Planning	Remains current and relevant

Welsh Government (2016) Technical Advice Note 12 – Design	Remains current and relevant
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Table 6.3: Local Planning Policy Guidance

Legislation	Relevant Key Provisions
Vale of Glamorgan Local Development Plan (LDP) 2011-2016 (June 2017)	Replacement Local Development Plan (RLDP) 2021 – 2036 currently (2022) being developed but not yet published LDP sets out the framework for future development of the county borough
SP10 – Built and Natural Environment	Remains current and relevant especially conservation areas, locally listed buildings, Special Landscape Areas (SLA’s) and designated sites for nature conservation importance
MG17 – Special Landscape Areas	Remains current and relevant notably within SLA’s development proposals will only be permitted where it is demonstrated they would cause no unacceptable harm to the important landscape character of the area
MG20 – Nationally Protected Sites and Species	Remains current and relevant especially direct and indirect effects on the conservation value of a Site of Special Scientific Interest (SSSI)
MG21 – Sites of Importance for Nature Conservation, Regionally Important Geological and Geomorphological Site and Priority Habitats and Species	Remains current and relevant especially effects on Sites of Importance for Nature Conservation (SINC) or priority habitats and species
MD8 – Historic Environment	Remains current and relevant notably development proposals must preserve or enhance listed buildings, their settings, and any features of significance
MD9 – Promoting Biodiversity	Remains current and relevant notably development proposals are required to conserve and enhance biodiversity interests unless the need for the development outweighs the biodiversity value of the site, or the impacts of the development can be significantly mitigated
Cardiff Local Development Plan 2006-2026 (January 2016)	Cardiff Replacement Local Development Plan 2021 – 2036 currently (2022) being developed but not yet published LDP sets out the framework for future development of the city
KP18 – Natural Resources	Remains current and relevant especially remediating land contamination through the development of contaminated sites
EN3 – Landscape Protection	Remains current and relevant especially priority given to protecting, managing, and enhancing the character and quality of the Ely Valley Special Landscape Area including provision of a landscape assessment and landscaping scheme for significant development proposals
EN4 – River Corridors	Remains current and relevant, notably protecting, promoting, and enhancing Cardiff’s river corridors and facilitating sustainable access and recreation
EN5 – Designated Sites	Remains current and relevant especially development proposals that would affect locally designated sites of nature conservation. Where the need for the development outweighs the conservation importance of the site, it should be demonstrated that there is no satisfactory alternative location for the development which avoids nature conservation impacts, and compensation measures designed to ensure that there is no reduction in the overall nature conservation value of the area or feature

Study Area

6.4 Within the former chapter, a 2km study area was deemed as suitable based upon the scale and nature of the development and the surrounding topography, vegetation cover and built form. RPS agrees that this is appropriate based upon the location of the site at river level at the bottom of a wooded slope with the built form of Cardiff on the opposite side of the river. RPS agrees that the site falls within NLCA No.35 Cardiff, Barry and Newport but has a relationship with NCLA 36 Vale of Glamorgan which it abuts.

Baseline Methodology

6.5 Following guidelines set out in GLVIA3, landscape and visual assessment is carried out using a combination of desk-based and field study. Within the former chapter this included:

- An overview of statutory plans and other data regarding landscape designations and planning policies for the landscape.
- A field appraisal and inspection of the study area.
- An assessment of the landscape character and quality of the study area, together with the sensitivity of the landscape to change – with reference to landscape character assessments including LANDMAP.
- An analysis to determine the visibility of the application area from surrounding areas to identify key viewpoints from publicly accessible areas.
- Identification and assessment of the potential landscape and visual effects of the development proposals, in terms of their magnitude and significance.
- The preparation of mitigation proposals determined during the course of the assessment, with the aim of avoiding or reducing potential adverse landscape and visual effects.
- Assessments of the significance of any residual impacts after mitigation measures have taken effect.

Landscape Baseline

6.6 The landscape baseline study provides an understanding of the existing landscape in the area to be affected, its constituent elements, character, condition, and perceived value (landscape receptors).

Visual Baseline

6.7 The visual baseline study provides an understanding of the area in which development might be visible, the people who may experience the view (visual receptors), and the nature of the view. The study also considers the duration and type of the effect, i.e., short, medium, and long term and temporary or permanent effects.

Consultation

Table 6.4: Consultation Responses Relevant to this Addendum

Date	Consultee and Issues Raised	How/ Where Addressed
August 2019	Planning officer – Vale of Glamorgan. Suggested possible locations for viewpoints.	Photographs taken from the suggested locations.

May 2021 – Comment 1	Landscape officer – Vale of Glamorgan. Asked for viewpoint photo from footpath within Leckwith woods.	Photographs taken from the suggested location – Viewpoint 7 (See Figures 6.9 and 6.10).
May 2021 – Comment 2	Landscape officer – Vale of Glamorgan. Clarification of red dotted line within Viewpoint 1 and 2.	Clarification provided within response to landscape officer May 2021.
May 2021 – Comment 3	Landscape officer – Vale of Glamorgan. Asked for photomontages to be provided from 4 key locations.	Answer provided within response to landscape officer May 2021 visualisations not appropriate during outline application and more suited at a later stage when more details are available.
May 2021 – Comment 4	Landscape officer – Vale of Glamorgan. Provided link to new LANDMAP guidance.	Guidance post-dated original LVIA chapter. LANDMAP utilised for character assessment.
May 2021 – Comment 5	Landscape officer – Vale of Glamorgan. Concerns about the overall impact of the of woodland.	Answer provided within response to landscape officer May 2021. Arboricultural Impact Assessment (Sept 2022) provided to fully detail extent of proposed tree loss and suggested replacement / natural regeneration.
May 2021 – Comment 6	Landscape officer – Vale of Glamorgan. Predevelopment tree assessment with proposed retained and removed trees to be provided.	Answer provided within response to landscape officer May 2021 – Arborist report provided (Arborwood Tree Care). Arboricultural Impact Assessment (Sept 2022) provided to fully detail extent of proposed tree loss and suggested replacement / natural regeneration.
May 2021 – Comment 7	Landscape officer – Vale of Glamorgan. Cross sections through site required to understand relationship with context.	Provided by Loyn and Co Architects Drawing ref: S301E.
May 2021 – Comment 8	Landscape officer – Vale of Glamorgan. Clarification required on Green Fingers and play area within landscape strategy.	Clarification provided within response to landscape officer May 2021. New and enhanced landscape strategy provided by RPS in 2022.
May 2021 – Comment 9	Landscape officer – Vale of Glamorgan. Levels to footpaths required, especially in woodland areas.	Answer provided within response to landscape officer May 2021 – not required for outline application as a matter of detail. Confirmation that 'no-dig' construction methods will be used in woodland areas
May 2021 – Comment 6	Landscape officer – Vale of Glamorgan. Clarification on requirement for acoustic barrier.	Answer provided within response to landscape officer May 2021 – not required Site layout updated, building massing reconfigured meaning no acoustic fence required, new noise report provided

