Natural Resources Wales

Stephenson Street Flood Defence Scheme

Planning Design and Access Statement

274580-ARP-XX-XX-RP-PL-0004

Issue | 5 July 2021

This report takes into account the particular instructions and requirements of our client.

It is not intended for and should not be relied upon by any third party and no responsibility is undertaken to any third party.

Job number 274580-00

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1 Introduction

1.1 Background

Ove Arup and Partners Limited (Arup) have been commissioned by Natural Resources Wales (NRW) to undertake a range of engineering and environmental services for the detailed design of a flood defence scheme in the Liswerry area of Newport. This Planning, Design and Access Statement (PDAS) has been submitted in support of an application for full planning permission, submitted to Newport City Council (NCC), herein referred to as the Local Planning Authority (LPA).

The proposed development is described as follows:

"Construction of the Stephenson Street Flood Defence Scheme, incorporating the construction of 6no. flood walls (concrete and sheet pile), refurbished embankments and paths including the Wales Coast Path, a highway flood gate, a new 0.7km flood relief road, localised ground raising and culvert enhancements to reduce the chance of tidal flood risk from the River Usk and landscaping works along the route and at Coronation Park, Newport."

The application site exceeds 1 hectare in area (cumulatively) and therefore the Stephenson Street Flood Defence Scheme (FDS) constitutes 'major development' as defined within The Town and Country Planning (Development Management Procedure) (Wales) Order 2012 (as amended). Subsequently, the application has been scoped to accord with the regulations associated with major development, as prescribed by the regulations.

An application pursuant of full planning permission was submitted to the LPA on 5 July 2021.

1.2 Need for the Development

Newport has a history of tidal flooding. The highest recent tidal surge was recorded in December 1981 with a level of 8.4m above ordinance datum (AOD) recorded at Newport Docks. Other notable local tidal floods include January 1936 and February 1957. Much of the Spytty area of Liswerry is at risk of tidal flooding including homes, businesses, leisure amenities and infrastructure such as the A48, Newport International Sports Village, Newport Stadium and Dragon Park.

The existing flood embankment upon the eastern bank of the River Usk demonstrates a variable crest height and is classified as a 'failing asset' due to localised subsidence and structural failures. Flood modelling has demonstrated that the existing defence is at risk of flooding during events with a 3.3% annual exceedance probability (AEP), and there is a risk of localised breach. Without the required remedial and improvement works to existing flood defence infrastructure along the River Usk, assets are likely to fail, placing significant risks upon human health and residential/non-residential properties in Liswerry, Newport.

Near miss events include January and March 2014, and March 2020 where tidal surges were experienced on the River Usk. Assuming a breach were to occur

today, some 192 residential dwellings and 620 non-residential properties in Spytty would have a greater than 0.5% AEP risk of tidal flooding. The predicted speed and depth of overtopping and inundation would be particularly hazardous, extending up to 2.5km inland from the River Usk. Sea level rise due to climate change increases the predicted risk significantly to 1,117 residential dwellings and 1,016 non-residential properties by 2069.

The Stephenson Street FDS supports the delivery of the Severn Estuary Shoreline Management and the Severn Estuary Flood Risk Management Strategy (SEFRMS) policy to 'Hold the Line'. Policy SMP2 'Hold the Line' of the Management Strategy relates to maintaining flood defences in the location of existing assets. The proposed development would support the principle of the 'Hold the Line' policy while achieving protection to a 1 in 200 chance in any year (0.5% AEP) with allowance for 50 years of predicted sea level rise.

The Wales Coast Path (WCP) runs along the narrow embankment crest, however its condition varies with poor accessibility. Coronation Park and the area adjacent to the Grade I Listed Transporter Bridge are popular amenity/recreation locations; however, facilities and landscaping are limited. The River Usk is an important environmental and landscape feature, however visitor interpretation and facilities in this area are lacking.

The Stephenson Street FDS seeks to deliver the following scheme objectives:

- Reduce flood risk from the River Usk to at least 800 properties in Liswerry, Newport;
- Consider future operational, inspection and maintenance requirements of the flood defences;
- Reduce and mitigate environmental effects, especially on the sensitive ecology of the area (River Usk Special Area of Conservation (SAC) and River Usk Site of Special Scientific Interest (SSSI));
- Consider the requirements and experience of people using the Wales Coast Path (WCP);
- Integrate the principles of Sustainable Management of Natural Resources (SMNR) by focussing on improvements at Coronation Park; and
- Minimise potential effects to neighbouring properties and businesses.

The proposals are estimated to reduce flood risk to people and property equating to present value economic benefits to the UK (flood damages avoided) of £178 million over the 100-year appraisal period.

Figure 1 Existing site photos of the Newport Transporter Bridge, Coronation Park and WCP.

1.3 Proposed Works

NRW has developed the Stephenson Street FDS to mitigate the current and anticipated flood risk in the Liswerry area of Newport. The proposed works would include improvements to existing earth embankments and localised ground raising along the eastern bank of the River Usk and Stephenson Street, construction of reinforced concrete flood walls and non-return tidal valve and culvert improvements. In addition to the flood defence infrastructure, the proposals would include a new flood relief road connecting Corporation Road to East Bank Road, enhanced CEMEX site entrance, a highway flood gate at the Corporation Road railway overbridge and landscaping planting at Coronation Park. For detailed overviews of each of the elements of development, please refer to Section 3.1 of this Statement.

The proposals represent a linear alignment including 1,350m of flood defences along the eastern bank of the River Usk, constituting a site area of 8.3 hectares ('major development'). The scheme has been designed to provide flood protection for a 0.5% AEP flood event with an allowance for the effects of predicted climate change.

Section 3 of this PDAS provides a detailed description of the proposed works covered by this application. In summary, the proposed works would include the construction of:

- 6no. reinforced concrete flood walls;
- 3no. areas of localised ground raising north of Stephenson Street;
- Construction of 0.7km of flood relief road connecting East Bank Road and Corporation Road, with associated drainage, access points and minor modifications to East Bank Road;
- Construction of a sheet pile flood wall and embankment accommodating enhancements to the WCP;
- Raising and improvements of an existing flood embankment along the western boundary of Coronation Park, accommodating enhancements to the WCP;
- Installation of a flood gate to the Corporation Road railway overbridge;

- Non-return tidal flap valves and culvert enhancements to the railway embankment;
- Upgrades to the WCP; and,
- Public realm and landscape planting, including comprehensive mitigation planting at Coronation Park and enhancement planting throughout the scheme.

1.4 Purpose and Structure of the Statement

This Statement outlines the context within which the application has been submitted, rationale for the proposed works, detailed assessment of the national and local planning policy considerations and justification for consent being granted by the LPA.

The PDAS is structured as follows:

- Section 2 of this Statement provides a description of the application site; including an overview of existing/surrounding land uses, the sites proximity to other settlements and designations and pertinent planning permissions;
- Section 3 provides a detailed description of the proposed development;
- Section 4 reviews the relevant national and local planning policies appurtenant to the application;
- Section 5 considers the key planning issues relevant to the proposed development; and,
- Section 6 provides a summary conclusion for the proposed development.

2 Application Background

2.1 The Application Site

As stated in Section 1 and illustrated in **Drawing 1000**, the application site is situated upon the eastern bank of the River Usk, in the Liswerry district of Newport. The city of Newport is situated upon the Severn Estuary, approximately 12km southeast of Cardiff. Newport has a population of approximately 150,000 and includes key transport infrastructure including the M4 to the north of the city, A48 and rail links.

The application site follows a linear formation, comprising a number of key application areas extending from Kingfisher Walk/Lysaght Avenue (National Grid Reference ST326866) at the northernmost extent, to Nash Sewerage Treatment Works (National Grid Reference ST335841) at its southernmost extent. Figure 2 below provides an extract of the **Site Overview Plan - 2000**, illustrating the geographical distribution of the development.

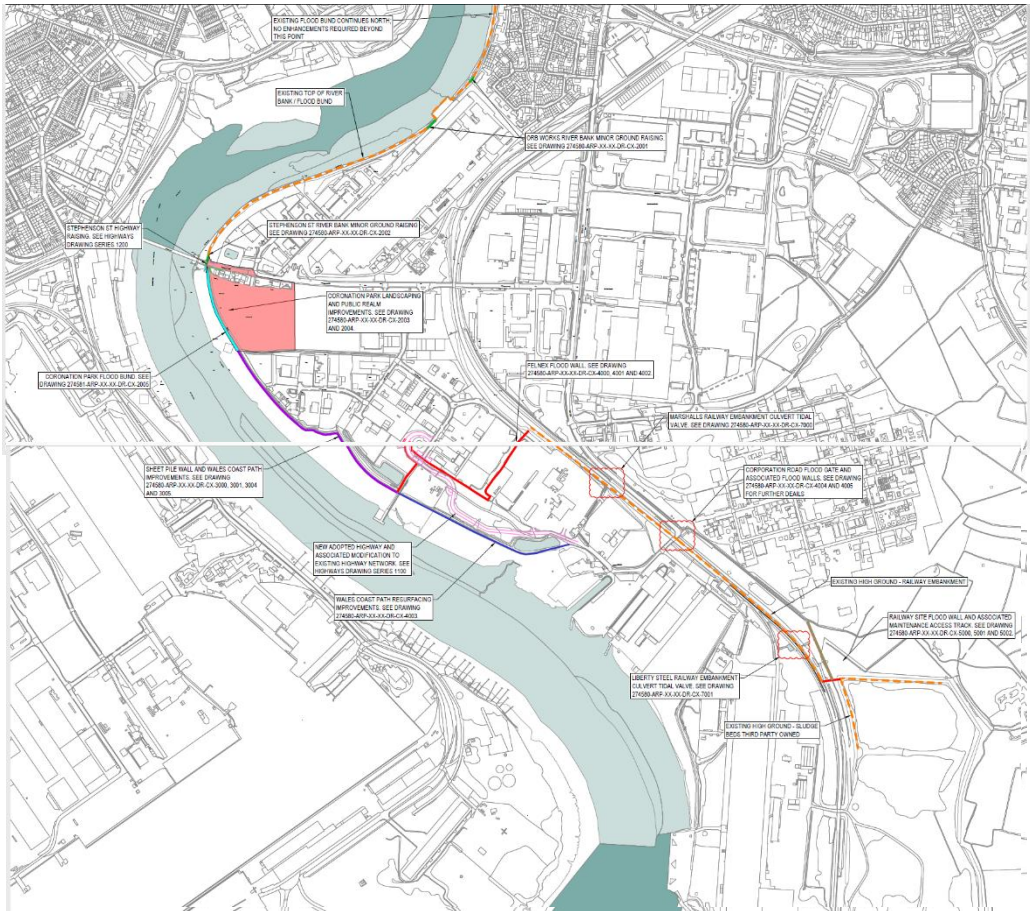

Figure 2 Extract of Site Overview Plan – 2000 illustrating the linear formation of the Stephenson Street Flood Defence Scheme.

At the northernmost extent of the scheme, the application site is characterised by large commercial premises including Orb Electrical Steels and residential properties at Lysaght Avenue. Stephenson Street is situated to the south, connecting the Newport Transporter Bridge to the A48 via Corporation Road to the west. The Newport Transporter Bridge is a Grade I Listed Structure which was opened in 1906 and remains one of only two functioning major transporter bridges in the UK. The bridge comprises three listed elements (ID references 3076, 17414 and 17415), relating to the Transporter Bridge and the eastern and western anchor chambers. As illustrated in Figure 3 below, the Transporter Bridge is highly prominent within the local landscape and provides long distance views of Coronation Park and the River Usk to the south.

Figure 3 Site context photos of the Grade I Listed Newport Transporter Bridge and Coronation Park.

The northern boundary of Coronation Park abuts Stephenson Street and is primarily used for recreational sports (including Newport Corinthians Football Club) and Newport City Dogs Home upon the western boundary. The existing park is functional in its character with minimal landscaping and planting within the public realm. In 2015 a row of large white or grey poplar trees to the west of the park were felled by NCC, due to their location on the flood embankment and the risk they posed to its structural integrity. As illustrated in Figure 3 above, the WCP Public Right of Way (PRoW) extends along the eastern bank of the River Usk atop an existing embankment of varying height and width.

At the south western boundary of Coronation Park, the prevailing land use alters to commercial and industrial use located at New Quay Road and Broad Quay Road. The site is crossed by overhead high voltage electricity pylons which bisect the proposed alignment of the sheet pile wall and upgraded WCP.

Hanson Concrete is situated upon the eastern bank of the River Usk and benefits from an aggregate conveyor and jetty structure which juts across the existing riverbank. The site comprises a timber stepped crossing of the Hanson Conveyor belt on the eastern bank of the River Usk. Land to the north comprising scrub would be developed to provide a ramped T-junction access appurtenant to the proposed flood relief road. The existing Hanson and Marshalls compounds within the Felnex Industrial Estate benefit from informal hardstanding road layouts

within the curtilage of their associated land parcels which connect to Corporation Road to the east and bounded by the River Usk and WCP to the west.

Corporation Road is a 'no-through road' benefiting from access to the highway network via a railway overbridge (National Grid Reference ST331854). Due to the presence of industrial sites along the River Usk, the WCP is diverted inland, following a parallel alignment to the north east of the existing railway track towards Liberty Steel. The Nash Wastewater Treatment Works (WwTW) is situated to the southern extent of the scheme, occupying an area of approximately 1,500m², adjacent to the Severn Power Station.

As outlined in the NCC Local Development Plan (LDP) constraints and proposals maps, the application site is situated immediately adjacent to European and National ecological designations including the River Usk SAC and River Usk (Lower Usk) SSSI. The eastern riverbank and application site are situated within an Archeologically Sensitive Area which also falls within Flood Zone C1. Although the vast majority of the application site sits within Flood Zone C1, elements at the southern extent of the scheme including Liberty Steel and Nash WwTW sit within Flood Zone B. The application site falls within the mineral safeguarding area and 'Rail and Wharves' designated area, as outlined in the NCC LDP.

As outlined in Section 1.3 of this Statement, the Stephenson Street FDS would comprise 6no. flood walls, refurbished embankments, localised ground raising, a sheet pile flood wall, 0.7km flood relief road and flood gate, mitigation planting and WCP enhancements extending to a cumulative area of 8.3ha. Section 3.1 of this Statement outlines each of the proposed works in order (north to south), including details, dimensions, and proposed finishes.

2.2 Optioneering

Optioneering and the development of the Outline Business Case (OBC) was undertaken to identify the preferred option and was submitted to Welsh Government in December 2018.

An OBC and optioneering was undertaken in August 2018 to examine the Stephenson Street Embankment. Table 1 below outlines the design options and the financial and non-financial considerations in determining the preferred option. Option E1 represented the strongest financial ranking and prevented encroachment onto the eastern bank of the River Usk which is designated as a SSSI and SAC. As such, the preferred option (E1) was developed further. As outlined in the OBC, for every £1.00 spent on the Stephenson Street FDS, the scheme would result in £20.20 being realised over the appraisal period. As such, the preferred option and additional flood defences would deliver upon the scheme objectives and provide a positive cost benefit ratio (CBR).

Table 1: Optioneering of design solutions for the Stephenson Street Flood Embankment

Solution	Description	Construction Cost (£)	Financial Ranking	Non-Financial Ranking	Commentary
E1	Engineered Bund: Raised crest level 0.65m above existing and 1V:3H slope.	1,974	1	1	Most cost-effective option and Preferred Option where land take inland achieved.
E3	Crest Wall: pre-cast concrete wall (typical height 0.5m) on top of existing embankment.	3,191	4	4	Design solution reliant upon the stability of the existing embankment.
E4	Combined bund and flood wall: bund and retaining wall behind.	6,497	5	5	Least preferred. Land take required and ongoing maintenance.
E5	Precast L Wall: precast sections to be provided below surrounding ground level for stability.	2,827	2	3	High land take and environmental impacts. Ongoing inspection and maintenance required.
E7	Sheet Piles: sheet pile wall to be constructed through the crest of the embankment with an upstand typically around 0.5m in height.	2,962	3	2	Low environmental risks, no land take and minimal maintenance.

2.3 Pre-Application Consultation and Advice

NRW undertook public consultation from September – October 2020 relating to the preferred option for flood defences and enhancements of Coronation Park and the WCP. Of the 40 responses made during informal pre-application consultation, 82.5% of participants outlined concerns relating to existing and predicted flood risk. Early designs for the Stephenson Street FDS were presented via the NRW consultation website which prompted unanimous support for enhancements to Coronation Park and the WCP, with 92.5% of respondents supporting the principle of flood defence infrastructure.