Assessment Criteria and Assessment of Significance

6.8 The former chapter follows GLVIA3 guidance on assessing landscape value through a review of existing landscape designations. Landscape values are assessed from very high (nationally / internationally designated landscape features with no landscape detractors) down to negligible

(undesigned countryside and landscape features with no landscape characteristics, degraded or despoiled with many landscape detractors).

- 6.9 The former chapter follows GLIVA3 guidance on the methodology of assessing landscape and visual sensitivity and the susceptibility to change from very high down to very low / negligible. In landscape criteria this is very high (distinctive landscape elements, absence of detractors, receptors in excellent condition, clear cultural value, high tranquillity) down to very low (absence of distinctive landscape elements, presence of many landscape detractors, receptors in poor condition and able to accommodate considerable change). In visual criteria this is very high (designated view and / or view is an important contributor to experience) down to negligible (views affected by many detractors and unlikely to be valued).
- 6.10 The next steps in the process are to assess the nature of the potential landscape effect (magnitude) (ranges from High down to No Change) and then the significance of that landscape effect using a matrix assessment of receptor sensitivity and magnitude which ranges from Substantial down to Negligible. The resulting significance of landscape effects then ranges from Major adverse to Major beneficial.
- 6.11 The process is then repeated for visual impact whereby the visual magnitude of changes ranges from High down to No Change and the significance of visual effect ranges from Substantial down to negligible.
- 6.12 The matrix for the assessment of significance therefore looks like Table 6.5 below and those effects shaded **grey** are deemed to be **significant** effects with all other effects deemed to be not significant.

Table 6.5 Assessment Matrix

Overall sensitivity	Overall magnitude of change				
	No Change	Negligible	Low	Medium	High
Negligible	No Change	Negligible	Negligible/Minor	Negligible/Minor	Minor
Low	No Change	Negligible/Minor	Negligible/Minor	Minor	Minor/Moderate
Medium	No Change	Negligible/Minor	Minor	Moderate	Moderate/Major
High	No Change	Minor	Minor/Moderate	Moderate/Major	Major/Substantial
Very High	No Change	Minor	Moderate/Major	Major/Substantial	Substantial

Limitations of the Assessment

- 6.13 This addendum agrees with the limitations of assessment described in the former chapter, namely the element of subjectivity relying upon qualitative assessment and based upon clear and transparent methods.

Baseline Environment

- 6.14 A full description of the landscape baseline of the site and its surroundings is provided in the former chapter including planning designations, landscape and cultural heritage designations including SSSI's, ancient woodland, scheduled monuments (SM), listed buildings, historic parks and gardens, local landscape designations (SINC), Special Landscape Areas (SLA), Conservations Areas (CA),

geology, hydrology, topography, land use and cover, vegetation, built form, access road and paths and landscape character.

- 6.15 10 landscape elements were identified as being landscape receptors including, Cwrt-yr-Ala basin SLA, Factory Wood SINC, Leckwith Woods SINC, River Ely SINC, Old Leckwith Bridge SM, Cwm Cydfin SSSI, Ancient Woodland, Artificial Pond, Vegetation, Topography.
- 6.16 With regards to the visual baseline the site is adjacent to the river and at a much lower level than the majority of the study area. The former chapter states that *'The topography of the site and study area, combined with the high level of vegetation and the raised A4232 means that views into the site are extremely limited. No far-reaching views exist from the north, south or west and only limited views from the east where the site is barely discernible in the overall context of the far-reaching, extensive, and panoramic views'*.
- 6.17 Six viewpoints were identified and shown on the Viewpoint Locations Plan (Please refer to Figure 6.8 in the 2020 ES). These were described as 1) Leckwith B4267, footway, looking south-west, 2) Leckwith interchange, looking south-west, 3) Old Leckwith Bridge looking south-west, 4) Ely Trail looking west-southwest, 5) Ely Trail looking west-northwest and 6) A4232 looking west. There were also three further viewpoints where the view was appraised but the site was not visible. These were described as, A) Grangemoor Park looking north-west, B) Canton, footbridge over railway looking south-west, C) Cardiff Castle, roof of Norman Keep, looking south-west.
- 6.18 At the request of the Vale of Glamorgan Landscape Officer during consultation a further viewpoint was added described as Viewpoint 7 Path within Leckwith Woods, looking north-east. Please refer to Figure 6.9 and 6.10.
- 6.19 It should be noted that views from private properties were also excluded from the LVIA as for reasons of inaccessibility and understanding at the time that private residences do not have a legal right to a view.

Future Baseline Conditions

- 6.20 Climate change, tree pests and diseases and recreation and tourism were all factors discussed in the former LVIA chapter. The tree pests and diseases continue to be more of an immediate threat to woodlands and individual trees than the direct effects of climate change. With the promotion of health and wellbeing in a post-pandemic world, it is likely that the development could play a part in reinforcing positive perceptions of woodlands and the links between the woodland and riverside. Information and management will be key in helping this develop sustainably.

Mitigation Measures Adopted as Part of the Project

- 6.21 The landscape mitigation and enhancement measures associated with the current refined and enhanced landscape strategy are set out below:
- Scale, density, and layout of the development designed to be sympathetic with the local context and massing / positioning of buildings updated to remove the potential requirement for acoustic fencing.

- Covered or undercroft car parking where possible to reduce the requirement for on-street car parking.
- Maximum building height (5-storey) informed by the local topography, to avoid breaking the skyline in the majority of views.
- ‘Green fingers’ linking woodland to riverside punctuating the development increased in both size and quantity and landscape given priority over roads to provide ‘hop-over’ of tree canopies.
- Where possible wooded nature of surrounding slopes retained and enhanced with significant new native tree planting at the edges, remaining area to be left to naturally regenerate following recommendations within Arboricultural Impact Appraisal.
- On site tree replacement planting to reflect local plan policy replacement for tree loss on site
- Riverside vegetation managed with the removal of inappropriate species such as Lawsons Cypress, also enhanced with additional native tree planting.
- Riverside access promoted with appropriate new routes but constrained to walkways and existing access points to maintain existing habitats.
- New pedestrian and cycle access’s into and around the site to promote appropriate connectivity to the local environment.
- Strong landscape strategy which is fully integrated with the drainage scheme to promote biodiversity and sustainable urban drainage techniques to ensure the development not only integrates with its context but enhances it.

Assessment of Construction Effects

6.22 The landscape and visual effects during the construction stage are summarised below in Tables 6.6 and 6.7. During the construction phase, 6 of the 10 landscape receptors are assessed to having a Moderate adverse effect which is considered as being significant within this addendum. The other 4 are assessed as Minor adverse which is considered as not significant within this addendum. During the construction phase, 4 of the 7 visual receptors are assessed as having a Moderate adverse effect which is considered as significant within this addendum. The remaining 3 are assessed as Minor adverse which is considered not significant within this addendum.

Assessment of Operational Effects

6.23 During the operational stage, 6 of the 10 landscape receptors as assessed as having a Moderate beneficial effect which is considered as significant within this addendum. Of the other 4 landscape receptors, 2 are assessed as Minor beneficial, 1 as No change and 1 as Minor adverse. These are all considered as not significant within this addendum.

6.24 It should be noted that during the operational stage, landscape and visual effects are assessed once mitigation measures such as additional landscaping have begun to take effect, soften views and contribute to biodiversity. In the case of additional tree planting this is considered in landscape and visual impact guidance as being a minimum of 15 years.

Assessment of Cumulative Effects

- 6.25 Cumulative effects were not assessed in the previous chapter. This addendum confirms that there are no other committed developments within the study area or adjacent context that would have any cumulative landscape or visual effect.

Summary of Effects and Conclusion

Summary of Landscape Effects

- 6.26 Ten landscape receptors were assessed in in the context of the proposed development of the site. Of these, six were judged to experience significant adverse effects during the construction phase. This is principally due to the landscape effects caused by the loss of trees from the ancient woodlands and construction activities.
- 6.27 New tree planting and other vegetation is proposed within the landscape strategy to link the woodland with the riverside through 'green fingers', reinforce the drainage strategy through attenuation ponds, open swales and rain gardens, enhance the river frontage through appropriate native planting and provide a high-quality landscape scheme to encompass the development. Whilst this goes some way to mitigate the loss of trees and woodland, nothing can fully compensate for the loss of ancient woodland.
- 6.28 The same ten landscape receptors were assessed for effects during the operational life of the development. There were not judged to be any significant adverse effects and indeed six were judged to be moderately beneficial which is assessed as significant. This is because of a more sensitive development which responds to its context and replaces the existing uses which were noted detractors to several of the landscape receptors.

Summary of Visual Effects

- 6.29 Twenty-one viewpoints were initially assessed but only six offered a view of the site. A further viewpoint (No.7 - see Figures 6.9 and 6.10) was added at the request of the Local Planning Authority. This is because the site is very well contained by topography to the west, an elevated section of the ring road to the east and vegetation all round. Differing distance views were assessed from short to long distance, but only short distance views offered more than a glimpse of the site.
- 6.30 Of the seven viewpoints assessed, four were judged to have moderate adverse effect during the construction phase of the development which is assessed as significant. It is noted that the construction period is generally considered to have greater landscape and visual effects than the finished development because of the number of activities including site protection, demolition, groundworks, construction, power generation, lighting, and welfare.
- 6.31 The same seven viewpoints were assessed for the operational life of the proposed development on the site. Three were judged to have moderately adverse effects which is significant. These three were the viewpoints closest to the site on the Old Leckwith Bridge and on the Ely trail to the east of the site whereby the increased building heights (although of higher quality) would still obscure more of the woodland backdrop of the SLA. The additional viewpoint (no.7) from the path within Leckwith woods to the west of the site was assessed to have a moderate beneficial effect which is again significant. This was due to the receptor being elevated and looking down on the increased height

of the buildings but looking at a higher quality scheme better integrated into its context and without the commercial clutter associated with the existing land use. The remaining viewpoints were assessed to not have significant effects.

Conclusion

- 6.32 The assessment and this addendum have found that there would be some significant landscape and visual effects arising from the construction of the development as expected. These are largely localised and short-term and would be replaced by the operational landscape and visual effects post-construction.
- 6.33 During the operational phase of the development, views towards the site would change with the replacement of one set of low-quality cluttered buildings with another set of higher quality. The proposed structures are taller and in views from the east would obscure more of the wooded backdrop of the SLA. The new buildings will however be set within a carefully considered landscape scheme which over time will help integrate the development within its context.
- 6.34 The chapter and this addendum conclude that the proposed development is likely to cause some significant adverse landscape and visual effects during the construction phase. It will, however, confer several significant beneficial landscape effects during the operational phase.
- 6.35 The negatives largely derive from the loss of trees within the ancient woodland which mitigation cannot fully replace. The positives largely derive from the enhancement of the settings of several landscape receptors by replacing low quality, ad hoc light industrial and commercial uses on site with a sensitive, well considered, integrated development with a coherent landscape, ecological and drainage strategy.

Table 6.6: Summary of Likely Landscape Effects

Receptor	Sensitivity of receptor	Description of impact	Duration	Magnitude of impact	Significance of effect	Significant / Not significant	Notes
Construction phase							
Cwrt-yr-Ala basin SLA	High	Removal of some trees, vegetation and existing structures	Long term	Medium	Moderate adverse	Significant	Loss is limited in scope and at local level therefore medium magnitude but highly sensitive landscape receptor
Factory Wood SINC	High	Removal of some trees	Long term	Medium	Moderate adverse	Significant	Loss is limited in scope and at local level therefore medium magnitude but highly sensitive landscape receptor
Leckwith Woods SINC	High	Removal of some trees	Long term	Medium	Moderate adverse	Significant	Loss is limited in scope and at local level therefore medium magnitude but highly sensitive landscape receptor
River Ely SINC	Medium	Removal of commercial units. Construction disturbance	Long term	Medium	Moderate adverse	Significant	Numerous detractors gives medium sensitivity. Former chapter stated Low magnitude but then in significance summary stated Medium.
Old Leckwith Bridge	High	Removal of inappropriate elements for setting. Construction disturbance	Long term	Medium	Moderate adverse	Significant	Cessation of vehicular traffic over bridge and removal of negative elements in its setting provides a medium magnitude of impact
Cwm Cydfin SSSI	High	Construction disturbance	Short term	Negligible	Minor adverse	Not significant	No direct change to the receptor gives a negligible magnitude of impact
Ancient Woodland	Very high	Some removal of trees	Long term	Low	Moderate adverse	Significant	Using matrix at table 6.5, very high sensitivity with low magnitude could be equal to Moderate / Major Adverse but is assessed as being Moderate within former LVIA chapter
Artificial Pond	Low	Permanent loss of pond	Long term	High	Minor adverse	Not significant	Low landscape value pond