An Environmental Impact Assessment (EIA) Screening Opinion Request for the Stephenson Street FDS was submitted to NCC on 19 March 2020 which followed three previous iterations since 2016. The EIA Screening Opinion (reference 20/0305) confirmed that the proposed development does not constitute EIA development and that an Environmental Statement (ES) was not required, as outlined in the EIA Screening response.

NRW have engaged with all relevant landowners affected by the Stephenson Street FDS, relevant NCC departments and external bodies. Formal pre-application advice was provided by Mr Grant Hawkins on behalf of NCC on 10 August 2018 under reference P/18/00109. Pre-application advice provided outlined that key issues relating to the scheme included: ecology, heritage, PRoW networks, landscape impacts, land contamination and continuation of adjacent wharves. The application site was noted to interact with a SAC and therefore require a Habitats Regulation Assessment (HRA). In addition, the works would be

sited within the setting of the Grade I Listed Transporter Bridge and within an archaeologically sensitive area. As a result, NRW have maintained continued dialogue with both CADW and The Glamorgan Gwent Archaeological Trust (GGAT).

The pre-application response provided by NCC outlined that the development proposals were considered to be acceptable in principle due to the flood management benefits, however, a Flood Consequences Assessment (FCA) should be submitted in support of the application. The site is located within the River Usk SAC and Site of Importance for Nature Conservation (SINC) and adjacent to a SSSI and therefore a HRA has been submitted in support of the application. It is a legal requirement that a PRoW should be completely unobstructed and therefore a temporary closure/diversion order is required to facilitate development. A Construction Transport Management Plan (CTMP) was outlined as a submission deliverable, including details on vehicle types, movements, access arrangements and environmental management plans. Overall comments provided by NCC outlined that the principle of development was acceptable, subject to the provision of the aforementioned information at the full application stage.

2.4 Relevant Planning History

The following planning applications/EIA screening requests are considered to be relevant to the determination of this application and have been considered during the design of the proposed works:

Table 2: Applications relevant to the proposed development

Application Reference	Description of Development	Decision	Date Issued
20/0305	EIA Screening for improvement works to flood defence embankment.	ES Not Required	21/05/2020
20/0750	Prior notification for 20m high phase B telecommunications monopole and associated equipment.	Prior Approval Not Required	09/10/2020
20/0748	Erection of silos and de-dusting building, extension to rail unloading facility, new above ground conveyors and ancillary development.	Awaiting Decision	Pending Consideration
20/0059	Erection of raised ramp structure and handrail and associated works for formalisation of cycle/pedestrian pathways affecting PRoW 386/4/1.	Granted with Conditions	28/07/2020
19/1164	Repair and restoration of Newport transporter bridge, demolition of existing visitor centre, provision of new expanded visitor facilities, new lighting scheme and associated landscaping works. Conservation of the engineering structure of the bridge, plus the restoration of ancillary elements including the gondola, motor house, anchor houses and anchor cables. Design work including the analysis of the structure and the specific action of repairs to the structure and ancillary components. Affecting public right of way Newport coastal path 403/2/1.	Granted with Conditions	30/03/2020
19/0703	Demolition of existing industrial units and construction of new industrial units for B2 (General Industrial) use.	Granted with Conditions	06/02/2020
18/1088	Partial demolition of existing rail freight depot and construction of replacement extension and repositioning of access ramp.	Granted with Conditions	31/07/2019

Application Reference	Description of Development	Decision	Date Issued
18/0016	Enclosure of area of park and erection of fencing for provision of dog exercise/play area to serve existing kennels.	Granted with Conditions	09/03/2018
18/0579	Proposed extension to existing unit for 2no. vehicle repair bays and proposed fencing.	Granted with Conditions	20/09/2018
18/0532	EIA Screening Opinion for flood works consisting of bund raising and sheet piling.	ES Not Required	25/07/2018
17/1010	Creation of access onto Corporation Road.	Granted with Conditions	15/03/2018
16/0364	EIA Scoping Opinion for proposed improvement works to flood defence embankment.	ES Not Required	02/01/2018
16/0171	Screening opinion for flood defence works consisting of bund raining and sheet piling between the Transporter Bridge and Bird Port (East Bank of the River Usk). (This scheme)	ES Not Required	15/03/2016
16/1140	Erection of 2no. industrial storage buildings along with associated ground works, access, car parking and hard and soft landscaping.	Granted with Conditions	10/07/2017
16/0585	Proposed tank farm comprising 9no. tanks each twenty metres high and up to twenty-five metres in diameter and associated site building and infrastructure.	Granted with Conditions	26/04/2017
14/0061	Installation and construction of a hydrogen generation plant.	Granted with Conditions	06/06/2014
11/0530	Demolition of Dutch barn and tegula plant and erection of production unit with offices, amenities block, ticket office/gate house and additional covered aggregate storage bays.	Granted with Conditions	07/06/2012
10/1102	Erection of combined heat and power plant together with 15m high chimney stack.	Granted with Conditions	03/12/2010
08/0296	Biotreatment plant to treat effluent wastewater from two process plants comprising 3 balance tanks and bioreactor.	Granted with Conditions	29/05/2008
08/1412	Erection of 2no. wind turbines, access tracks, temporary construction compounds, switchgear house, hardstanding area and cabling.	Granted with Conditions	19/01/2009
06/1053	Erection of 60m high anemometry mast and associated anchors and guy wires.	Granted with Conditions	11/10/2006
06/1466	Erection of 2no. wind turbines, monitoring mast and access tracks.	Granted with Conditions	29/08/2007

3 The Proposed Works

The Stephenson Street FDS comprises the proposed construction of flood embankments, sheet pile and reinforced concrete flood walls, enhanced culverts, a highway flood gate and a 0.7km flood relief road. The proposed works are illustrated in greater detail in **Drawings 2001 – 7001** and their geographical distribution demonstrated on the **Site Overview Plan – 2000**. A brief overview and typical dimensions are outlined in Table 3 below.

Table 3: Summary of proposed works

Drawing(s)	Defence and Location	Works Proposed	Length (m)	Typical Height (m)	Typical Width (m)
2001	Orb Works Riverbank Minor Ground Raising – south of Kingfisher Walk and adjacent to Orb Electrical Steels.	Localised ground raising at two locations to tie into existing Jetty Structure Wall and ground levels with 1:2 slope and 100mm of seeded topsoil.	34.5m and 14.7m	0.4m	>1m crest width
2002	Stephenson Street River Bank Minor Ground Raising – land abutting the eastbound carriageway of Stephenson Street, immediately adjacent to the Newport Transporter Bridge.	Localised ground raising of existing river bank adjacent to Transporter Bridge to tie into existing verge and bank with 100mm seeded topsoil and 1:2 slope.	14.3m	0.4m	>1m crest width
2003, 2004, 2005	Stephenson Street Flood Embankment and Upgrade to WCP – Western boundary of Coronation Park.	Upgrading to the existing Stephenson Street flood embankment along the eastern boundary of Coronation Park. Works would include the raising and widening of the existing embankment with associated enhancement landscaping and WCP enhancements. Enhancements to the existing WCP would include the stepped and seating areas with associated landscaping along the embankment crest with variable crest widths and slope planting. The proposed crest would be finished with textured surfacing, lateral kerbs and a kissing gate at the northern boundary abutting Stephenson Street.	230m	2.5m	2.5m – 8m crest width
2003	Coronation Park Landscaping and Planting – Coronation Park, south of Stephenson Street.	Comprehensive enhancement and mitigation plating throughout Coronation Park inclusive of benches, bins, and concrete step areas. Inclusion of	N/A	N/A	N/A

Drawing(s)	Defence and Location	Works Proposed	Length (m)	Typical Height (m)	Typical Width (m)
		heritage and ecological interpretation boards to Stephenson Street embankment with grassland and ornamental shrub planting to the southern boundary, inclusive of 3no. urban forests.			
3000, 3001, 3004	Sheet Pile Wall and Embankment with upgraded WCP, including improved new metal stepped access spanning the Hanson Conveyor Belt – River Usk riverbank and WCP PRoW.	Construction of sheet pile wall with Corten steel copings and textured resurfacing/kerbing details to the WCP. Upgrading of the existing WCP would include a variable width crest, enhancement planting, seating, and observation areas. Provision of an improved stepped metal access spanning the Hanson Conveyor would be provided to improve PRoW accessibility.	292m	0.8m	1.6m – 2.9m crest width
4000, 4001, 4002	Reinforced Concrete Flood Wall at Felnex Industrial Estate – Land comprising the lateral edges of East Bank Road, new proposed flood relief road and Hanson Conveyor crossing the Felnex Industrial Estate.	Construction of a reinforced concrete flood wall adjacent to the Hanson Conveyor, extending to the site of the proposed T-junction access of East Bank Road. The flood wall would tie into an embankment earthworks at the south western extent of the carrousel road junction which would comprise two landscaped 4m wide crests adjacent to the attenuation pond. A secondary (larger) wall would extend from the proposed junction along the flood relief road and East Bank Road.	Flood Walls - 97.5m and 495m Embankments - 98m and 59m	2.5m	0.4m
1101, 1102 and 4006	Flood Relief Road – Land comprising the Felnex Industrial Estate, Hanson Aggregates and Marshalls sites connecting East Bank Road to the north and Corporation Road to the south.	Construction of a 0.7km single carriageway flood relief road connecting from East Bank Road adjacent to KDK Metals Industrial Unit to Corporation Road adjacent to Marshalls estate. Ramped access and T-Junction access to be provided for ingress and egress at East Bank Road with pedestrian footways. Enhancements to the CEMEX site entrance would	0.7km	NA	7.3m

Drawing(s)	Defence and Location	Works Proposed	Length (m)	Typical Height (m)	Typical Width (m)
		include a wider turning splay and extension to dropped kerbs.			
4003	Wales Coastal Path Resurfacing – Land situated to the west of Hanson Aggregates and East Bank Road, incorporating the WCP PRoW on the eastern bank of the River Usk.	Resurfacing of Wales Coast Path with compacted Hoggin and Concrete edgings. Works would include a replacement metal stepped access improving accessibility of the WCP at the existing Hanson Conveyor site.	540m	N/A	1.5m – 2m
4004 and 4005	Corporation Road Flood Gate and Walls – Railway overbridge at Corporation Road, south of WCP.	Construction of two reinforced flood walls adjacent to the Corporation Road railway overbridge and installation of sliding highway flood gate which would run flush to the existing railway embankment and include pedestrian stepped access.	12.8m and 16.4m	1.2m	0.35m
5000, 5001, 5002	Railway Flood Wall and Access Track – land comprising the existing WCP to the north east of the existing railway line and land immediately adjacent to the embankment slope.	Construction of a reinforced concrete flood wall adjacent to the existing railway embankment with non-return tidal flap valve at the base. Temporary resurfacing and widening of the WCP to be reinstated upon completion of the flood wall 'Type A' and extension of the track 'Type B' surfacing to remain in perpetuity.	Flood Wall - 36m Access Track – 405m	Flood Wall - 2.4m	Flood Wall - 0.4m Access Track – 5m
7000	Marshalls Railway Embankment Culvert with access and maintenance hardstanding – Railway embankment situated to the northern boundary of Marshalls.	Installation of reinforced concrete culvert chamber with non-return duckbill tidal valve. Provision of 15m² concrete hardstanding to the west of the culvert of maintenance and access with reinstated fence line.	5.5m inclusive of tidal valve.	4.5m	3.7m
7001	Liberty Steel Railway Embankment Culvert – Railway embankment situated to the north eastern boundary of Liberty Steel.	Installation of reinforced concrete culvert chamber with a non-return duckbill return valve. Additional provision of a gravel (type B) access and construction tracks at railway embankment.	5.5m inclusive of tidal valve.	4.5m	3.7m

Drawing(s)	Defence and Location	Works Proposed	Length (m)	Typical Height (m)	Typical Width (m)
6000, 6001	Nash Flood Wall and Access Track – Nash Sewerage Treatment Works.	Construction of a reinforced concrete flood wall to the north of the existing Nash site with raised permanent access track (subject to landowner agreement).	Flood Wall – 31.8m Access Track – 173m	Flood Wall – 1.5m Access Track – 0.6m	Flood Wall – 0.35m Access Track – 6m

3.1.1 Orb Works Riverbank Minor Ground Raising

Localised ground raising would be provided in two locations upon the eastern bank of the River Usk, north of Stephenson Street. As illustrated in **Drawing 2001**, the southern site would measure 34.5m in length and tie into the existing ground levels at the jetty structure wall. The proposed works would maintain a maximum bank height of 9.35m above ordinance datum (AOD) to provide additional protection and improve structural integrity. Ground raising would ensure a typical bank height of 0.4m, relative to adjacent ground level and with a slope gradient not exceeding 1:2, finished with seeded topsoil. Upon completion, the existing chain link fencing would be reinstated to prevent unauthorised access to the River Usk.

To the north, the proposed development would provide further ground raising to achieve a consistent 9.35m AOD bank height with a reinstated timber fence. Existing CCTV cameras to the south of the site would be retained and protected during the construction of the proposed development. Each extent of the area of ground raising would tie into the existing topography and seeded topsoil slopes not exceeding a gradient of 1:2 would be achieved.

For further details, sections, and chainage information, please refer to **Drawing 2001**.

3.1.2 Stephenson Street Riverbank Minor Ground Raising

Ground raising would be provided to the immediate north of Stephenson Street, abutting the existing footway, adjacent to the Transporter Bridge, as illustrated in **Drawing 2002**. The proposed works would require vegetation and fence line removal to ensure a consistent embankment height measuring between 9.3m and 9.35m AOD, spanning a total width of 14.3m. Raised ground levels would tie into the existing topography at both extents of the flood defence and achieve a slope profile not exceeding 1:2. The proposed crest and slopes would be completed with seeded topsoil to ensure that ground raising integrates with the existing character of the site. A new fence and pedestrian gate would be provided upon completion of the works.

For further details, sections, and chainage information, please refer to **Drawing 2002**.

3.1.3 Stephenson Street Embankment and WCP Upgrade Works

The existing Stephenson Street flood embankment would be raised and widened along the western boundary of Coronation Park adjacent to the River Usk, accommodating the WCP. The upgraded embankment would enhance the existing user experience of the WCP through resurfacing works and public realm improvements, as demonstrated by the addition of embankment steps, seating and enhancement planting at the mid-section of the crest providing views across the River Usk and the Grade I Listed Transporter Bridge. The proposed development would include kissing gates at the northern section of the WCP abutting Stephenson Street following stakeholder requests during PAC. Design inspiration, as set out in Figures 4 and 5 below and the submitted **Landscape Vision**, provides context to the resting areas which would be provided upon the WCP. The existing alignment of the PRoW (403/2/1) network would be slightly altered to follow the embankment crest. As outlined in the submitted Transport Statement, a Diversion Order has been submitted to facilitate the amended PRoW alignment.

Figure 4 Design inspiration of proposed seating and resting locations to be provided upon the WCP alignment.

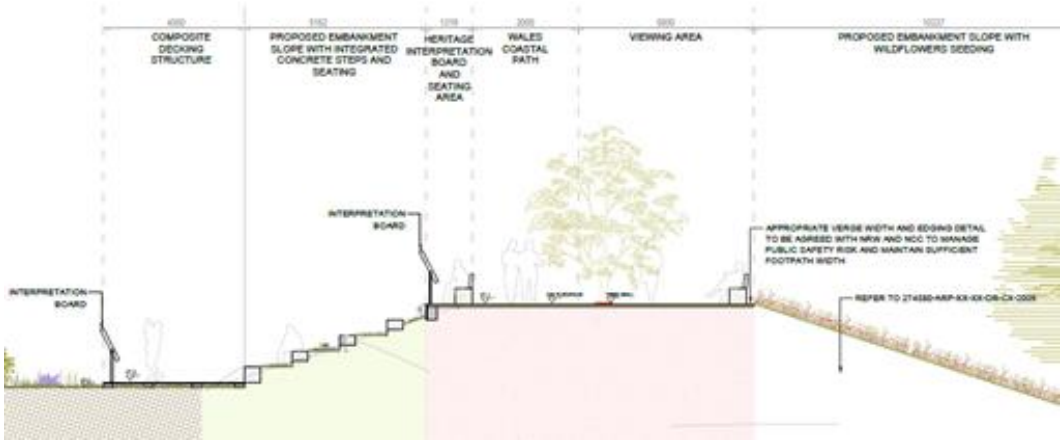

Figure 5 Section B-B of the Stephenson Street embankment inclusive of stepped observation areas.

As illustrated in **Drawings 2003-2005**, the upgraded Stephenson Street flood embankment would extend approximately 230m from the highway to the north to the south western boundary of Coronation Park. At the northern extent of the embankment, the crest would measure 2.5m in width with a 1.2m pedestrian balustrade due to a topographical difference between the WCP and Newport City Dogs Home below. To the south, the embankment would extend to 8m in width, inclusive of steps and public realm furniture. The proposed crest materials would include textured surfacing and lateral kerbing to allow access for all PRoW users. Slopes would be finished with seeded topsoil and wildflower planting to enhance the character and setting of Coronation Park. The proposed embankment crest and observation areas would be provided with 9no. benches, bins and interpretation boards indicative of relevant heritage and ecological assets.

Further details, sections and chainage information can be found in **Drawings 2003-2005**.

3.1.4 Coronation Park Landscape and Planting

Enhancement planting is proposed within Coronation Park, as illustrated in **Drawing 2003** and supplemented by the submitted **Planting Schedule**. The proposed landscape planting would include the provision of native species trees along the northern boundary of the park and adjacent to Newport City Dogs Home boundary fence line. Proposals would include the provision of 11no. benches within the southern landscaped area, similar to those depicted in Figure 6 below and inclusion of concrete steps also.

Figure 6 Landscaped bench areas similar to those proposed in Coronation Park.

The proposed development would include relocated boulders from the northern boundary within the pedestrian trails as well as 3no. urban forest areas with grassland, ornamental shrubs and wildflower meadow planting. The proposed planting would form part of the NRW Centenary Trees Project which would provide focused tree planting to commemorate those who died during World War I.

Figure 7 below demonstrates the proposed tree planting layout to the Stepheson Street Embankment and Coronation Park, as well as general upgrades to the WCP.

Figure 7 Visualisation of proposed tree planting along the Stephenson Street Embankment and Coronation Park.

3.1.5 Sheet Pile Flood Wall and WCP Upgrade Works

The WCP Sheet Pile Wall would provide flood protection to industrial land uses to the south of Coronation Park, extending approximately 292m in length. As illustrated in **Drawings 3000, 3001** and **3004**, the proposed sheet pile wall would measure 0.8m in height upon the boundary of the River Usk SSSI and SAC. The proposed wall would be finished with flat top Corten Coping to allow WCP users to lean/rest and observe the River Usk and Grade I Transporter Bridge to the north. Corten metal materials would reflect the industrialised landscape in which the proposed works would sit within. The existing crest ranges in width from 1.6m to 2.9m and would be finished with textured surfacing and lateral kerbing to ensure accessibility for all PRoW users, in accordance with Welsh Government guidance[1]. Materials would appear weathered, including Corten sheet pile walls which would assimilate with surrounding area, as illustrated in Figures 8 and 9 below.

Examples of Corten Steel and other materials proposed within the Stephenson Street FDS are outlined in the **Moodboard (Appendix A).**

[1] https://gov.wales/sites/default/files/publications/2018-09/design-and-access-statements.pdf

Figure 8 Wales Coast Path enhancements and observation areas including Corten sheet pile walls.

Figure 9 Example of Corten sheet piling and coping finishes proposed along the WCP.

The proposed development would include the construction of an improved metal stepped access along the WCP at the site of the Hanson Conveyor (National Grid Reference ST324855). The proposed works would prevent severance of the PRoW network and constitute an inclusive design for vulnerable users which would enhance the existing stepped access.

For further details, sections, and chainage information, please refer to **Drawings 3000, 3001** and **3004**.

3.1.6 Felnex Reinforced Concrete Flood Wall

The Felnex Industrial Estate flood defence wall would provide two reinforced concrete stem walls. The southern wall would extend 97.5m from the Hanson Aggregate Conveyor and Jetty Structure to the proposed ramped carrousel junction access to East Bank Road, as shown in **Drawings 4000** and **4001**. The proposed flood wall would tie into embankment earthworks at the south western extent of the carrousel junction which would measure 98m and 59m in length with a 4m crest, as illustrated in **Drawing 4000.** The secondary wall would extend 495m in length from the T-junction access along the northern side of the proposed flood relief road and south of the existing East Bank Road. Each wall would measure 2.5m in height and 0.4m in width with 3.3m wide foundation structure below ground level, as shown in **Drawing 4002** and Figure 10 below. A metal stepped overbridge would be provided to span the existing Hanson Conveyor and ensure connectivity of the PRoW network.

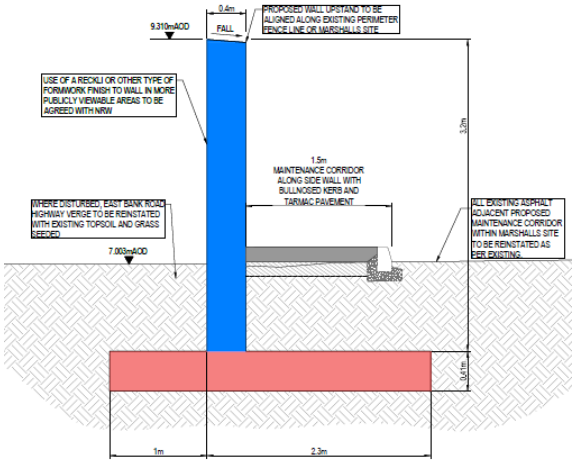

Figure 10 Proposed section of Felnex Reinforced Concrete Flood Wall.

For further details relating to the flood defence alignment, sections and chainage, please refer to **Drawings 4000, 4001** and **4002**.

3.1.7 Flood Relief Road, Corporation Road

Construction of a flood relief road connecting East Bank Road and Corporation Road to be used in the eventuality of flood risk events necessitating the closure of the proposed flood gate at Corporation Road railway overbridge. The proposed development would allow for a means of escape for occupiers and employees of industrial units situated upon the eastern bank of the River Usk during flood events. The single carriageway flood relief road would be approximately 0.7km in length and approximately 7.3m in width. The proposed highway would include a ramped T-junction access onto East Bank Road at the western extent of the highway.

The proposed flood relief road would benefit from flood attenuation ponds adjacent to the semi-circular ramped access at the western extent of the highway

and at the southern extent. The proposed relief road would provide 6no. vehicular access points to various Marshalls and Hanson Aggregate sites situated along the alignment of the highway network, as illustrated in **Drawings 1101** and **1102**. Following PAC, enhancements to the CEMEX entrance/exit have been proposed to facilitate improved left hand egress during flood gate closures resulting in a wider splay and dropped kerb extension illustrated in **Drawing 4006.**

3.1.8 Wales Coast Path Resurfacing

Resurfacing works to a 540m stretch of the WCP is proposed along the eastern bank of the River Usk, as illustrated in **Drawing 4003**. The proposed resurfacing works would comprise compacted Hoggin and concrete lateral edges to the existing crest, typically between 1.5m – 2m in width, as illustrated in Figure 11 below. No further widening or remedial works to the sloped embankment would be provided at this location. Compacted Hoggin surfacing would improve access along the PRoW network. As illustrated in **Drawing 3001**, the proposed development would provide an improved metal stepped crossing of the existing Hanson Conveyor.

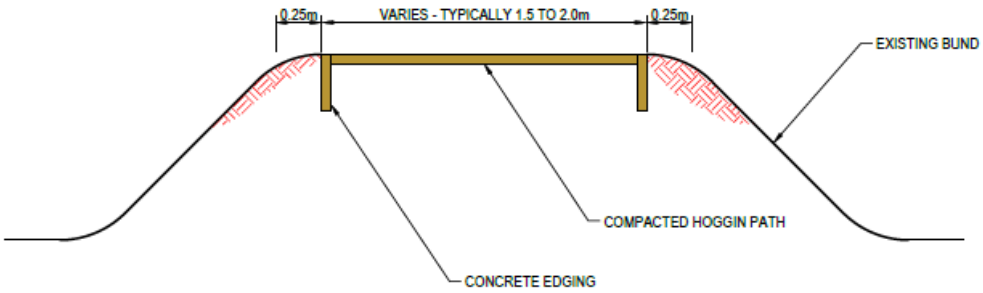

Figure 11 Typical section of resurfaced WCP, inclusive of compacted Hoggin surfacing.

Details regarding the alignment and material proposed are outlined in **Drawing 4003.**

3.1.9 Corporation Road Flood Gate and Flood Walls

The proposed development would provide a sliding flood gate below the railway overbridge at Corporation Road to prevent flood waters from encroaching further inland, as shown in **Drawing 4004.** Further to the proposed flood gate, the development would include the construction of two reinforced concrete flood walls to the north and south of Corporation Road, measuring 12.8m and 16.4m in length respectively. The proposed development would include the provision of stepped access across the proposed flood defence walls in the eventuality that the flood gate is in operation. The proposed flood gate would measure approximately 10m in width and would be manoeuvred into place though sliding operations including a manual winch and hydraulic hand pump. All mechanisms required to operate the proposed flood gate would be housed within a secure anti-vandalism casing to ensure against unauthorised use.

As illustrated in **Drawing 4005**, the proposed flood walls would each measure 1.2m in height and 0.35m in width, with a below ground level foundation base of

2.35m in width. Exposed reinforced concrete finishes would be achieved on all flood walls proposed through the scheme.

Please refer to **Drawings 4004** and **4005** for additional information relating to flood wall alignments, height, and proposed flood gate specifications.

3.1.10 Railway Flood Wall and Access Track

The railway flood wall and access track would incorporate an existing stretch of the WCP and provide a new 'Type B' access track extending to a combined length of 405m with a typical width of 5m. The existing Type A access track (WCP) would be reinstated to its existing state upon completion of the proposed works and Type B (extension) would be retained in perpetuity for ongoing maintenance and access of the railway flood wall. Further details regarding the alignment and arrangements (ongoing maintenance) are outlined in **Drawings 5000, 5001** and **5002.**

At the south eastern extent of the access track, the Stephenson Street FDS would include a reinforced concrete flood wall measuring 36m in length and 2.4m in height. An opening is proposed within the base of the flood wall to facilitate a non-return tidal flap valve to be installed to minimise the flow of floodwater during a flood event, as illustrated in Section C-C and Long Section A-A in **Drawing 5000.**

Further details regarding general arrangements, alignment and sections is outlined in **Drawings 5000, 5001** and **5002.**

3.1.11 Marshalls Railway Embankment Culvert

The proposed development would include a tidal non-return valve and culvert enhancement to the railway embankment measuring approximately 4.5m in height and 3.7m in depth. The cumulative depth, inclusive of the duckbill non-return valve would be approximately 5.5m and would sit within the channel of an existing waterbody. The proposed valve and culvert works would not allow flood water to pass through the existing waterbody and embankment in the case of a flood event.

A 15m² area of hardstanding would be provided to the west of the culvert with a reinstated fence line at the toe of the existing railway embankment, obscured from the public realm. For further information regarding sections, general arrangements, and materials, please refer to **Drawing 7000.**

3.1.12 Liberty Steel Railway Embankment Culvert

The proposed development would include a non-return duck bill valve and enhanced culvert within the existing railway embankment. As outlined in **Drawing 7001,** the non-return valve is required to prevent the flow of flood water through the culvert during a flood event. Sectional drawings indicate that the proposed culvert would be covered and hinged/lockable, measuring 4.5m in height and 3.7m in width. Inclusive of the non-return tidal valve, the proposed

development would protrude 5.5m from the existing brick-built headwall within the existing watercourse.

For further information regarding sections, general arrangements, and materials, please refer to **Drawing 7001.**

3.1.13 Nash Industrial Estate Flood Wall and Access Track

The proposed development would include the construction of a reinforced concrete flood wall to the north of the Nash Industrial Estate, as illustrated in **Drawing 6001**. The proposed flood wall would measure 31.8m in length and 2.7m in height (8.0m AOD) with a 0.35m depth. Below ground level, the proposed flood wall would benefit from a 2.1m wide foundation base at a depth of 0.7m. As shown in Section B-B of **Drawing 6000**, the proposed wall would provide an opening for a 0.5m diameter pipe and rip rap layer to the southern extent of the wall to prevent erosion.

An access track would be provided from the retaining/flood wall structure to the Nash Industrial Estate measuring approximately 173m in length. Typical sections outlined in **Drawing 6001** demonstrate that the access track would measure 6m in width and extend 0.6m above existing ground level. As stated in Table 3 above, the proposed access track would be permanent, subject to landowner approval.

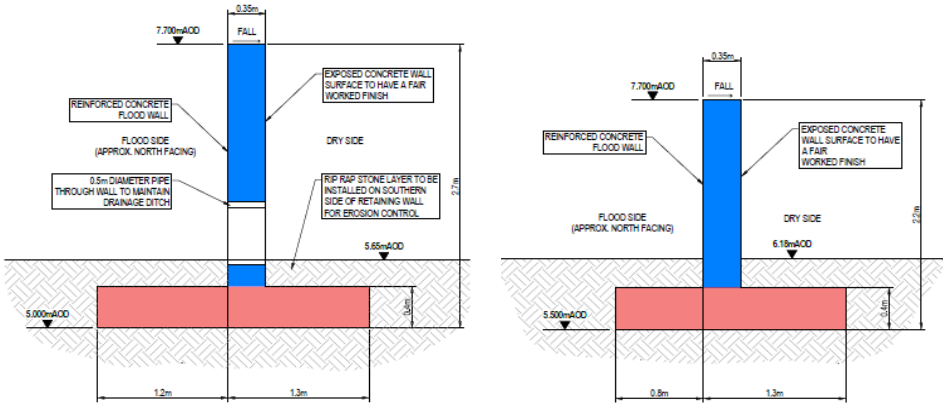

Figure 12 Sections B-B and C-C of Nash Industrial Estate Flood Wall, north of the Nash Sewerage Treatment Works.

Further details regarding sections, alignment and general arrangements of the application site are provided in **Drawings 6000** and **6001**.

4 Planning Policy Review

4.1 National Planning Policy

Section 70(2) of the Town and Country Planning Act 1990 and Section 38(6) of the Planning and Compulsory Purchase Act 2004 require that 'planning applications are to be determined in accordance with the Development Plan unless material considerations indicate otherwise'.

4.1.1 Future Wales – The National Plan 2040

The Future Wales – the National Plan 2040 constitutes the national development framework which sets out the direction for development in Wales to 2040. The development plan sets out the strategy for addressing key national priorities including climate resilience, developing strong ecosystems, and improving the health and well-being of communities.

The National Plan states that changes in the climate and weather patterns will have a significant impact on well-being on both current and future generations. Increased temperatures and extreme weather events caused by climate change will put additional pressure on ecosystems, infrastructure, the built environment and social, economic, and ecological resilience. By 2050, it is projected that average summer temperatures will increase by 1.34 degrees and winter precipitation increasing by 5%.

Newport is situated within the 'South East' Regional Growth Area, as identified by the National Plan 2040. Policy 1 of the plan states that development and growth in National Growth Areas should be of an appropriate scale and support local aspirations and needs.

Policy 8 - Flooding states that flood risk management that enables and supports strategic growth and regeneration in National and Regional Growth Areas will be supported.

Policy 9 – Resilient Ecological Networks and Green Infrastructure requires developers to ensure the enhancement of biodiversity, the resilience of ecosystems and provision of green infrastructure. In all cases, action towards securing the maintenance and enhancement of biodiversity (to provide a net-benefit), the resilience of ecosystems and green infrastructure assets must be demonstrated as part of development proposals.

4.1.2 Planning Policy Wales: Edition 11

Planning Policy Wales: Edition 11 (February 2021) (PPW11) sets out the land use planning policies of the Welsh Government. PPW11 provides advice on a wide range of issues and is supported by a number of Technical Advice Notes (TANs) which contribute toward the delivery of improved social, economic, environmental, and cultural well-being in Wales. The Welsh Government is committed to sustainable development and PPW11 states that the planning system shall provide a presumption in favour of sustainable development.

PPW11 and the National Plan 2040 set out how the planning system at a national, regional, and local level should assist in delivering sustainable development in Wales.

Development should demonstrate suitable adaption to the existing and predicted effects of climate change. Challenges to Wales in terms of adaption include the impacts of flooding and coastal change to communities, businesses, and existing/planned infrastructure, as well as, the risk to health and well-being.

Green infrastructure is capable of providing several functions which provide multiple benefits for social, economic, and cultural as well as environmental resilience. Benefits by improving resilience can include positive well-being, flood management and climate change mitigation.