Vegetation	Low	Removal of all vegetation except partial retention by riverside	Medium term	High	Minor adverse	Not significant	Low quality trees and vegetation with low landscape value
Topography	High	Construction groundworks	Short term	Low	Minor adverse	Not significant	Topography on the site is unremarkable but around the site contributes to landscape character, temporary impact in the form of groundworks
Operational phase							
Cwrt-yr-Ala basin SLA	High	Site developed with housing including landscape scheme	Long term	Low	Moderate beneficial	Significant	Woodland extended towards river via green fingers, site integrates with natural environment and less traffic
Factory Wood SINC	High	Setting of SINC improved	Long term	Medium	Moderate beneficial	Significant	Woodland extended towards river via green fingers, site integrates with natural environment and less traffic
Leckwith Woods SINC	High	Setting of SINC improved	Long term	Medium	Moderate beneficial	Significant	Woodland extended towards river via green fingers, site integrates with natural environment and less traffic
River Ely SINC	Medium	Setting of SINC improved	Long term	Medium	Moderate beneficial	Significant	Strengthening of bankside vegetation with appropriate species, protecting from erosion, enhancing biodiversity and encouraging managed access for people to the riverbank
Old Leckwith Bridge	High	Setting of Scheduled Monument improved	Long term	Low	Minor beneficial	Not significant	Cessation of vehicle traffic and improving the setting of the listed structure is beneficial. Using the matrix table at 6.5 it could be deemed Minor/Moderate beneficial which would be significant
Cwm Cydfin SSSI	High	No change	Long term	Negligible	No change	Not significant	No direct impact upon a highly sensitive receptor, no added disruption during the

							operational phase of the development
Ancient Woodland	Very high	Improved setting of ancient woodland	Long term	Negligible	Minor beneficial	Not significant	Negligible impact during the operational phase and quieter site with less traffic. Also natural regeneration of woodland is assessed as minor beneficial
Artificial Pond	Low	Removal of pond but street side swales, open water attenuation features and raingardens provided on site	Long term	High	Moderate beneficial	Significant	Pond is removed but landscape and drainage strategies work together to provide sustainable and biodiverse blue infrastructure
Vegetation	Low	New planting on site, including trees. Selected and managed to improve biodiversity	Long term	High	Moderate beneficial	Significant	Existing landscape receptor is in poor condition and of low value. Landscape strategy provides the opportunity to connect the woodland to the river and enhance biodiversity
Topography	High	Small adjustment for new road junction	Long term	Negligible	Minor adverse	Not significant	Very little change in topography over the majority of the site, localised change around the road junction

Table 6.7: Summary of Likely Visual Effects

Receptor	Sensitivity of receptor	Description of impact	Duration	Magnitude of impact	Significance of effect	Significant / Not significant	Notes
Construction phase							
Viewpoint 1	Low	Construction activity	Short term	Low	Minor adverse	Not significant	Low value view adjacent a busy A road. Temporary view of cranes and construction activity and potential increase in traffic
Viewpoint 2	Low	Construction activity	Short term	Low	Minor adverse	Not significant	Low value view from the middle of a roundabout looking towards a raised road.

							Potential temporary view of cranes and construction activity and potential increase in traffic
Viewpoint 3	Medium	Removal of detractors plus construction activity	Short term	Medium	Moderate adverse	Significant	High value view from a scheduled monument but with many detractors making receptor less sensitive. Temporary construction activity will be prominent in the view
Viewpoint 4	Medium	Removal of detractors plus construction activity	Short term	Medium	Moderate adverse	Significant	Site only visible during the winter months as within wooded trail with 4 lane highway behind the viewer. Temporary views of construction activity
Viewpoint 5	Medium	Removal of detractors plus construction activity	Short term	Medium	Moderate adverse	Significant	Site only visible during the winter months as within a largely wooded / well vegetated trail with 4 lane highway behind the viewer. Temporary views of construction activity
Viewpoint 6	Low	Removal of detractors plus construction activity	Short term	Medium	<u>Minor</u> adverse	<u>Not</u> significant	Temporary fleeting view from moving vehicles as no pedestrian access. <u>Medium magnitude with low sensitive receptor should equal Minor adverse not moderate adverse as shown in previous chapter.</u>
Viewpoint 7	Medium	Removal of detractors plus construction activity	Short term	Medium	Moderate adverse	Significant	Site only visible during the winter months as within peri-urban wooded trail. Temporary views of construction activities.
Operational phase							
Viewpoint 1	Low	Existing built structures replaced with new	Long term	Low	Minor beneficial	Not significant	Very limited view of only northern elements of the site in the context of the raised A4232. Clutter removed from

							around the scheduled monument
Viewpoint 2	Low	Existing built structures replaced with new, clutter from around old bridge is removed	Long term	Low	Minor beneficial	Not significant	Existing vegetation obscures large parts of the site and the site is seen in the context of the raised A4232. Clutter removed from around the scheduled monument
Viewpoint 3	Medium	Road bridge changes location, high quality scheme replaces former low quality structures, clutter removed, vegetation improved	Long term	Medium	Moderate adverse	Significant	New bridge moves to the right of the view, appropriate planting added to the river side, partial views of new high quality buildings in front of woodland backdrop.
Viewpoint 4	Medium	High quality scheme replaces former low quality structures, clutter removed, vegetation improved	Long term	Medium	Moderate adverse	Significant	New bridge moves closer to the visual receptor but is likely to be largely obscured by woodland. New high quality buildings will be three storeys higher than the existing poor quality buildings and will block views of more of the SLA woodland
Viewpoint 5	Medium	High quality scheme replaces former low quality structures, clutter removed, vegetation improved	Long term	Medium	Moderate adverse	Significant	New high quality buildings will be two storeys higher than the existing poor quality buildings and will block views of more of the SLA woodland. Appropriate native species tree planting will enhance the riverside and soften views of the new housing
Viewpoint 6	Low	Road bridge changes location, high quality scheme replaces former low quality structures, clutter removed, vegetation improved	Long term	Low	Minor adverse	Not significant	Road bridge will move to the right in the view beyond the Old Leckwith Bridge. Fleeting view between vegetation at bridge on the A4232 and not the focus of the driver. High quality scheme and landscaping replaces cluttered