Paragraph 6.6.22 of PPW11 states that the climate emergency is likely to increase the risk of flooding as a result of sea-level rises, increased storminess, and more intense rainfall. Development proposals should consider the potential consequences of flooding, as well as the likelihood of an event occurring.

PPW11 states that the use of Flood Defence Maps and FCA should be used to assist the understanding of how natural and manmade defences work as integral components of places and provide a means by which the cumulative effects of development can be understood.

Paragraph 6.6.25 outlines that development proposals should reduce and must not increase flood risk arising from river flooding on and off the application site.

In areas of flood plain currently unobstructed or undeveloped, where water flows in time of flooding, built development and obstructions should be wholly exceptional and limited to essential transport and/or utilities infrastructure.

Paragraph 6.6.28 states that new or improved flood defences in riverside locations should be carefully planned, ensuring environmental effects are taken account of. Flood defence works can provide opportunities to achieve wider social, economic, and environmental benefits, which should be maximised wherever possible. Where possible, nature-based solutions should be the preference to deliver habitat creation, biodiversity enhancement and water quality improvements.

4.1.3 Technical Advice Note 5: Nature Conservation and Planning (2009)

Wildlife and its habitats are of fundamental importance to our future well-being and prosperity because a rich and diverse environment supports a long-term sustainable economy and contributes to a healthier and happier society. Biodiversity is an important indicator of sustainable development. Biodiversity and geodiversity add to the quality of life and local distinctiveness.

Section 2 of TAN5 outlines that the planning system in Wales should integrate nature conservation into all planning decisions, provide a net benefit for bio-diversity conservation with no significant loss of habitats and plan to accommodate and reduce the effects of climate change.

The proposed development should identify at an early stage the nature conservation interests likely to be affected and the likely significance of impacts. It should ensure that impacts of projects likely to have a significant effect on the environment are thoroughly investigated, understood, and considered.

European Sites are defined in Regulation 10 of the Habitats Regulations which include Special Protection Areas (SPAs), SACs and Candidate Special Areas of Conservation (cSACs).

Nationally designated sites include National Nature Reserves (NNRs), SSSIs and Marine Nature Reserves (MNRs).

4.1.4 Technical Advice Note 12: Design (2016)

Welsh Government is strongly committed to achieving the delivery of good design in the built and natural environment which is fit for purpose and delivers environmental sustainability, economic development, and social inclusion. Design is defined as:

"the relationship between all elements of the natural and built environment. To create sustainable development, design must go beyond aesthetics and include the social, environmental and economic aspects of the development, including its construction, operation and management, and its relationship to its surroundings."

Section 4.13 outlines that movement and ease of access for all should be appraised in designing scheme with a view to support a shift from car use to walking, cycling and public transport. Consideration should be given to the volume and relative ease of pedestrian movements, including those with mobility and sensory impairments.

As outlined in Section 5.3.3, the Quality Act 2010 makes it unlawful to discriminate against disabled people. Developments should ensure that disabled persons are not disadvantaged through the proposed design.

Section 5.4.10 suggests that to effectively adapt to the effects of climate change, attention should be attributed to the ways in which design can minimise and manage impacts. This includes:

- An awareness and appreciation of the current and future effects of climate change;
- Responding to the effects of climate change through the structure and use of materials;
- Ensure that design solutions do not constrain current or future opportunities to adapt or a developments vulnerability to climate change; and,
- Recognise the relationship to more strategic responses to climate change such as flood risk and drainage.

A high-quality public realm can make a unique contribution to a stimulating environment and can be the focus for community activity. Carefully designed and

imaginative use of surfacing, changes in level, enclosure, lighting, street furniture and planting will enhance the overall environment and define its 'sense of place'.

Section 5.13.3 states that creating space for biodiversity can enhance the ability of developments to adapt to changes in local environmental conditions over the lifetime of the built development which may result from climate change.

4.1.5 Technical Advice Note 15: Development and Flood Risk (2004)

Technical Advice Note 15 (TAN15) provides technical guidance in relation to development and flooding and sets out the precautionary framework to guide planning decisions in respect of development in areas at high risk of flooding. It provides guidance on how to fully assess flood consequences and how to design and implement sustainable development.

Section 2.3 of TAN15 states that at least 140,000 properties in Wales (12% of the total housing stock) are at risk of from river and coastal flooding, arising from changes in river hydrology and human activity in land management. The primary causes of flooding include high rainfall events which result in watercourse capacity being exceeded by capacity of its associated catchment. Other factors can include human activity including development within the catchment and lack of maintenance of flood defences.

An update to TAN15 is currently being consulted on and may be adopted during the determination of the submitted application. The TAN15 update aims to:

- Replace the development advice map with a new Wales flood map;
- Place a greater emphasis on the Local Development Plan (LDP) and the value of strategic flood consequences assessments (FCA);
- Integrate guidance on coastal erosion and flood risk issues in TAN15; and,
- Provide guidance for regeneration initiatives affecting communities in flood risk areas.

4.1.6 Technical Advice Note 16: Sports, Recreation and Open Space (2009)

Section 4.13 states that provision for the management and maintenance of public open space, sport and recreational facilities, including paths and lanes which facilitate walking and cycling, should be a consideration by local planning authorities in the determination of planning applications. Maintaining safe, attractive facilities and areas of open space is a fundamental aspect of long-term management, to minimise environmental impact, help meet the Assembly Government's objectives for sustainable development, and to address issues related to climate change.

4.1.7 Technical Advice Note 18: Transport (2007)

Integration of land use planning and development of transport infrastructure plays a key role in addressing environmental aspects of sustainable development such as climate change. Sustainable development should be sought through:

- ensuring that transport infrastructure or service improvements allow existing networks to perform their function and sufficiently accommodate future demand;
- encourage good quality design of streets and provide a safe public realm with a distinct sense of place; and,
- promoting cycling and walking.

Paragraph 5.4 outlines that transport infrastructure should contribute to a sense of place and should have five principle functions: place, movement, access, parking and utilities. New junction arrangements should provide adequate visibility and should avoid, where possible, the requirement for drivers to make a three-point turn.

LPAs should promote walking and cycling networks wherever possible and should adopt the following principles; ensure pedestrian/cycling routes are safe and inclusive, adopt adequate pavement widths, lighting and desire lines, support the use of public rights of way (PRoWs) and identify and protect existing routes, as set out in paragraph 6.2 and 6.4.

4.1.8 Technical Advice Note 24: The Historic Environment (2017)

TAN24 outlines that Applicants should demonstrate accordance with the 'well-being goals' set out in the Well-being of Future Generations (Wales) Act 2015. The well-being goals include achieving 'a Wales of vibrant culture and Welsh language' which is described as 'a society that promotes and protects culture, heritage and the Welsh language'. Development proposals should serve to conserve or enhance the character and setting of cultural/heritage assets.

Section 1.9 of TAN24 states that the impacts of climate change on historic assets are a particular challenge and often sit outside the remit of the planning process, such as flooding, sea/tide level changes and associated impacts on vegetation. Mitigation measures to adapt to climate change do fall under the remit of the planning system such as flood defences and therefore public benefits should be weighed against potential harm to character or significance of heritage assets.

Section 5.1 of the TAN24 outlines that designated heritage assets such as Listed Buildings and Conservation Areas are important assets which contribute to the quality and character of Welsh landscapes and townscapes. The setting of a historic asset includes its surroundings, in which it is understood, experiences and appreciated, embracing the past and present relationships to the surrounding landscape.

In determining planning applications involving Listed Buildings, Section 66 of the Planning (Listed Buildings and Conservation Areas) Act 1990 States that

development shall have regard to the desirability of preserving a designated heritage asset or its setting or any features of special architectural or historic interest.

4.1.9 The Well-being of Future Generations (Wales) Act (2015)

The Well-being of Future Generations (Wales) Act 2015 requires public bodies to work with people and communities to prevent persistent issues such as climate change for both current and future generations. A goal of the Act focusses on 'A Resilient Wales', which is defined as:

'A nation which maintains and enhances a biodiverse natural environment with healthy functioning ecosystems that support social, economic and ecological resistance and the capacity to adapt to change'.

Table 4: Summary of how the proposed Stephenson Street FDS contributes towards the achievement of The Well-being of Future Generations (Wales) Act 2015

Well-being Goals	Project Opportunities
A Prosperous Wales	Ensuring Liswerry is protected against flooding, which would cause significant flood damage and potential loss of life.
A Resilient Wales	Ensuring the long-term safety and resilience of critical flood defence infrastructure adapting to the risks of climate change. Resilience of ecosystems and connectivity of otter habitats.
A Healthier Wales	Ensure long-term access is maintained along the embankments for recreation and enhancement of the Wales Coast Path.
A More Equal Wales	Investment in Flood Risk Management infrastructure to support a deprived area and major local employers.
A Wales of Cohesive Communities	The scheme will aim to use local labour and materials wherever possible.
A Wales of Vibrant Culture and Thriving Welsh Language	Linked enhancements to the strong historic interest of the area and setting adjacent to the Grade I Listed Newport Transporter Bridge.
A Globally Responsible Wales	Use resources responsibly and promote sustainable choices where possible.

The Applicant considers that the proposed flood risk management and highway proposals are consistent with the aims and objectives of the Act and therefore acceptable.

4.1.10 Active Travel (Wales) Act 2013

The Active Travel (Wales) Act 2013 aims to make active travel the most attractive option for most short journey. The Act requires local authorities in Wales to produce active travel maps and deliver year on year improvements in act travel

routes and facilities. It requires highways authorities to make enhancements for pedestrians and cyclists in all new road schemes.

4.1.11 Environment (Wales) Act 2016

Section 6 of the Environment (Wales) Act 2016 places a duty on public authorities (including Statutory Undertakers) that exercise their function in Wales to maintain or enhance biodiversity and promote the resilience of ecosystems. Section 6(2) states that public authorities should consider the following in undertaking their undertakings: diversity between and within ecosystems, connections, scale, conditions and adaptability of ecosystems.

4.2 Local Planning Policy

The development plan for the area comprises the Newport City Council Local Development Plan (LDP), which sets out policies to guide development for the plan period of 2011-2026. The LDP was formally adopted on 27 January 2015 which superseded the previous Unitary Development Plan.

4.2.1 Newport City Council Local Development Plan

The following LDP policies are considered to be relevant in determining this application:

Objective 1 – Sustainable Use of Land: To ensure that all development makes the most efficient use of natural resources by seeking to locate development in the most sustainable locations, minimise the impact on the environment and make a positive contribution to local communities.

Objective 2 – Climate Change: To ensure that development and land uses make a positive contribution to minimising and adapting to or mitigating against the causes and impacts of climate change, by incorporating the principles of sustainable design, changes to travel behaviour, managing the risk and consequences of flooding, and improving efficiency in the use of energy, waste and water.

Objective 3 – Economic Growth: To enable a diverse economy that meets the needs of the people of Newport and those of the wider South East Wales economic region.

Objective 5 – Conservation of the Built Environment: To ensure that all development or use of land does not adversely affect, and seeks to preserve or enhance, the quality of the historic and built environment.

Objective 6 – Conservation of the Natural Environment: To protect and enhance the quality of the natural environment, including landscape, protected habitats, and species of principal importance for biodiversity in Wales and the protection of controlled waters.

Objective 9 – Health and Well-being: To provide an environment that is safe and encourages healthy lifestyle choices and promotes well-being.

Policy SP1 – Sustainability: Proposals will be required to make a positive contribution to sustainable development by concentrating development in sustainable locations. Particularly, proposed developments are expected to minimise flood risk, sea level rise and impacts of climate change.

Policy SP3 – Flood Risk: Proposals should be directed away from areas where flood risk is identified and should ensure that flooding is not increased elsewhere. Development should be designed to cope with the threat and consequences of flooding over its lifetime. Sustainable solutions to manage flood risk should be prioritised.

Policy SP9 – Conservation of the Natural, Historic and Built Environment: The conservation, enhancement, and management of recognised sites within natural, historic, and built environment will be sought in all proposals.

Policy SP14 – Transport Proposals: Transport proposals will be supported where they provide traffic free pedestrian and walking facilities, improve road safety, assist the local economy, relieve traffic congestion in the long term and result in environmental improvements.

Policy GP1 – Climate Change: Proposed developments should be designed to withstand the local climate and reduce the risk of flooding on and off site.

Policy GP2 – General Development Principles and Amenity: Development will be permitted where there are no significant adverse effects on local amenity in terms of disturbance, privacy, overbearing, light, noise, and odour. Development proposals shall not detriment the local character or appearance of the surrounding area and design out crime and anti-social behaviour.

Policy GP4 – Highways and Accessibility: Proposed developments should provide appropriate access for non-vehicular users, be accessible by a choice of means of transport, be designed to reduce transport severance and ensure that development would not be detrimental to highways or pedestrian safety or result in traffic generation exceeding capacity of the highway network.

Policy GP5 – Natural Environment: Proposals shall be designed and managed to protect and encourage biodiversity and ecological connectivity, mitigate/compensate negative impacts to biodiversity and ensure that there are no significant adverse effects and ensure there are no unacceptable impacts on water quality.

Policy GP6 – Quality of Design: Proposals are expected to create safe, accessible, attractive, and convenient environments which are sensitive to the existing built form and qualities, connectivity, and materials.

Policy GP7 – Environmental Protection and Public Health: Development will not be permitted which would cause or result in unacceptable harm to health because of land contamination, dust, instability or subsidence, air, heat noise or light pollution, flooding water pollution or any other identified risk to environment, local amenity or public health and safety.

Policy CE2 – Waterfront Developments: Development shall integrate with the waterway and not turn its back on it and should take account of the interests of regeneration, leisure, navigation, water quality and flow.

Policy CE4 – Historic Landscapes, Parks, Gardens and Battlefields: Development proposals should protect, conserve, enhance and where appropriate restore designate heritage assets, landscapes, and their associated setting.

Policy CE6 – Archaeology: Development will be required to undertake an archaeological impact assessment before proposals can be determined where groundworks or installation of services are proposed in the Archaeological Sensitive Areas of Caerleon, The Levels, Lower Machen or the City Centre or within other areas of recognised archaeological interest.

Policy CE8 – Locally Designated Nature Conservation and Geological Sites: Development proposals impacting locally designated sites will be permitted where there would be no overall loss of the nature conservation, there would be no significant adverse effect on geological interests or where suitable mitigation/compensation can be achieved.

Policy CE9 – Coastal Zone: Development will not be permitted in the coastal zone unless: i. in the undeveloped coastal area such development is required to be on the coast to meet an exceptional need which cannot be achieved elsewhere; or, ii. the area is not itself at risk nor will the proposed development exacerbate risks from flooding.

Policy M1 – Safeguarding of Mineral Resources: Development which would be incompatible with safeguarding hard rock or sand and gravel resources within the mineral resource areas will not be permitted unless; i. the developer can demonstrate that the working resource is economically or physically impractical or would be environmentally unacceptable, ii. the resource can be acceptably removed prior to development, iii. development would be temporary in nature and would be returned to its existing state; or, iv. there is an overriding need for development.

Policy M4 – Wharves and Rail: The sustainable transportation of aggregate will be favoured. Existing wharves and rail infrastructure will be safeguarded.

Policy T2 – Heavy Commercial Vehicle Movements: Developments which generate heavy commercial vehicle movements will be favoured in those locations which allow access to a railway line, wharf, or dock.

Policy T7 – Public Rights of Way and New Development: Any public footpath, bridleway or cycleway affected by development proposals will require retention or the provision of a suitable alternative.

Policy T8 – All Wales Coast Path: Development proposals should protect and enhance the WCP. The provision of additional routes to link to the coast path will be encouraged.

Policy CF1 – Protection of Playing Fields, Land and Buildings Used for Leisure, Sport, Recreation and Play: The redevelopment for other purposes of playing fields, other land and buildings will be permitted where: i. alternative

provision of the same benefit is made available in the immediate locality; or, ii. the land or buildings are surplus to requirements.

4.2.2 Adopted Supplementary Planning Guidance

Although Supplementary Planning Guidance (SPG) documents do not hold the same status as the adopted LDP, Welsh Government advises that they may be taken into account as a material consideration in determining planning applications.

The following SPG documents are considered to be relevant to the submitted planning application:

Sustainable Travel (Adopted July 2020)

The Sustainable Travel SPG aims to promote sustainable travel in new developments and to ensure that travel routes are not limited by site boundaries. Good design can provide physical structures required to support sustainable travel e.g. a network of safe and efficient network of cycle and pedestrian paths are foundational components to support behavioural changes.