							view of assorted buildings and car parking. New units will be 3 storeys higher than existing meaning more of woodland backdrop will be covered
Viewpoint 7	Medium	High quality scheme replaces former low quality structures, clutter removed, vegetation improved	Long term	Medium	Moderate beneficial	Significant	New buildings are 3 storeys higher than existing but visual receptor is elevated and looking down on them so less visual impact. High quality scheme with landscaping, less cluttered view with less noise and only visible in the winter months die to trail within a woodland setting

7 FLOODING & HYDROLOGY

Introduction

7.1 This is an addendum to the Flooding & Hydrology (Chapter 7) of the 2020 ES. It has been written to amend and update the originally submitted ES to reflect updates and design changes in the intervening period.

7.2 Specifically, the key data which form the update in this addendum are:

- Updated site layout (drawing ref: S102 Rev H)
- Updated flood modelling and responses from NRW (Appendices 7.5 and 7.9)
- Updated drainage scheme (Appendices 7.6 and 7.8)

Assessment Methodology

7.3 There are no changes to the assessment methodology

Planning Policy Context

Planning Policy Wales 11th Edition 2021

7.4 Planning Policy Wales (PPW) has been updated from PPW10 to PPW11 (February 2021), the most pertinent section states:

'The climate emergency is likely to increase the risk of flooding as a result of sea-level rises, increased storminess and more intense rainfall. Flooding as a hazard involves the consideration of the potential consequences of flooding, as well as the likelihood of an event occurring. Planning authorities should adopt a precautionary approach of positive avoidance of development in areas of flooding from the sea or from rivers.'

Relevant Guidance

7.5 CIRIA C697 'The SuDS Manual' has been updated from C697 to C753.

Study Area

7.6 There are no changes to the study area

Baseline Methodology

7.7 No changes to the baseline methodology / information have been made.

Consultation

7.8 NRW have provided comments to the planning application, these are detailed in Table 7.1 along with the Applicants response.

Table 7.1: Consultation Responses Relevant to this Chapter

Date	Consultee and Issues Raised	How/ Where Addressed
08/07/2022	Any changes to the design of the culvert, bridge, cycle path or elevations of the site, may impact flood risk to the site or have impacts elsewhere. If any changes to the design are undertaken, the consequences of flooding must be reassessed.	It is accepted that any significant changes to the design, as described, will require a reassessment of flood risk.
	Condition: soffit level to be set at 8.73mAOD	It is accepted that this will be a Planning condition
	If planning permission is granted, the FCA dated April 2022 by WSP should be included in the approved plans and documents condition on any decision notice.	It is accepted that the FCA should be included in the approved plans and documents in any decision notice
	Condition 10- Surface water drainage No infiltration of surface water drainage into the ground is permitted other than with the express written consent of the local planning authority, which may be given for those parts of the site where it has been demonstrated that there is no resultant unacceptable risk to controlled waters. The development shall be carried out in accordance with the approved details.	Drainage Strategy
	You will need to apply for Flood Risk Activity Permit from NRW. All Permit applications must be approved prior to the commencement of any works and due to the stand-alone nature of the legislation must be sought alongside any granted planning permission.	It is accepted that a FRAP will be required as part of the described works.

Assessment Criteria and Assignment of Significance

7.9 There are no changes to the assessment criteria.

Limitations of the Assessment

7.10 All previously noted limitations remain valid, there are no additional limitations noted.

Baseline Environment

7.11 The Applicant is not aware of any changes to the Baseline Environment.

Future Baseline Conditions

7.12 There are no changes to the future baseline conditions.

Mitigation Measures Adopted as Part of the Project

7.13 There are currently no changes to the Construction Phase Mitigation. The CEMP will be reviewed and updated prior to commencement of the construction phase, this will include that the measures

identified within the Water Framework Directive assessment (WFD). The WFD report was completed in February 2021, post submission of the ES. As refinements to the site proposals and flood mitigation have occurred in the intervening period this report will be updated during the detailed design stage, it is not expected that the changes will fundamentally impact the findings of the WFDa.

7.14 The Operational Phase Mitigation has been refined since the preparation of the ES, these are detailed in the following reports

- WSP (2022) Leckwith Quay, Flood Consequences Assessment – Appendix 7.7
- WSP (2022) Leckwith Quay, Hydraulic Modelling Report – Appendix 7.5
- WSP (2022) Drainage Strategy – Appendix 7.6

7.15 The changes to the operational phase mitigation which have been assessed in the hydraulic model and considered in the FCA include:

- Alterations to the development plateaux, as detailed in the latest proposed layouts and general arrangements;
- Culverts under both river banks, bypassing the historic bridge, the configuration is defined in the latest proposed layouts and general arrangements;
- As explicitly required by NRW the soffit level of the viaduct is to be set at 8.73 m AOD.
- Habitable Finished Floor Levels (FFLs) will be set a minimum of 600mm above the 1 in 100 year plus climate change flood level;
- Any external amenity and ancillary areas in the northern plateau that are adjacent / in close vicinity to the riverbank and will be at risk of flooding are to passively accommodate flood waters, have readily accessible means to enable egress to safety, measures to prevent floating debris being carried by floodwater and be sufficiently drainable post flood event, this will be undertaken during detailed design.
- The undercroft car parking is to be readily evacuable (e.g. stair cases) and protected by self-raising barriers to ensure that an appropriate level of protection is provided.
- Any services or other infrastructure provision within the undercroft parking areas will be designed to ensure that appropriate flood constraints are considered.
- Service ingress /egress points should be located above the 1 in 100 year plus climate change flood level plus 600 mm freeboard level, where this is not feasible appropriate seals will be provided.
- The undercroft carpark will be at or above external levels outside the building footprint.