SPG guidance states that all the goals of the Well-being of Future Generations (Wales) Act 2015 are linked to enhancing sustainable travel. Specifically, sustainable travel is likely to have significant positive impacts on helping create 'A Healthier Wales', 'A Wales of Cohesive Communities' and 'A Globally Responsible Wales' in terms of its impact on the environment.

The Active Travel (Wales) Act 2015 places a requirement on local authorities to continuously improve facilities and routes for walkers and cyclists. The Sustainable Travel SPG will help to make place makers aware of the routes that already exist and how their new developments can integrate with the wider network.

Wildlife & Development (Adopted August 2015)

The Wildlife and Development SPG outlines that developers should consider whether they need to undertake an Environmental Impact Assessment and submit a screening opinion as to whether a report to inform a Habitat Regulations Assessment (HRA) is required.

Newport contains a number of designated sites under the Habitats Regulations including the Severn Estuary SAC, SPA and Ramsar and River Usk SAC. Key considerations for developers include:

- Time restrictions may be placed on piling works, or any other activities which cause noise and vibration;
- Ensure that development proposals do not adversely impact upon the water quality; and,
- Any works affecting otters may be subject to restricted working hours and mitigation measures.

5 Scheme Appraisal

Key issues to consider in the determination of the planning application, in accordance with the identified planning policy framework include:

- Is the principle of development acceptable?
- Would the proposed development result in any unacceptable hydrological or flooding impacts?
- Would the proposed development give rise to any unacceptable transport or highways impacts?
- Does the proposed development impact the character and setting of the application site?
- Does the proposed development impact upon designated heritage assets?
- What are the proposed environmental and ecological impacts associated with development?
- Does the proposed development impact upon the arboriculture of the application site?
- Would the proposed development give rise to any landscape or visual impacts?
- What are the health impacts associated with the proposed development?

5.1 Principle of Development

As stated in Section 3, the proposed development would comprise the construction of 6no. reinforced concrete walls, 3no. areas of localised ground raising, a 0.7km flood relief road, raising and improvements to existing embankments, a sheet pile wall, highway flood gate and non-return valves to existing culverts to manage flood risk.

PPW and TAN15 outline the requirement for resilient design which demonstrates adaptability to anticipated climate change impacts such as flood risk. As outlined in the Flood Consequences Assessment (FCA), should a flood event occur today, 192 residential properties and 620 non-residential properties would be affected by flooding from the River Usk. Existing flood defence infrastructure within the immediate locality provides a standard of protection to protect against a 1 in 30-year event (3.3% AEP) only, due to structural failings. With anticipated climate change impacts, it is predicted that 1,117 residential and 1,016 non-residential properties would be at risk from an extreme flood event, demonstrating the requirement for upgraded flood defence infrastructure. Due to the presence of existing flood embankments and flood risk history in the area, it is considered the principle of flood defence infrastructure is well-established, necessary, and acceptable. It is therefore considered that the Stephenson Street FDS is in direct accordance with PPW, TAN15 and Policies GP1, SP1 and SP3 of the LDP.

The application site includes a series of large industrial sites with informal road layouts within their respective land parcels. The proposed development would

provide a 0.7km flood relief road connecting East Bank Road to the north with Corporation Road to the south, enabling a safe and alternative means of access and escape in the eventuality of highway flood gate closures. Works would safeguard the safety of human health of Hanson and Marshalls employees and manage the risk and effects of flooding, thus according with TAN15 and Policies GP1, SP1 and SP3 of the LDP.

The proposed development would not prejudice any extant planning permissions or the existing 'Wharves and Rail' LDP allocation. While the northern ground raising would interact with allocation H1(38) housing allocation, properties at Lysaght Avenue have been constructed since the adoption of the LDP and would therefore give rise to negligible impacts on the existing land use.

The proposed development would serve to provide flood protection to areas along the River Usk, safeguarding the delivery of planned infrastructure along the river corridor. It is considered that the works are wholly necessary to ensure that the Liswerry area of Newport is able to withstand large flood events and predicted effects of climate change during the lifespan of the proposed infrastructure assets (up to 2069).

The proposed works would deliver significant public benefits to communities and businesses within the immediate area at the greatest risk of flooding without undermining potential development in downstream areas. It is therefore considered that the proposed development would not conflict with any third-party land interests or land use designations. The proposed works are therefore wholly essential to achieve a 'Resilient Wales', thus according with PPW, The Well-being of Future Generations Act (2015), TAN15 and Policies GP1, SP1 and SP3 of the LDP.

5.2 Hydrology and Flood Risk

A FCA has been provided in support of this planning application in accordance with Section 7 of TAN15. The FCA indicates that the standard of protection (SoP) of existing flood defences at Stephenson Street is less than a 1 in 30 chance in any year. The TAN15 Development Advice Map (DAM) indicates that the majority of land behind the proposed flood defences falls within Flood Zone C1 which is defined as: *'area of floodplain developed and served by significant infrastructure, including flood defences, and liable to flood events with probability of occurrence of 0.1% or greater (i.e. 1 in 1000 annual chance flood event or greater)'.*

Table 5 below provides a comparative overview of the number of properties at risk of flooding (low, medium, and high) by flood events in 2019, 2069 and 2119 using existing baseline conditions (without flood defence infrastructure in place) and with the proposed flood defence infrastructure in place.

Table 4: Summary of properties at flood risk during the lifespan of the scheme with and without flood defence infrastructure

Year	Flood Risk Band	Number of Properties Under Existing Baseline	Number of Properties with Proposed Scheme	Variance of Impacted Properties
2019	Low (0.1% - 1%)	1,856	102	-1,754
	Medium (1% - 3.3%)	100	32	-68
	High (>3.3%)	56	29	-27
	Total	**2,012**	**163**	**-1,849**
2069	Low (0.1% - 1%)	3,839	2,440	-1,399
	Medium (1% - 3.3%)	1,034	87	-947
	High (>3.3%)	895	75	-820
	Total	**5,768**	**2,602**	**-3,166**
2119	Low (0.1% - 1%)	1,942	3,204	+1,262
	Medium (1% - 3.3%)	1,469	3,041	+1,572
	High (>3.3%)	5,957	2,935	-3,022
	Total	**9,368**	**9,180**	**-188**

As illustrated in Table 5, the number of properties at flood risk during 2069 would be significantly reduced due to the provision of the flood defence infrastructure proposed through the proposed development. While Table 5 demonstrates a higher number of properties at low and medium flood risk in 2119, the FCA attributes this increase to a reduction in properties at the highest risk of flooding (3.3% AEP), thus justifying variances relative to the baseline data. Data presented in the FCA demonstrates a reduction in properties at low, medium, and high risk of flooding against baseline date up to 2069, indicating the schemes ability to deliver upon its objectives, therefore according with TAN15 and Policies GP5 and GP7 of the LDP.

Due to the increased flood embankment heights, it is understood that additional flow will be retained within the river channel, resulting in marginal increased water levels. Water levels would exacerbate flooding in some areas resulting in detriment relative to baseline figures. The FCA indicates that a property level assessment of detriment (increase flood depths greater than 4mm) was undertaken, indicating that 15 properties would be adversely impacted as a result of the scheme (10 industrial buildings, 1 residential property and 4 commercial premises).

Due to the high baseline flood risk conditions of the 10 industrial buildings and existing use, it is considered that the detriment would unlikely be material in nature, while residential and commercial properties would be at a 3.3% and 1% risk of flooding respectively. Table 5 indicates that there would be 1,399, 947 and 820 fewer properties at the low (0.1% -1%), medium (1%-3.3%) and high risk (>3.3%) of flooding respectively in 2069 by virtue of the provision of flood defence infrastructure. As such, NRW have taken a risk-based approach to flooding and consider that the betterment provided by the scheme overall

outweighs the potential detriment which accords with the provisions of the Water Resources Act 1991 (as amended by the Flood and Water Management Act 2010).

As outlined in Table 5, the proposed development would achieve significant betterment and mitigate existing flood risk during large events and is considered beneficial in comparison to low levels of detriment to properties during lower likelihood events. It is considered that the proposed development would contribute towards a more 'Resilient Wales', providing essential flood defence infrastructure to safeguard existing industrial, commercial and residential land uses in Liswerry, Newport. The scheme reflects the design ambitions of PPW and TAN15 to ensure the area is able to adapt to predicted climate change, as well as demonstrating accordance with Objective 2 and Policies GP1 and SP3 of the LDP.

Due to the schemes location adjacent to the River Usk, a Water Framework Directive (WFD) compliance assessment has been undertaken in accordance with the Water Environment (Water Framework Directive) Regulations 2017. The WFD seeks to prevent the deterioration of the status of waterbodies and protect, enhance and restore waterbodies.

The proposed works would include the refurbishment of the Stephenson Street flood embankment adjacent to the riverbank, minimising works with the watercourse and the associated SAC. Construction works would be undertaken from land as opposed to the intertidal riverbank, preventing any potential contamination and sediment from polluting the waterbody.

Enhancement measures would include the removal of litter from the eastern bank, minimising further contaminants from entering the watercourse during high tide. In addition, contractors will undertake construction in compliance with the submitted Environmental Action Plan (EAP) and implement best practice for working near water to prevent deterioration of adjacent waterbodies.

The WFD assessment concludes that the proposed development would not result in the deterioration of the status of the River Usk and would not prevent the waterbody from achieving a 'good' ecological status. In addition, the proposed works would aid the delivery of mitigation measures to the River Usk including refurbishment to existing flood embankments and landscape planting which would not detriment the WFD status of the waterbody. As such, it is considered that the proposed development would not give rise to any unacceptable hydrological impacts which would detriment water quality, therefore according with Objective 6 and Policies GP5 and GP7 of the LDP.

5.3 Transport and Highways

NRW have ensured early contractor involvement (ECI) to fully understand the logistical and construction considerations to minimise impacts on local roads and the PRoW network. Construction and associated deliveries would be undertaken between the hours of 0800 and 1800 (Monday-Friday) with occasional Saturday working. Works on the public highway such as the installation of the proposed flood gate and connecting new and existing highways would be undertaken outside standard working hours to mitigate any potential disruption. There are no residential dwellings within the immediate vicinity of the proposed highway

works and therefore it is considered that construction traffic would not jeopardise highway safety, active travel users or impact on residential amenity.

As stated in the Construction Traffic Management Plan (CTMP), the peak number of construction vehicle trips is anticipated to be 80 two-way trips per day from the application area. Assuming that 50% of the construction traffic movements would come from the east and 50% from the west, this would constitute a daily 0.5% increase to existing movements on the A48. Construction traffic journeys would be adequately distributed throughout the day to ensure that there are no significant impacts on the local road network.

In addition, peak construction transport movements are anticipated for 12-weeks of the anticipated 1-year construction period. Traffic movement would reduce by approximately 25% for the remaining 40 weeks and would result in limited strain on the local road network. By virtue of the 0.5% increase in transport movements from the A48, it is considered that the proposed construction phase would give rise to an inconsequential impact on road conditions and is therefore accordance with Policies GP4 and SP14.

The proposed development would include the construction of a 0.7km long single carriage flood relief road measuring 7.3m in width, built to accord with the requirements of the Design Manual for Roads and Bridges (DMRB). The proposed road would connect to the existing network at two locations; East Bank Road to the north and Corporation Road to the south, as illustrated in **Drawing - 2000.**

The proposed highway would include dropped kerbs and tactile paving to ensure the safety of vulnerable road users. New footways would be provided connecting from East Bank Road to Corporation Road, enhancing access to the WCP adjacent to the railway overbridge and proposed flood gate. The development would include 6no. vehicle accesses into Hanson Aggregates and Marshalls industiral sites. Safe ingress and egress would be provided for heavy goods vehicles, as demonstrated by swept path analysis diagrams included in Appendix E of the Transport Statement. Amendments to the CEMEX site entrance have been proposed following PAC to improve left hand egress from the site during the deployment of the flood gate. The proposals include an enhanced splayed entrance with amendments to the adjacent dropped kerb to achieve safe ingress and egress, which has been further substantiated by swept-path analysis diagrams included in **Drawing 4006.** By virtue of the straight road alignment and lightly trafficked nature of the site, it is considered that the proposed development would not result in any impacts on highway safety or on the operational capacity of the surrounding transport network. As such, it is considered that the propsoed highway accords with TAN18 and Policies GP4 and SP14 of the LDP.

The proposed development would provide a sliding flood gate at the railway overbridge (Corporation Road) to manage flood impacts. By virtue that the existing highway is a ‘no-through’ road, the proposed highway is required to provide a means of escape when flood gates are in operation. A probability assessment was undertaken, indicating that the flood gate would be closed approximately 10 times per year, requiring a floodgate closure of 3 hours. Peak traffic times were identified as 0700-1000 and 1600-1900, as such gate closures

between 0500-1000 and 1400-1900 would result in a total of 10 hours per day in which a floodgate closure could coincide with peak traffic flows.

Due to the infrequent nature of the floodgate closure and anticipated volume of traffic within the locality, it is considered that the proposed scheme would have an inconsequential impact on the operational capacity of the transport network. By virtue of the anticipated minimal impacts on congestion and road safety, it is considered that the proposals accord with TAN18, Policies GP4 and SP14 of the LDP and are acceptable.

As stated in the submitted Transport Statement, a temporary PRoW diversion will be required for the duration of construction to deliver essential flood defences and enhancements to the WCP. The typical width of the WCP would be approximately 1.5m-2m and would be appropriate for shared use. As outlined in Section 3 and **Drawing 3001**, the proposed development would include an improved stepped access connecting the WCP either side of the existing Hanson Conveyor (National Grid Reference ST324855).

The Equality Act 2010 requires due regard to be given on reducing socio-economic inequalities and elimination of discrimination, including those persons with disabilities. By virtue of the compacted surface materials, lateral kerbed edges and enhanced conveyor crossing, it is considered that improvements to the WCP would accord with the Equality Act 2010 and Welsh Government's inclusive design principles[2]. While the construction phases of the development would result in short-term negative impacts on the PRoW network, it is considered that enhancements would encourage wider use and contribute towards a 'healthier Wales'. Due to the proposed enhanced public realm and accessibility, it is considered that the proposals accord with PPW, The Well-being of Future Generations (Wales) Act 2015 and Policies GP4 and SP14 of the LDP.

5.4 Design and Character

As illustrated in **Drawing 2001**, the proposed development would include minor ground raising adjacent to Orb Electrical Steels and residential properties at Lysaght Avenue. Ground raising at the northern extent of the scheme adjacent to the existing hardstanding footpath at Lysaght Avenue would achieve a consistent bank height of 9.35m AOD, extending to a length of 17.5m. Existing timber fencing would be reinstated upon completion of the localised works to tie into the existing character. Due to the minimal nature of the works and seeded topsoil finish, it is considered that the works would suitably integrate into the existing ground level.

Ground raising to the south would tie into the existing level (9.35m AOD) and tie into the existing jetty structure wall to the northern extent. The localised works would extend approximately 34.5m in length and would be finished with seeded topsoil to integrate into the existing character of the site. Existing fencing would be reinstated and would appear similar to that of the existing context. Given the nature of the proposed development, it is considered that the proposed development would respect the existing character of the site and would not be

[2] https://gov.wales/sites/default/files/publications/2018-09/design-and-access-statements.pdf

visually intrusive on the public realm. As such, the proposals accord with Policies GP6 and SP9 of the LDP.

The Stephenson Street riverbank ground raising situated to the north of the highway would necessitate the removal of unmanaged scrub and corrugated iron fencing which would reduce visual intrusion of unaesthetically pleasing elements of the public realm. The minor ground raising works would provide a consistent bank height of 9.35m AOD, extending a distance of 14.3m to the north of Stephenson Street.

Upon completion a 1.8m high green chain link fence and a pedestrian access gate would be provided. Similar to the works to the north, ground raising would be finished with seeded topsoil to ensure works integrate into the surrounding landscape. It is considered that the loss of corrugated iron fencing and unmanaged vegetation would improve the character of Stephenson Street whilst delivering upon the scheme's objectives. Due to the minimal nature of the works, there would be not be any unacceptable impacts on the character of the area or adjacent designated heritage assets, thus according with policies GP6 and SP9 of the LDP.

The Stephenson Street flood embankment extends along the western boundary of Coronation Park. The embankment would extend 230m in length from Stephenson Street in a southern direction lined by trees and the inland embankment toe slope. A variable embankment crest width would be provided ranging from 2.5m at the northernmost extent of the embankment adjoining Stephenson Street, up to 8m where the embankment would accommodate seating and planting areas. Due to topographical differences, a retaining Redi-Rock wall would be provided with a stone effect finish fronting the Newport City Dogs Home to the east. The flood embankment would benefit from observation areas would allow users of the WCP to view the River Usk and the Grade I Listed Transporter Bridge.

Sections and artists impressions of the proposals are illustrated below for context and set out in **Drawings 2003-2005**.

It is considered that the proposed development would significantly enhance the character of the existing WCP and ensure users can interact with the surrounding landscape. Observation areas demonstrate an understanding of the key opportunities present within the application site and would ensure quality placemaking is achieved which contributes towards a 'Healthier Wales', as illustrated in Figure 13 below. Similar opportunities would be provided for observation areas, tree and wildflower planting upon the sheet pile flood wall and crested embankment to the south, as illustrated in **Drawings 3000, 3001** and **3004**. The design proposals would ensure a safe, accessible, and attractive environment which promotes active travel and wholly accords with Policies GP6 and SP9.

Figure 13 Wales Coast Path enhancements and observation areas.

The proposed development would include comprehensive landscaping and mitigation planting within Coronation Park, demarcating the slope toe of the Stephenson Street flood embankment and boundary fence line of the Newport City Dogs Home. As indicated in Section 2, Coronation Park does not benefit from discernible landscape character, comprising recreational sports pitches and open space. The proposals would create a landscaped garden area to the south of Coronation Park with inward facing perimeter benches and concrete steps.

It is considered that the proposed development would create a sense of place which is well connected through formalised and legible pathways to the enhanced WCP to the west. In addition, mitigation tree replanting would comprise high quality and biodiversity rich species which would positively contribute to the character of the public realm without impeding existing recreational uses. It is considered that landscaping proposals would achieve a sense of place and greater use due to the enhanced character and uses available to communities. As such, the proposals accord with PPW, TAN12 and Policies GP6 and SP9 of the LDP.

The Felnex reinforced concrete wall would extend from the existing Hanson Aggregate Conveyor, 175m from the River Usk to the ramped access of East Bank Road, measuring 2.5m in height and 0.4m in depth. The existing industrial area benefits from minimal landscape character and therefore the provision of reinforced concrete walls is not considered to impact the character of the existing site. The northern wall would extend approximately 495m from the ramped access to East Bank Road along the majority of the proposed highway to Corporation Road. To proposed addition of reinforced concrete flood walls would be in keeping with the industrial character of the site and would deliver upon the objectives of the Stephenson Street FDS. At the Hanson Aggregate Conveyor site adjacent the riverbank, the proposed development would replace the metal stepped

crossing spanning conveyor apparatus to improve accessibility of the PRoW network along the WCP.

By virtue of the existing industrial nature of the site and existing security palisade fencing along the proposed route of the Felnex Flood Wall, it is considered that the development is informed by the character of the local area and would not detract from its existing industrial character. The proposed development therefore accords with Policies GP6 and SP9 of the LDP and is considered to be acceptable.

The existing industrial site is served by one means of access via Corporation Road adjacent to the existing railway embankment. The proposed development of a 0.7km flood relief road connecting East Bank Road and Corporation Road would provide 6no. vehicle access points to existing occupants of the industrial estate and would replace informal hardstanding arrangements. The construction of the proposed highway would not be out of character with the existing site and would include footways for vulnerable road users.

The proposed highway flood gate and associated flood walls would tie into the existing railway embankment at the Corporation Road overbridge. Due to the sliding arrangement of the flood gate, its apparatus would be obscured from the public realm and run flush to the embankment slope, minimising visual impacts. Additional planting and seeded topsoil would be provided to embankment areas to ensure that the highway and raised T-junction is not dominant in the immediate landscape. It is considered that the proposed highway would accord with design guidance set out in TAN18 and Policies SP9 and GP6.

The proposed development would enhance and extend the access track connecting the WCP to the proposed railway embankment floodwall, as demonstrated in **Drawings 5000, 5001** and **5002.** The proposed development would upgrade the existing WCP for the construction and reinstate the pathway back to its existing condition, minimising design impacts on the PRoW network. The lower section of the pathway (‘Type B’) would measure 5m in width and extend to a cumulative length of 405m. By virtue of the existing unbound pathway and industrial nature of the site, it is considered that the proposed development would be in keeping with the existing form and would not detract from its character.

Further culvert improvements would be provided within the railway embankment at Marshalls and Liberty Steel which would include non-return valves to prevent the flow of floodwater during flood events. Both culverts would be partially submerged in unclassified drainage waterbodies at the toe of the railway embankment and therefore would not be overtly visible from the public realm. Due to the absence of discernible landscape character and visibility from the public realm, culvert and non-return valves would result in inconsequential design impacts.

In conclusion it is considered that proposed flood defence infrastructure along the eastern bank of the River Usk would interact positively with PRoW network and provide opportunities to enhance the existing user experience of the WCP. As illustrated, the proposals would achieve enhancements including observation areas, resurfacing, landscaping, and widening of the WCP to allow safer user by different PRoW users. The development would achieve vast enhancements to Coronation Park which exhibits limited discernible landscape character, providing

high quality design within landscaped area without prejudicing the wider recreational sports areas. Flood defence infrastructure would be in keeping with the nature of the industrial site to the south of Coronation Park and would therefore not detract from its existing character. As such, it is considered that proposals would respect and enhance the existing design and character of the application site, while demonstrating accordance with PPW, TAN12 and Policies GP6 and SP9 of the LDP.

5.5 Heritage and Conservation

An Archaeological Desk Based Assessment (DBA) was undertaken by Archaeology Wales in March 2019 and was updated in April 2020 following scheme refinements. The DBA concluded that the proposed development would not be situated upon land which would affect any Scheduled Monuments, Registered Historic Landscapes, Historic Parks and Gardens or Conservations Areas. By virtue of the lack of historic receptors within the vicinity of the application site, it is considered that flood embankments and walls would not serve to undermine the character or setting of designated heritage assets. In addition, there are 24 Historic Environment Records (HERs) within 1km of the site, however, no recorded site would be directly impacted by the proposed development. As such, it is considered that the proposed development would accord with TAN24 and Policies CE4 and SP9 of the LDP.

As outlined in Table 9 of the ECOR, NRW recognise that the application site is situated within NCC's Archaeological Sensitive Area and recognition of significant finds in the area (including the Newport Ship) are acknowledged. As such, the potential for construction to affect previously unrecorded archaeological remains is understood. An Archaeological Watching Brief (AWB) would be undertaken following an approved Written Scheme of Investigation (WSI) for all works requiring excavation which would mitigate any potential effects on unrecorded archaeological remains and would be put into practice using the EAP. It is considered that the proposed mitigation and methods of working accord with the pre-application engagement undertaken with Cadw and Glamorgan- GGAT prior to submission.

There are 14 Listed Buildings within 1km of the application site, including 3no. elements of the Grade I Listed Newport Transporter Bridge (references: 17414, 17415 and 3076). During the pre-application stages of the application, NRW have extensively consulted with Cadw, GGAT and the Heritage and Conservation Officer of NCC about the interface between the proposed development and the Transporter Bridge.

As outlined in the DBA and Watching Brief Report, suitable mitigation to safeguard potential archaeological resource would include the provision of an archaeological watching brief during all intrusive ground works until the natural substrate has been reached. The report indicates that the current landscape is one defined by industry and transport and therefore the proposed development would not have a significant detrimental impact on the general archaeological and historical landscape setting. In addition, no designated sites including Registered

Parks and Gardens, Scheduled Ancient Monuments and Listed Buildings, would be directly affected by the proposed scheme.

Pre-application discussions with heritage-based stakeholders have indicated that the works would not result in any detrimentally impact upon the significance of the Grade I Listed Transporter Bridge or its setting. As such, a Listed Building Consent is not required in support of the proposed development. As such, it is considered that the works accord with Section 66 of the Planning (Listed Buildings and Conservation Areas) Act 1990, TAN 24 and LDP Policies CE4 and SP9. As such, the works are considered to be acceptable in terms of heritage impacts.

5.6 Environmental and Ecological Impacts

An EIA Screening Opinion Request was submitted to NCC planning department on 19 March 2020. The screening opinion request outlined the preferred design option, environmental baseline conditions, key receptors within the application site and initial consideration of any likely significant effects. A Screening Opinion was received from NCC on 22 May 2020 (reference 20/0305) confirming that the project does not constitute an EIA development and an Environmental Statement would not be required in support of an application for full planning permission.

By virtue that the application site is situated adjacent to the River Usk SAC, a Habitats Regulation Assessment (HRA) has been undertaken to determine any likely significant effects. During the outline design of the scheme, the NRW Fisheries department provided advice regarding the requirement for percussive sheet pile installation. Comments stated that percussive piling works within 30m of the River Usk during the Shad migration period must be undertaken during falling tide of the River. NRW have committed to using hydraulic piling (‘silent piling’) for sheet pile installation along the Stephenson Street embankment to reduce vibration impacts. All piling activities would take place at a distance greater than 30m from the River Usk and therefore it can be ascertained that no further mitigation is required to minimise any impacts on vibration-sensitive fish species, as outlined in the EAP.

Due to the degree of spatial separation from the Severn Estuary European Marine Site (EMS) (2km) comprising the Severn Estuary SAC and Ramsar Site, it is considered that the proposed works would not give rise to any unacceptable impacts during the construction or operational phases. Spatial separation is sufficient to ensure the dilution and dispersion of any water quality issues would have no effect on the range, extent and distribution, supporting habitats and natural processes of surrounding habitats within the Severn Estuary EMS.

The impacts of ‘coastal squeeze’ where infrastructure prevents coastal habitats from retreating inland during climate change induced sea level rise was considered. NRW have confirmed that the Severn Estuary would not be affected by enhanced flood defences and that a ‘Coastal Squeeze Assessment’ would not be required to support this application.

By virtue that no permanent or temporary flood defence infrastructure is required within the boundary of the River Usk SAC and the works are within the footprint

of existing flood defences, it is considered that there would be no direct effect on the river planform or coastal habitats. As such, it is considered that the proposed development would accord with Objective 6 and Policies CE8, GP5 and SP9 of the LDP and is acceptable. For further information, please refer to the submitted HRA.

As outlined in the HRA, the application site is located immediately adjacent to the River Usk SAC, which benefits from the presence of Twaite Shad and Atlantic Salmon fish species. The installation of sheet piles would take place in excess of 30m from the River Usk and would utilise silent piling techniques to minimise noise and vibration impacts on identified fish species. In addition to piling techniques, the submitted EAP outlines that methods to safeguard water quality and fish species would be implemented including designated refuelling areas, drip trays below machinery and provision of emergency spill kits. It is considered that the proposed mitigation measures would prevent adverse impacts on water quality and aquatic species and therefore would accord with Policies CE8, GP5 and SP9 of the LDP.

Furthermore, water birds, including Gadwall, Redshank and Shelduck have been identified within the Severn Estuary EMS, approximately 1.5km south of the application site and north of the Newport Transporter Bridge. In the absence of water bird species within the immediate vicinity of the application site, it is considered that the proposed works would result in a negative short-term effect with no requirement for mitigation. By virtue of the construction methods proposed and absence of bird species within the immediate setting of the flood defences, it is considered the proposed development accords with Policies CE8, GP5 and SP9 of the LDP and is acceptable.

Otter species are identified as pertinent features of the River Usk SAC and SSSI. Monthly searches along the Stephenson Street embankment have been undertaken to identify otter holts, resting places and spraints which have provided no evidence that otters are present within the immediate locality. Spraints were recorded 500m south east of the proposed works and otter cameras observed 3no. signs of presence 300m east of the railway wall. In the absence of recorded observations within the immediate locality of the application site, consultation with the NRW Otter Team has confirmed that mitigation to maintain access across sheet piles is not required. In preparation of the proposed works, pre-clearance and construction checks would be undertaken in accordance with ‘best practice survey guidance’ to identify any resting or breeding sites within 50m of the application site. Should any evidence of presence be identified, further mitigation would be provided, and a European Protected Species License would be ascertained.

As outlined in the submitted Environmental Constraints and Opportunities Report (ECOR) there a limited number of trees within the application site which are suitable for roosting bats. Construction impacts such as noise and vibration would be minimised through maintaining accordance with the submitted EAP and necessary lighting would be positioned to prevent unnecessary upward spill. Due to the considered construction managements methods and absence of highway lighting proposed, it is considered that there would be no unacceptable post-construction impacts on bat species. Prior to the construction, trees identified as

suitable for roosting within 50m of the site would be checked for the presence of bats, in accordance with 'best practice survey guidance'.

Badger surveys undertaken demonstrated the evidence of foraging and commuting only, however no setts were recorded. Due to the record of setts in connecting habitats and the suitability of the application site for badgers, the presence of setts cannot be discounted during the construction phase. Due to the potential of noise and vibration impacts associated with construction, a pre-construction inspection of suitable sites within 50m of the site will be undertaken. Should any setts be identified, disturbed, or lost due to the proposed works, a Badger License shall be sought and obtained from NRW prior to the commencement of works. During construction, there shall be no lighting used outside daylight hours and all excavations shall be covered and escape ramps provided. It is considered that the proposed development would not negatively impact upon badger populations and additional licences shall be sought in accordance with Welsh Government guidance, where required. As such, the proposed development is in accordance with Objective 6 of the LDP and Policies CE8, GP5 and GP7.

The application demonstrates unmanaged brambles and scrub which is suitable to accommodate foraging and nesting dormice species. However, due to the fragmented nature of the application, industrial land uses and road/rail infrastructure, it is considered unlikely that dormice reside within the application site and are therefore not considered to be a constraint, as set out in the submitted ECOR.

As outlined in the submitted ECOR, all recorded stands of Japanese Knotweed have been previously treated, however an additional stand was recorded within the Felnex Estate. It is not anticipated that the recorded stand would be affected by the proposed works, however, should operations encroach within 7m, Invasive Non-Native Species (INNS) management would be required, as outlined in the EAP. It is proposed that the identified stand is removed prior to the commencement of construction to reduce interplay and risk of further spread. All equipment and footwear used for clearance and construction activities shall be cleaned prior to entering the site and thoroughly disinfected when leaving the site to avoid the avoidable spread of INNS. Should further INNS be identified over and above those previously recorded, works within the immediate locality would cease until a qualified ecologist has assessed the potential risks. The proposed clearance and constructions methods have been carefully considered to minimise exposure and interplay with INNS and would ensure that efforts are taken to mitigate the potential spread of Japanese Knotweed on site. Appropriate biosecurity measures will be integrated into the Risk Assessment Management Statement (RAMS) to ensure that all contractors adhere to INNS measures. As such, it is considered the proposed development and methods are in accordance with Objective 6 and Policies CE8, GP5 and GP7 and are acceptable.

5.7 Arboriculture Impacts

A full Arboricultural Survey was undertaken in November 2020 and has informed the Arboricultural Impact Assessment (AIA) submitted in support of this application. Where tree loss is unavoidable, the Applicant has sought to ensure

that mitigation planting is sufficient while delivering improvements to the public realm and Coronation Park. As outlined in the **Planting Schedule – 8000** and the **ECOR,** the proposed development may require the removal of approximately 650 trees and shrubs, as shown in Table 5 below. The proposals would include the replanting of 84 high quality trees and a further 1,600 trees and shrubs within the urban forest areas, as well as comprehensive wildflower, grassland, and reedbed mixes would be provided throughout application site. Mitigation planting and public realm enhancements would constitute a tree replacement ration of 2.6:1. In addition to the tree replanting, significant wildflower, ornamental shrubs, woodland plantings, grassland and reedbed planting would be provided throughout the scheme to mitigate necessary tree loss.

The AIA sets out the British Standard BS5837:2012 tree classification as follows:

- **Category A:** trees in which should be given particularly high priority within the design process which constitute notably fine specimens, demonstrate visual importance as landscape features and have a life expectancy of at least 40 years;
- **Category B:** trees of some importance with a life expectancy of at least 20 years, demonstrating fair but not exceptional quality;
- **Category C:** trees of minor quality with a life expectancy of at least 10 years, which should not be regarded as a planning constraint; and,
- **Category U:** trees which are unsuitable for retention and a life expectancy of less than 10 years which are either moribund trees or in terminal decline.