Assessment of Construction Effects

- 7.16 Whilst the refinement of the mitigation measures required for incorporation into the project increases the amount of construction required adjacent to the watercourse (e.g. bypass culverts), the assessment of the anticipated construction effects and mitigation as described in the ES is not significantly altered, nor have any new effects been identified. Notwithstanding this the original subheadings from this subsection the ES are addressed in turn below.

Increased sedimentation of the River Ely as a result of runoff from construction materials

- 7.17 There are no substantive changes to this assessment. Whilst the amount of riparian construction has increased, the mitigation and impact remain unaltered from that described in the ES.

Increased sedimentation of the River Ely as a result of bridge construction in the river channel

- 7.18 There are no substantive changes to this assessment. Whilst the amount of construction has increased, considering the bypass culverts as part of the bridge construction for this assessment, the mitigation and impact remain unaltered from that described in the ES.

Spillage of pollutants and harmful substances such as fuels and concrete into the River Ely and groundwater

- 7.19 There are no substantive changes to this assessment. Whilst the amount of riparian construction has increased, the mitigation and impact remain unaltered from that described in the ES.

Impacts to the hydromorphological and biological quality of the River Ely associated with works adjacent to these features

- 7.20 The WFDa which was prepared after submission of the ES, demonstrates that the development is WFD compliant. The WFDa will be updated during the detailed design to account for the changes in site layout and flood. Whilst the amount of riparian construction has increased, the mitigation and impacts anticipated in the ES remain unaltered from that described in the ES.

Increased flood risk to people and property elsewhere associated with losses to flow conveyance and flood storage as a result of temporary works in the channel and on the floodplain

- 7.21 There are no substantive changes to this assessment. Whilst the amount of riparian construction has increased, the mitigation and impact remain unaltered from that described in the ES.

Fluvial, tidal and groundwater flood risk to construction workers and plant

- 7.22 There are no substantive changes to this assessment. Whilst the amount of riparian construction has increased, the mitigation and impact remain unaltered from that described in the ES.

Further Mitigation

- 7.23 There are no substantive changes to this assessment. Whilst the amount of riparian construction has increased, the mitigation and impact remain unaltered from that described in the ES.

Construction Phase Monitoring

- 7.24 There are no substantive changes to this assessment, it is noted that NRW's response on suggests a water quality monitoring plan is added to the CEMP. This was not explicitly identified as a CEMP item in the ES; therefore, it is identified as a CEMP requirement, additional to those listed in the ES, in this addendum. Whilst the amount of riparian construction has increased, the mitigation and impact remain unaltered from that described in the ES.

Accidents and/or Disasters

- 7.25 There are no substantive changes to this assessment. Whilst the amount of riparian construction has increased, the mitigation and impact remain unaltered from that described in the ES.

Assessment of Operational Effects

- 7.26 The refinement of the mitigation measures required for incorporation into the project alleviate the flood risk to and from the development. Notwithstanding this, the assessment of the anticipated operational effects and mitigation as described in the ES for the majority of subheadings do not significantly alter, nor have any new effects been identified. Notwithstanding this the original subheadings from this subsection the ES are addressed in turn below.

Impacts to the hydromorphological and biological quality of the River Ely associated with the new bridge and other elements of the Proposed Development

- 7.27 Noting that the WFDa completed in February 2021 will be updated during detailed design to ensure the alterations to the design are be appropriately mitigated, there are no substantive changes to this assessment.

Increased fluvial, tidal and groundwater flood risk to people and properties in the vicinity and as part of the Proposed Development

- 7.28 Since the ES chapter was written additional flood modelling and refinement of the flood mitigation has been completed. Therefore, this subsection in the ES (S7.6.8 – 7.6.11) is updated as follows.
- 7.29 The Proposed Development includes a bridge across the River Ely, as well as raising the development plateau above the design flood level, construction of hard engineered, impermeable structures adjacent to the river and within the flood plain. The presence of these structures, when free flowing, will result in a net increase in flood flow conveyance within the river channel and result in a reduction in flooding in the floodplains immediately upstream but an increase in flooding in-channel downstream. This is assessed further within the FCA (Appendix 7.7).
- 7.30 As set out in this section of the ES (S 7.6.9), an operational drainage strategy (Appendix 7.6) will be implemented as part of the Proposed Development.
- 7.31 The sensitivity of people and properties within the area and as part of the operational Proposed Development is anticipated to be high, due to the relative size of the Proposed Development compared to the flood plain, the magnitude of change is anticipated to be Low. Therefore, there is likely to be a direct, permanent, long-term effect of Minor on people and properties within the Proposed Development as a result of flood risk.

- 7.32 The works undertaken to inform the FCA (Appendix 7.7) to date. It is expected that impacts on third parties following the mitigation, will render the effect of Minor *detriment* in channel significance downstream in channel, but Moderate *beneficial* in the floodplains upstream.

Further Mitigation

- 7.33 There is no change to the assessment in the ES that no further mitigation is anticipated to be required.

Future Monitoring

- 7.34 There are no substantive changes to this assessment. Additional to the regular inspection of the drainage system and outfalls noted in the ES, regular inspection of the flood bypass culverts should also be included.

Accidents/Disasters

- 7.35 There are no substantive changes to this assessment. Whilst the flood mitigation incorporated into the scheme has been better defined, the mitigation and impact remain unaltered from that described in the ES.

Potential Changes to the Assessment as a Result of Climate Change

- 7.36 There is no change to the assessment in the ES that climate change allowances are explicitly considered in the FCA & Drainage Strategy.

Assessment of Cumulative Effects

- 7.37 There is no change to the assessment in the ES that no cumulative effects are predicted.

Summary of Effects and Conclusion

- 7.38 In summary, likely significant effects are still identified in both the construction and operation phase but are predominantly associated with pollution and flood risk potential during the construction phase. There is also a potential opportunity that the Scheme will decrease flood risk on the upstream developed floodplain of Cardiff in the long term once climate change is taken into account. Further operational phase effects on WFD receptors are possible and although the development was previously found to be WFD compliant, this will need to be confirmed with an update to the full WFD assessment, prior to construction.
- 7.39 Mitigation measures for the potential effects identified are generally inherent to the site development and are incorporated into the detailed design (such as drainage design) and CEMP required for the Construction Phase.
- 7.40 For completeness, the summary of the effects from the prior ES, updated as necessary, are presented in Table 7.2 at the end of this chapter.