As outlined in the AIA, the proposed development would necessitate the loss of 7no. groups of Category B trees and 5no. groups of Category C trees in addition to 15no. groups of Category U trees. Table 6 below indicates the amount of tree loss and the breakdown based on the British Standard BS5837:2012 tree classification:

Table 5: Summary of proposed tree loss associated with the Stephenson Street FDS

Tree/Groups/Hedges/Woodland	Classification	Number of Trees	Area (m^2)
G82 (Grey Poplar).	B	3	268
W58 (Goat Willow, English Oak, Silver Birch and Ash).	B	36	871
W59 (Silver Birch, Goat Willow, Alder, Common Hawthorn and English Oak).	B	10	113
W83 (Silver Birch, Goat Willow, Common Hawthorn and Blackthorn).	B	46	244
G120 (Goat Willow and Silver Birch).	B	3	109
G56 (Buddleja, Alder, Silver Birch, Aspen and Cherry).	C	12	66.7

Tree/Groups/Hedges/Woodland	Classification	Number of Trees	Area (m²)
G68 (Elder, Buddleja, Common Hawthorn, Goat Willow, Cypress, Ash and Cherry).	C	319	5099
G77 (Buddleja, Ash, Field Maple and Goat Willow).	C	17	32
G79 (Buddleja, Common Hawthorn, Goat Willow, Silver Birch and Crack Willow).	C	129	2379
G80 (Buddleja, Goat Willow and Crack Willow).	C	53	1456
W57 (Goat Willow and Silver Birch).	C	19	453
W62 (Goat Willow).	C	6	427

As outlined in the AIA, due to the dense unmanaged self-seeded nature of the trees and shrubs within the application site, a large quantity of low-quality trees are required for removal. Due to the dense and unmanaged shrub, the Arboriculturist was unable to fully quantify the number of trees required for felling and has therefore provided areas also, as outlined in Table 6 above.

Table 5 indicates the necessary removal of 98no. Category B trees within the application site which would be mitigated through replanting of 84no. high quality native species trees, urban forest areas and comprehensive wildflower and shrub planting throughout the application site. Landscaping has been considered and trees with high biodiversity and impact on the public realm are proposed within key locations such as Coronation Park and Stephenson Street Embankment. As outlined in the **Planting Schedule**, the proposed development would include the 46no. specimen deciduous trees (12no. Grey Alder, 11no. Silver Birch, 12no. Spanish Oak and 11no. Grey Poplar), 10no. Scots Pine Conifer trees and 28no. feature feathered trees (13no. Amelanchier Lamarckii, 9no. Betula Jacquemontii and 6no. Acer Griseum).

Indication of the proposed siting of trees and other elements of wildflower, grassland mixes and native woodland and urban forest planting throughout the park and embankment slopes are outlined in the **Coronation Park Plan – 2003**. As demonstrated, the proposed replanting would enhance seating and 3no. urban forest areas situated in the southern area of the park and would not encroach within designated recreational sports pitches. It is considered that the proposed replanting of 84no. high quality trees, urban forest planting (1,600 trees/shrubs) and comprehensive grassland, wildflower, shrub and reedbed planting would achieve a 2.6:1 replanting ratio across the site, adequately mitigating tree loss outlined in Table 5. Once matured, the proposed replanting would enhance the setting and character of Coronation Park and the WCP through the provision of green infrastructure assets. As illustrated in Figure 7, the majority of trees would be provided along the Stephenson Street embankment toe, parallel to the enhanced WCP and Newport City Dogs Home. It is considered that the proposed development would provide additional biodiversity benefits and public realm improvements and therefore is considered to accord with TAN 5, Objective 6 and Policy GP5 of the LDP.

In addition to tree replanting, the proposed planting would include wildflower and perennial mixes, ornamental shrubs, grass planting, woodland planting with understorey mixes and reedbed planting mixes. Replacement planting at a ratio of 2.6:1 would be provided throughout the scheme, specifically on embankments and highway access ramp slopes to integrate the defences into the existing landscape and mitigate visual intrusion. Additional tree planting and soft landscaping would be provided adjacent to the sheet pile wall embankment along the WCP, providing enhancement to the existing PRoW network. While tree and scrub loss are necessary in concentrated locations to facilitate development, the Stephenson Street FDS would provide wider replanting opportunities which would enhance the character of the existing WCP, Coronation Park and industrial setting of the area. As such, it is considered that that the proposed development would accord with Objective 6 and Policy GP5 of the LDP and is therefore acceptable.

5.8 Landscape and Visual Impacts

As outlined in the **Landscape Vision**, the vision for Liswerry is to become a destination in its own right, led by nature within the backdrop of an urban and industrial landscape. The Transporter Bridge and its industrial heritage is a focal and dominating vertical element of the immediate landscape. The submitted **Landscape Vision** outlines that the better access to and from Coronation Park is one of the key objectives associated with the development. An early option included a fully inclusive loop walk that connected the Stephenson Street embankment and Coronation Park. Due to topographic differences, a long ramp, steps, and enhanced accesses would be provided into the park. Viewing platforms and benched areas would be provided to enhance the user experience of the immediate landscape on the WCP and Coronation Park.

A Landscape and Visual Appraisal (LVA) has been submitted in support of this application and provides an overview of the effects that would arise during the construction and operational phases of development. The LVA has been broken down into three temporal scales (construction, year 1 and year 5) to provide an overview of effects at different stages of the defence lifespan.

The **Landscape Vision** is contained in **Appendix B** for further reference.

5.8.1 Landscape Impacts

The Eastern Usk Industrial Area to the eastern and southern boundaries of Coronation Park is categorised as having a low local value and low susceptibility to change. During construction, direct impacts will affect a small section of the area comprising improvements to flood walls and new defence infrastructure connecting Corporation Road and East Bank Road, including landscape mitigation. Construction effects would include disruption to recreational users of Coronation Park and the WCP due to the presence of machinery, fencing and haul roads for compound and laydown areas. As such, a loss of tranquillity in this area is anticipated, resulting in a medium negative change during construction, resulting in a slight negative effect.

During year 1 of the ‘operational phase’ there would be a medium negative change for the length of the flood embankment. This magnitude of change is anticipated due to clearance of vegetation and would result in loss of tranquillity. While minor changes of some landscape features are anticipated, these would be relatively minor in comparison to the whole area, resulting in a slight negative effect during year 1 of operation. With additional time, proposed mitigation measures such as wildflower reseeding, trees and shrubs would have established, resulting in the low improvement, integration and enhancement of the existing landscape. As such, at year 5 of the ‘operational phase’, it is considered that mitigation measures would give rise to a negligible effect on the overall landscape character of the site.

During the construction phase, indirect impacts would affect a small section of the Lower Risk Usk Landscape Character Area (LCA) by virtue that works would not be sited within the SSSI or SAC and temporary in nature. As such, it is considered that the construction impacts would result in a slight negative effect only. In addition, due to the lack of development inside the LCA there would be limited visual or sensory impacts at year 1 of the ‘operational phase’, resulting in a slight negative effect. Mitigation planting would have positive effect on the views and would assimilate with existing planting resulting in a slight beneficial effect on the landscape character. In regard to wider character areas including Docks and Level of Medalgrief, Usk Built Urban Corridor and Newport West, it is considered that there would be negligible impacts on the landscape character during the construction and year 1-5 of the ‘operational phase’.

While the proposed development would result in moderate/slight detriment to LCAs within the locality of the application site, the LVA demonstrates long-term negligible impacts during the operational phases of development due to mitigation planting and considered integration with the existing setting. As such, it is considered that long term negligible impacts and improvements at Lower and Eastern Usk would accord with Objective 5 and Policies CE4, GP6 and SP9 of the LDP.

5.8.2 Visual Impacts

The submitted LVA also considers the visual effects from key receptors within the locality including the Grade I Listed Transporter Bridge. During the construction phase, a maximum of 15% of medium views from the bridge would be occupied by construction activities and vegetation loss which would result in large negative effects, albeit temporary and reversable. During year 1 of the ‘operational phase’, 5% of the views from the bridge would be occupied by flood defences and associated planting and would result in moderate negative effects upon the visual character. Following the establishment and integration of landscape planting which would reduce the visual prominence of the defences and result in negligible effects at year 5 of the ‘operational phase’. Due to the level of landscape planting and mitigation, it is considered that the proposed development would result in a positive visual impact from the Newport Transporter Bridge, therefore demonstrating accordance with Policies CE4, GP6 and SP9 of the LDP.

During the construction phases of the development, it is considered that at least 30% of short/medium views from the WCP would be occupied by construction activities and equipment. Vegetation removal would also adversely impact upon the visual character of the site, resulting in a moderately negative effect during construction. During year 1 of the 'operational phase', 20% of views would be occupied by flood defences and associated planting, resulting in moderate negative effects. Following the integration of planting and materials, it is considered that there would be positive visual effects and would constitute an enhancement on the existing visual character at year 5. As such, it is considered that the proposed development would accord with Objective 5 and Policies CE4, GP6 and SP9 of the LDP. Further details appurtenant to the landscape and visual impacts of the scheme are outlined in the submitted **Landscape and Visual Appraisal.**

5.9 Health Impact Assessment

A Health Impact Assessment (HIA) has been submitted in support of this application. While the proposed development would impact upon the functionality of the Coronation Park during the construction phase, the proposals would achieve a greater level of flood protection to residential communities and commercial premises within Liswerry area, according with the 'Resilient Wales' goal of The Well-being of Future Generations Act (2015).

In the short term, the Stephenson Street FDS would require the diversion of the WCP however, long term enhancements to the WCP and Coronation Park would enhance the visual appearance of the area resulting in additional recreational use, civic ownership and reduced anti-social behaviour. Based upon the findings of the HIA, it is considered that the proposed development would contribute to a more 'Resilient and Healthier Wales', Objective 6 and Policies GP6 and SP1 of the LDP.

In regard to the natural and built environment, the proposed development would provide long term benefits in the form of an alternative means of escape from the industrial estate in the eventuality of a flooding event and additional flood protection measures to approximately 900 properties. While the proposed construction would likely hold a high carbon cost, the proposed scheme would save approximately £73 million across the lifespan of the project while delivering essential flood risk mitigation. As such, it is considered that the scheme would suitably contribute towards a 'Resilient Wales' and accord with Objective 9 and Policies GP6 and SP9 of the LDP.

5.10 Summary

Based on the information provided in this chapter and documents submitted in support of this application, it is considered that the proposed development accords with the relevant national and local planning policies set out in the NCC LDP 2011-2026.

It is therefore considered that planning permission should be granted for the proposed development.

6 Conclusion

An application for full planning permission will be submitted to NCC for flood defence and highway infrastructure under the Stephenson Street FDS on behalf of NRW.

The development proposals include the construction of flood defences and a flood relief road adjacent to the River Usk to manage existing and anticipated flood risks. It is considered that the proposed development is essential to ensure social, economic, and hydrological resilience to the Liswerry area of Newport and would protect existing essential infrastructure. By virtue of the nature of development and standard of existing flood risk protection on the River Usk, there is a clear and overwhelming requirement for the proposed development in Newport, establishing the principle of development as being wholly necessary and acceptable.

As set out in Section 3 of this Statement, the Applicant has undertaken extensive optioneering in developing the Stephenson Street FDS. A combination of soft and hard engineering solutions has been identified as the most effective course of action in delivering upon the schemes objectives to provide a design standard of 1 in 200-year standard of protection up to 2069, providing protection to 1,117no. residential properties and 1,016no. businesses.

The proposed development would enhance the existing PRoW network along the WCP, improving the choice and demand for active travel within Newport. As outlined in the Transport Statement, the proposed highway would provide 6no. vehicle access points to existing industrial land uses and connect East Bank Road and Corporation Road which is required in the eventuality of a flood risk event. Due to the lightly trafficked nature of the site and proposed alignment, it is considered that the proposed development would not result in any unacceptable transport or highways impacts. Furthermore, the proposed works would not give rise to any unacceptable ecological or biodiversity impacts, as set out in Section 5.6 and supporting information.

While the proposed development would necessitate the loss of approximately 650no. unmanaged trees/shrubs throughout the application site, scheme wide planting and mitigation tree planting in Coronation Park would integrate proposed defences and the proposed highway into the existing landscape once established, while achieving significant public realm enhancements. The proposed replanting of 84 trees in addition to comprehensive urban forest planting (1,600no. trees/shrubs) with further grassland, wildflower and reedbed planting would achieve a 2.6:1 replacement ratio, adequately mitigating necessary tree loss. Proposed trees would be of a high quality, enhancing the character of the public realm at Coronation Park and the WCP once matured. The proposed development would achieve additional wildflower and a grassland planting throughout the scheme to assist in the integration of flood defences into the existing landscape. By virtue of the proposed replacement of Category B trees and wider enhancement planting, it is considered that the proposed development would mitigate tree loss and achieve within ecological enhancements in line with Section 6 of the Environment (Wales) Act 2016.

NRW has taken a risk-based approach to flooding in assessing the viability of the Stephenson Street FRMS. Although the proposed development would result in the detriment of 16no. properties (15no. industrial/commercial and 1no. residential), the overall benefits of the scheme significantly outweigh the detriment, providing protection to 1,117no. residential and 1,016no. non-residential properties. Due to the nature of use and high baseline flood risk of the identified properties, detriment is unlikely to be material in these locations and therefore is acceptable. As such, it is considered that the proposed development demonstrates key benefits which outweigh the impacts and would serve to achieve a 'Resilient Wales' which aligns with PPW and the Well-being of Future Generations (Wales) Act 2015 as well as the policies of the Newport City Council LDP 2011-2026.

Based upon the information provided, the Applicant considers that the benefits of the Stephenson Street Flood Defence Scheme would weigh heavily in the determination process of this application. It is therefore considered that full planning permission should be granted.

Appendix A – Stephenson Street Flood Defence Scheme Moodboard

ARUP

March 2021
Issue 1.0

Stephenson Street Flood Defence Scheme

Moodboard

274580-ARP-XX-XX-RP-LA-0003

ARUP

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Please note, this report is intended to be viewed and printed as an A4 double-sided document with cover page.

Job Title		Stephenson Street Flood Defence Scheme			Job Number: 274580-00
Document Title		Moodboard			
Document Ref.		274580-ARP-XX-XX-RP-LA-0003			
Revision	Date		Prepared by	Checked by	Approved by
	09/03/2021		AF	JD	BO

Contents

This moodboard is only for information and not to be puslished

1.

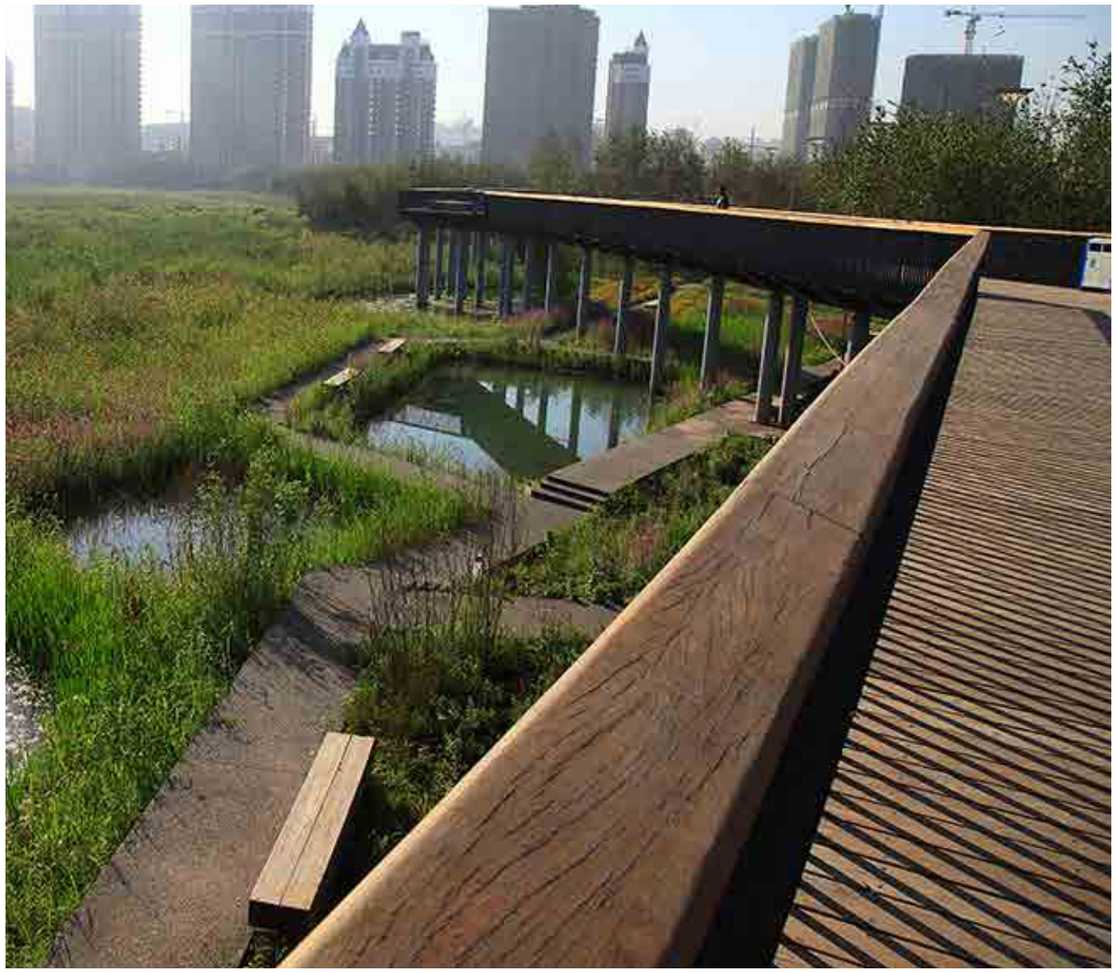
Resting in the landscape

2.