Table 7.2: Summary of Likely Environmental Effects on Flooding & Hydrology

Receptor	Sensitivity of receptor	Description of impact	Short / medium / long term	Magnitude of impact	Significance of effect	Significant / Not significant	Notes
Construction phase							
Surface Water (River Ely)	High	Increased sedimentation of the River Ely as a result of runoff from construction materials	Short-Medium-term	Negligible	Minor	Not Significant	Residual significance dependent on measures implemented through a CEMP
Surface Water (River Ely)	High	Increased sedimentation of the River Ely as a result of bridge construction in the river channel	Short-Medium-term	Negligible	Minor	Not Significant	Residual significance dependent on measures implemented through a CEMP
<ul style="list-style-type: none"> • Surface Water (River Ely); • Biological Resources; and • Groundwater Resources and Aquifers 	High / Medium	Spillage of pollutants and harmful substances such as fuels and concrete to the River Ely and groundwater	Short-term	Low	Minor	Not Significant	Residual significance dependent on measures implemented through a CEMP.
<ul style="list-style-type: none"> • Surface Water (River Ely); and • Biological resources. 	High	Impacts to the hydromorphological and biological quality of the River Ely associated with works adjacent to these features	Short-term	Low	Moderate to Minor	Not Significant	Residual significance dependent on measures implemented through a CEMP. Results of WFD assessment may lead to additional effects and mitigation requirements.
Properties and members of the public	High	Increased flood risk to people and property elsewhere associated with losses to flow	Short-term	Negligible	Minor	Not Significant	Residual significance dependent on measures implemented through

Receptor	Sensitivity of receptor	Description of impact	Short / medium / long term	Magnitude of impact	Significance of effect	Significant / Not significant	Notes
		conveyance and flood storage as a result of temporary works in the channel and on the floodplain					a CEMP and Flood Management Plan
Construction workers and plant	High	Fluvial, tidal and groundwater flood risk to construction workers and plant	Short-term	Negligible	Minor	Not Significant	Residual significance dependent on measures implemented through a CEMP and Flood Management Plan
Operational phase							
<ul style="list-style-type: none"> • Surface Water (River Ely); and • Biological resources. 	High	Impacts to the hydromorphological and biological quality of the River Ely associated with the new bridge and other elements of the Proposed Development	Long-term	Low	Minor to Moderate	Not Significant	Residual significance dependant on measures implemented through the drainage design. Results of WFD assessment may lead to additional effects and mitigation requirements.
Properties and members of the public	High	Increased fluvial, tidal and groundwater flood risk to people and properties in the vicinity and as part of the Proposed Development	Long-term	Low	Minor	Not Significant	Residual significance dependant on measures implemented through the design.
Properties and members of the public	High	Decreased fluvial, flood risk to people and properties in the vicinity. (i.e. benefit)	Long-term	Low	Moderate	Not Significant	Residual significance dependant on measures implemented through the design.

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10 NOISE AND VIBRATION

Introduction

- 10.1 This addendum to the Noise and Vibration (Chapter 10) of the 2020 ES has been prepared to consider the comments received by The Vale of Glamorgan Council. As confirmed below, the overall conclusions have not changed since the 2020 ES submission.

Assessment Methodology

- 10.2 The assessment methodology has not changed since the 2020 submission therefore no changes are proposed to Section 10.2 of the 2020 ES submission.

Planning Policy Context

- 10.3 Since the original submission, additional planning guidance has been provided within Planning Policy Wales Edition 11, detailed in the section below.

Planning Policy Wales (PPW11 – Feb 2021)

- 10.4 Planning Policy Wales Edition 11 was released in 2021 and outlines overall design guidance for developments with reference to soundscape. The document outlines the wider community and health benefits that are linked to lower noise levels; *'The way a development is laid out and arranged can influence people's behaviours and decisions and can provide effective mitigation against air and noise pollution'*.
- 10.5 Section 6.7 'Air Quality and Soundscape' of the document provides guidance on how environmental noise and soundscape needs to be considered in new developments;

In proposing new development, planning authorities and developers must, therefore:

- *address any implication arising as a result of its association with, or location within, air quality management areas, noise action planning priority areas or areas where there are sensitive receptors*
 - *not create areas of poor air quality or inappropriate soundscape; and*
 - *seek to incorporate measures which reduce overall exposure to air and noise pollution and create appropriate soundscapes.*
- 10.6 Whilst the guidance is high level, it outlines an intent that environmental noise and soundscape needs to be considered within developments, with care taken to improve the quality of environmental noise where possible.

Relevant Guidance

- 10.7 All guidance documents referenced within the assessment have not changed from the 2020 ES submission, however additional guidance in regard to overheating and noise has since been released within Approved Document O, as outlined in the following section.

Approved Document O (2022)

- 10.8 Approved Document O outlines building regulation requirements for mitigating overheating risk within residential developments, however as part of the requirements, guidance and criteria is also provided for associated façade design factors that would influence the usability of any overheating mitigation measures.
- 10.9 Section 2.2 of Approved Document O provides guidance on noise levels at night, such to ensure that sleep disturbance is minimised, where any acoustic conditions that limit the use of openable windows will need to be taken into account within the overheating model.
- 10.10 Specific guidance on mitigating noise when ventilating against overheating is provided as follows;

When the removing excess heat as part of the overheating strategy, noise levels in bedrooms should be kept to a minimum during the sleeping hours of 23:00 – 07:00. Building control bodies may accept as evidence that this requirement is satisfied:

 - a. documentation to demonstrate that the local planning authority did not consider external noise to be an issue at the site at the planning stage or;*
 - b. if the local planning authority did consider external noise to be an issue that should be controlled through a condition at planning stage, then documentation to demonstrate that the proposals for heat removal (during the sleeping hours of 23.00 – 07.00) are accommodated within or do not conflict with documentation provided to the local planning authority to satisfy any related planning permission condition(s). (For example any expectation that windows on one or more façade, or in certain rooms, will need to be kept closed during noise-sensitive periods.)*
- 10.11 No specific acoustic targets are provided within the document however, and the specification of any target reliant on any acoustic criteria would arise from relevant planning conditions; however the guidance indicates a desire for reduced noise levels to bedrooms and as such this should be adopted within the site and building layout of the development.

Study Area

- 10.12 No changes have been made to the study area within the 2020 ES submission.

Baseline Methodology

- 10.13 No changes have been made to the baseline methodology within the 2020 ES submission.

Consultation

Table 10.1: Consultation Responses Relevant to this Chapter

Date	Consultee and Issues Raised	How/ Where Addressed
	Vale of Glamorgan Council	
April 2022	Comments received on whether noise barriers are to be included within the scheme and the resultant noise impact upon the proposed residential properties.	It has been confirmed that noise barriers are not to be provided across the site as the acoustic benefit was limited and did not provide suitable improvement when compared against the visual/aesthetic impact upon the site. Acoustic design input was instead provided to the building massing and site layout to provide a more effective acoustic mitigation strategy.

		See chapter 'Assessment of Operation Effects – Operational Noise – Suitability for Residential Use'.
April 2022	Comments received requiring additional information on mitigation of noise levels to amenity areas to residential areas.	The building massing and site layout was reviewed to provide acoustic screening to amenity areas and lower noise levels. Large areas within the centre of the site have been effectively mitigated, with noise levels falling within the TAN A category. Refer to Appendix 10.1 for further information. See chapter 'Assessment of Operation Effects – Operational Noise – Suitability for Residential Use'.
April 2022	Concerns raised regarding suitable internal noise targets for dwellings when ventilating against overheating. Noise targets have not been specified for the project, however the local authority expressed preference for +0-5dB above BS8233 internal noise level criteria.	A review has been carried out of available guidance in regards to acoustic conditions when ventilating against overheating, including Approved Document O. Suitable noise targets will be established across the project. Refer to Appendix 10.1 for further information. Passive design measures have been introduced, where all dwellings are dual aspect and will always provide access to a façade that falls within TAN 11 Categories A or B, which will allow for cross ventilation to quieter facades. If required, the detailed design of the development can incorporate mitigation measures such as acoustic louvres or mechanical ventilation to achieve the agreed internal noise targets. See chapter 'Assessment of Operation Effects – Operational Noise – Suitability for Residential Use'.

Assessment Criteria and Assignment of Significance

10.14 The assessment criteria and assignment of significance has not changed since the 2020 ES submission.

Limitations of the Assessment

10.15 Any limitations of the assessment remain the same as those defined in the 2020 ES submission.

Baseline Environment

10.16 The assessment of the baseline environment has not changed since the 2020 submission, therefore no changes are proposed to Section 10.4 of the 2020 ES.

Future Baseline Conditions

10.17 The assessment of the future baseline conditions has not changed since the 2020 submission.

Mitigation Measures Adopted as Part of the Project

10.18 There are no changes to the required mitigation measures for construction noise impact, building services plant impact or traffic noise impact as outlined in the 2020 submission. Further analysis has been provided in regards to the assessment of suitability for residential use, in which changes to site layout and building massing have been carried out to reduce noise levels across the site.

Assessment of Construction Effects

10.19 The assessment of construction noise impact has not changed since the 2020 submission, therefore no changes are proposed to Section 10.5 of the 2020 ES.

Assessment of Operational Effects

Operational Noise – Building Services Plant

- 10.20 The assessment of operational building services plant noise impact has not changed since the 2020 submission.

Operational Noise – Traffic Noise

- 10.21 The assessment of operational traffic noise impact has not changed since the 2020 submission.

Operational Noise – Suitability for Residential Use

- 10.22 Following comments from the Vale of Glamorgan Council, further assessment and input was provided to the effect of noise levels upon the proposed residential properties, both in regards to outdoor amenity and external noise ingress to dwellings.
- 10.23 The existing noise levels across the site are above the recommended 55dB limit however it is possible to provide acoustic screening from the building massing of the proposed development.
- 10.24 MACH have carried out noise mapping of the proposed site to determine the level of acoustic screening that can be achieved. The revised Environmental Noise Assessment Report (March 2022) included at Appendix 10.1 provides a noise map of the proposed site layout. As shown, there is opportunity to create central areas within the development site that fall below 55dB within the centre of the site. This would have a positive impact upon the overall soundscape of the development site, reducing traffic noise and allowing for more audibility of sound from the surrounding natural environment.
- 10.25 In regard to internal noise levels, acoustic comfort will be achieved throughout the majority of the year though controlling noise ingress through appropriately specified glazing, wall and roof constructions, as well as through acoustically treated trickle ventilators or mechanical ventilation systems.
- 10.26 Design advice has been provided to establish where noise ingress can be reduced through passive design measures when ventilating to mitigate overheating, such as through locating bedrooms on quieter facades and promoting efficient cross ventilation strategies through dual aspect design. Further acoustic mitigation can be achieved through the use of efficient cooling strategies, or through acoustically attenuated ventilation grilles, which can be developed within later design stages.
- 10.27 Outdoor amenity areas are to be located within the centre of the site and will benefit from screening from adjacent buildings, benefiting from <55dB noise levels (TAN11 Category A).
- 10.28 It is possible to control noise ingress so that BS8233 internal noise level criteria within all dwellings can be achieved with natural ventilation strategies. Suitable design measures will be considered throughout the design stage of the proposed development, so to ensure a good quality acoustic environment will be achieved.

10.29 Vibration

- 10.30 The assessment of operational vibration impact has not changed since the 2020 submission.

Assessment of Cumulative Effects

- 10.31 The assessment of cumulative effects has not changed since the 2020 submission, therefore no changes are proposed to Section 10.6 of the 2020 ES.

Summary of Effects and Conclusion

- 10.32 The conclusions have not changed since the 2020 submission.

Table 10.1: Summary of Likely Environmental Effects on Noise and Vibration

Receptor	Sensitivity of receptor	Description of impact	Short / medium / long term	Magnitude of impact	Significance of effect	Significant / Not significant	Notes
Construction phase							
Nearby Residential Properties	Medium	Increase in ambient noise levels	Medium term	Negligible	Negligible	Not significant	-
Operational phase							
Proposed Residential Units within Development	Medium	High ambient noise levels	Long term	Low	Minor	Not significant	Acoustic design to include mitigation measures – to be finalised within detailed design phase.
Nearby Residential Properties	Medium	Increase in ambient noise levels from increased traffic flow	Long term	Negligible	Negligible	Not significant	-
Nearby Residential Properties	Medium	Increase in ambient noise levels from building services units	Long term	Negligible	Negligible	Not significant	-