Integrating and interpreting the landscape

3.

Accessing the landscape



4.

Framing the landscape

5.

Sharing the landscape

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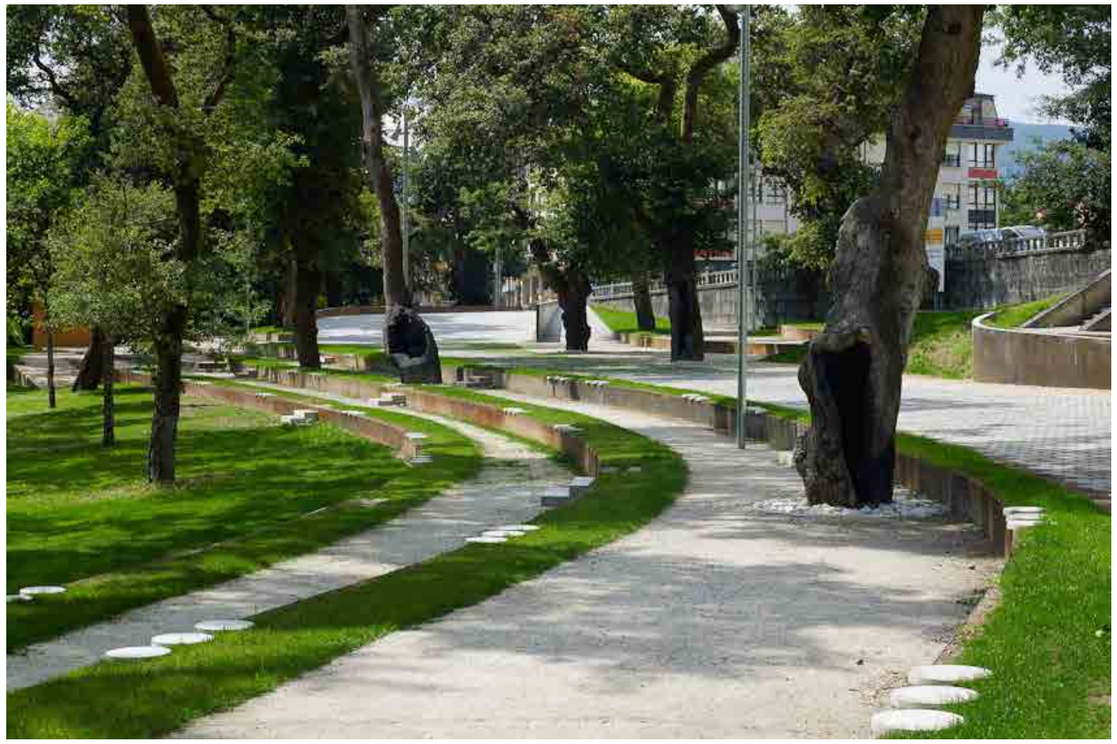
Shaping the landscape




ARUP

Appendix B – Landscape Vision Report

Stephenson Street

LANDSCAPE VISION

FINAL ISSUE | April 2020

ARUP

ARUP

Prepared by Arup on behalf of Natural Resources Wales
Job number: 246344
April 2020
Revision: Draft 01 | By: AF | Checked by: JD | Approved by: JL
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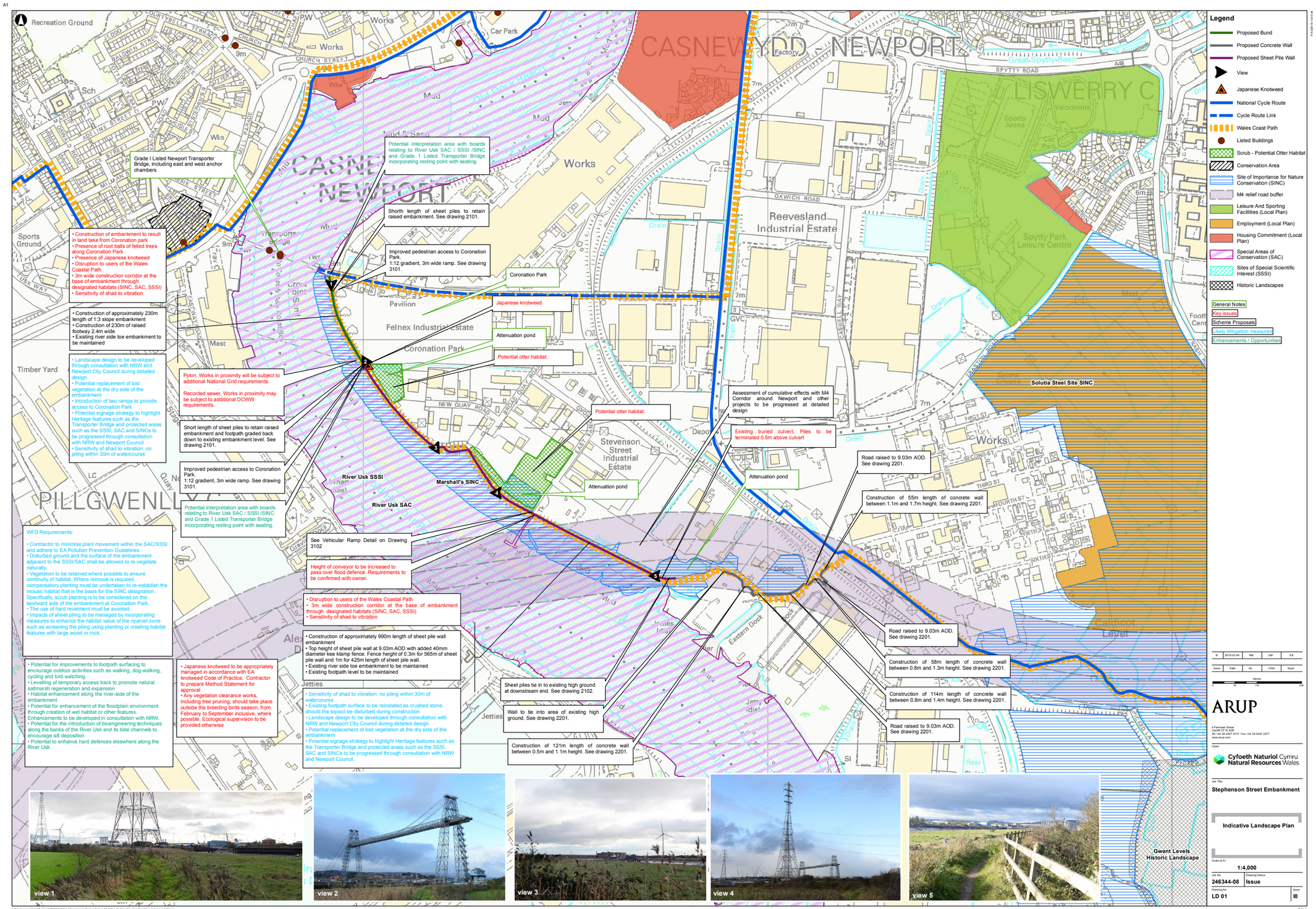
1.1 Site location

1.1 Previous Studies: Outline Business Case Project Appraisal Report_



1.2 Objectives

The main objectives set out were:

Develop a Landscape focused masterplan vision for the site maximising the opportunities that the proposed flood defence could bring and integrating this important infrastructure the best way possible to minimise its visual impact

Improve accessibility to Coronation Park and the WCP

Opportunities to transform Coronation Park into a destination for residents and visitors, with more and better soft facilities and a more organised use of the space

Opportunities to improve the experience along the WCP. Better and safer for walkers and cyclists.

Opportunities for heritage and landscape/biodiversity interpretation

Soften and integrated Newport City Dogs fence within the landscape

Opportunities to tie in the Transporter Bridge HLF application

Opportunities to engage and link with existing stakeholders proposals i.e. Living Levels

Opportunities for biodiversity gain and habitat conservation i.e. otters, great crested newt, reptiles and birds.

Embrace NRW Sustainable Management of Natural Resources SMNR Objectives

Opportunities to fullfill NRW Wellbeing Goals and UN SDGs

Table 1: How our Well-being Objectives contribute across the Well-being Goals

Well-being Goal/ Well-being Objective	A prosperous Wales *An innovative, productive and low carbon society which recognises the limits of the global environment …*	A resilient Wales *A nation which maintains and enhances a biodiverse natural environment with healthy functioning ecosystems that support social, economic, and ecological resilience and the capacity to adapt to change…*	A healthier Wales *A society in which people's physical and mental well-being is maximised and in which choices and behaviours that benefit future health are understood*	A more equal Wales *A society that enables people to fulfil their potential no matter what their background or circumstances (including socio economic background and circumstances)*	A Wales of cohesive communities *Attractive, viable, safe and well-connected communities*	A Wales of vibrant culture and thriving Welsh Language *A society that promotes and protects culture, heritage and the Welsh language, and which encourages people to participate in the arts, and sports and recreation*	A globally responsible Wales *A nation which, when doing anything to improve the economic, social, environmental and cultural well-being of Wales, takes account of whether doing such a thing may make a postive contribution to global well-being*
Champion the Welsh environment and the sustainable management of Wales' natural resources	Sustainably managing raw materials and products from the natural environment, e.g. food and timber. Encouraging and enabling businesses to follow good practice and not degrade our natural resources further. Providing opportunities for employment, including farming, forestry, fisheries and tourism, as well as opportunities for research, education and learning.	Ensuring Wales' natural resources are managed sustainably – this is our purpose. Improving the resilience of our ecosystems, improving biodiversity, and supporting Wales' ability to adapt to climate change.	Providing access to greenspace and encouraging people to become more active. Promoting the need for cleaner air and water and waste reduction. Creating green infrastructure in urban areas, offering a wide range of benefits for a high proportion of the population.	Providing opportunities for everyone to access and enjoy Wales' natural environment, regardless of where they live. Ensuring everyone in Wales, benefits from clean air and water regardless of where they live.	Enabling communities to live and work in an attractive and resilient natural environment. Enabling communities to work together to maintain and enhance the environment for their own well-being.	Using the natural environment as a backdrop or inspiration for art, literature and music, including in the Welsh language. Our historic and designated landscapes and seascapes are part of our natural heritage.	Helping reduce our ecological footprint through the sustainable management of our natural resources, thereby ensuring that our actions do not have consequences further afield.
Ensure land and water in Wales is managed sustainably and in an integrated way	Making best use of land and water, managing them in the best way and in the best place. Promoting Wales as an attractive place for business, while ensuring our land and water are managed to produce sustainable benefits and provide more jobs.	Sustainably managing land and water on a landscape scale, leading to more resilient ecosystems that are better able to cope with climate change and continue to provide benefits.	Improving the management of air, water and soils to reduce pollution and contamination and contribute to good public health. Sustainably managing landscapes which can impact positively on mental health.		Creating green infrastructure and Sustainable Urban Drainage to support safe and attractive communities.	Ensuring historic and designated landscapes and seascapes are managed as part of our natural heritage and culture.	Ensuring our land and water management and business opportunities do not lead to emissions or environmental damage that can have consequences further afield.
Improve resilience and quality of our ecosystems	Creating more resilient ecosystems, meaning that we can continue to enjoy the benefits of natural resources and attract businesses to Wales.	Delivering on our purpose, which is to pursue the sustainable management of natural resources and, as a result, make ecosystems more resilient. Reversing the decline in biodiversity, which is key if we are to continue to benefit from our natural resources Ensuring the diversity, connectivity, health and adaptability of our ecosystems to enable the long-term viability	Providing more opportunities for people to access greenspace and improve their physical and mental well-being.	Improving the natural environment where people live, making access to green space more equitable.	Creating opportunities to bring communities closer together and help make their local environment a more attractive and resilient area to live and work.	Ensuring our natural environment and designated landscapes and seascapes continue to be an integral part of the Welsh culture, providing an inspiration for the arts and supporting a wide range of outdoor sports and activities.	Ensuring our European and internationally important sites are resilient and protected and more able to adapt to climate change.
Reduce the risk to people and communities from environmental hazards like flooding and pollution	Reducing both the financial and emotional costs of damage to homes, businesses and properties.	Looking at integrated SMNR solutions to reduce the risk, severity and frequency of incidents; more resilient ecosystems will also be able to cope better with environmental hazards.	Working together to keep people healthier through the control of air and water quality and waste. Keeping people safe when incidents do occur.	Ensuring everyone can feel safe regardless of where they live.	Creating opportunities for communities to work together and support each other to reduce the impact of environmental hazards, while also bringing communities closer together.		Ensuring pollution / emissions do not dissipate more widely, e.g. into the atmosphere or water courses, to affect other countries or internationally important areas in Wales.
Help people live healthier and more fulfilled lives	Providing opportunities for learning and skills development, which will help people into jobs.		Enabling access to greenspace and encouraging people to become more active. Working with partners to understand how our work can contribute to social inclusion and public health.	Enabling equal access to greenspace. Ensuring good air and water quality and waste reduction is available to everyone, regardless of where they live.	Bringing communities together in attractive environments to live and work, while also developing skills that can help people into jobs.	Using our natural environment to inspire the arts, sports and recreation, and the practice of the Welsh language.	Enabling a better understanding of the importance of SMNR, and how unsustainable management can impact people's day-to-day lives. Creating a better understanding of wider global environmental issues and what individuals can do to help reduce impacts.
Promote successful and responsible business, using natural resources without damaging them	Creating sustainable businesses which can continue to be successful in the future.	Creating more resilient ecosystems, which can continue to provide the ecosystem services and benefits businesses require.	Promoting responsible business practices, thereby reducing the impact on our natural resources and ensuring people are able to live in a cleaner, healthier environment. Working with businesses to create a level playing field, making them aware of the most suitable options and ensuring they use natural resources wisely.	Reducing the impact of businesses on the natural environment throughout Wales, including more industrialised areas.	Building more cohesive communities through job opportunities in the local area. Encouraging business ethics to support the use of local produce, responsible environmental operations, and the development of local skills and capacity.	Facilitate opportunities for businesses involving sports and the arts on and that we manage and ensure we work with businesses in accordance with our Welsh Language Standards	Reducing businesses' contribution to global emissions and their impact on the global environment. Reducing our ecological footprint in Wales.
Develop NRW into an excellent organisation, delivering first class customer service	Developing an efficient and effective organisation, playing its part in contributing to the Welsh economy.	Delivering SMNR in both our work and our work with others.	Ensuring a cleaner environment and providing opportunities for outdoor recreation.	Enabling more equal access to the natural environment, including in urban areas.	Helping communities care for their local area, bringing people closer together, and providing opportunities for learning new skills which could lead to employment.	Helping appreciate local difference. Improving understanding of the importance of the natural environment and the need for SMNR. Providing a platform and inspiration for the arts, sports and recreation.	Sustainably managing internationally important areas. Taking the lead in sustainable management of natural resources across the world.

2 ANALYSIS

1.3 Historic Development: Man Made Landscape Vs Natural Landscape

Through the testimony of old maps we can find that the area has been historically impacted by man made landscape features. Field boundaries on the map to the left show that it use to be a area where farming was the main predominant land use. The map to the right shows a later influence of the industrial revolution and the coal industry with the Transporter Bridge as the main symbol of that era. At the same time we can appreciate how natural landscape features such us the meandering Usk estuary and its afluents have also been an important presence within this site.

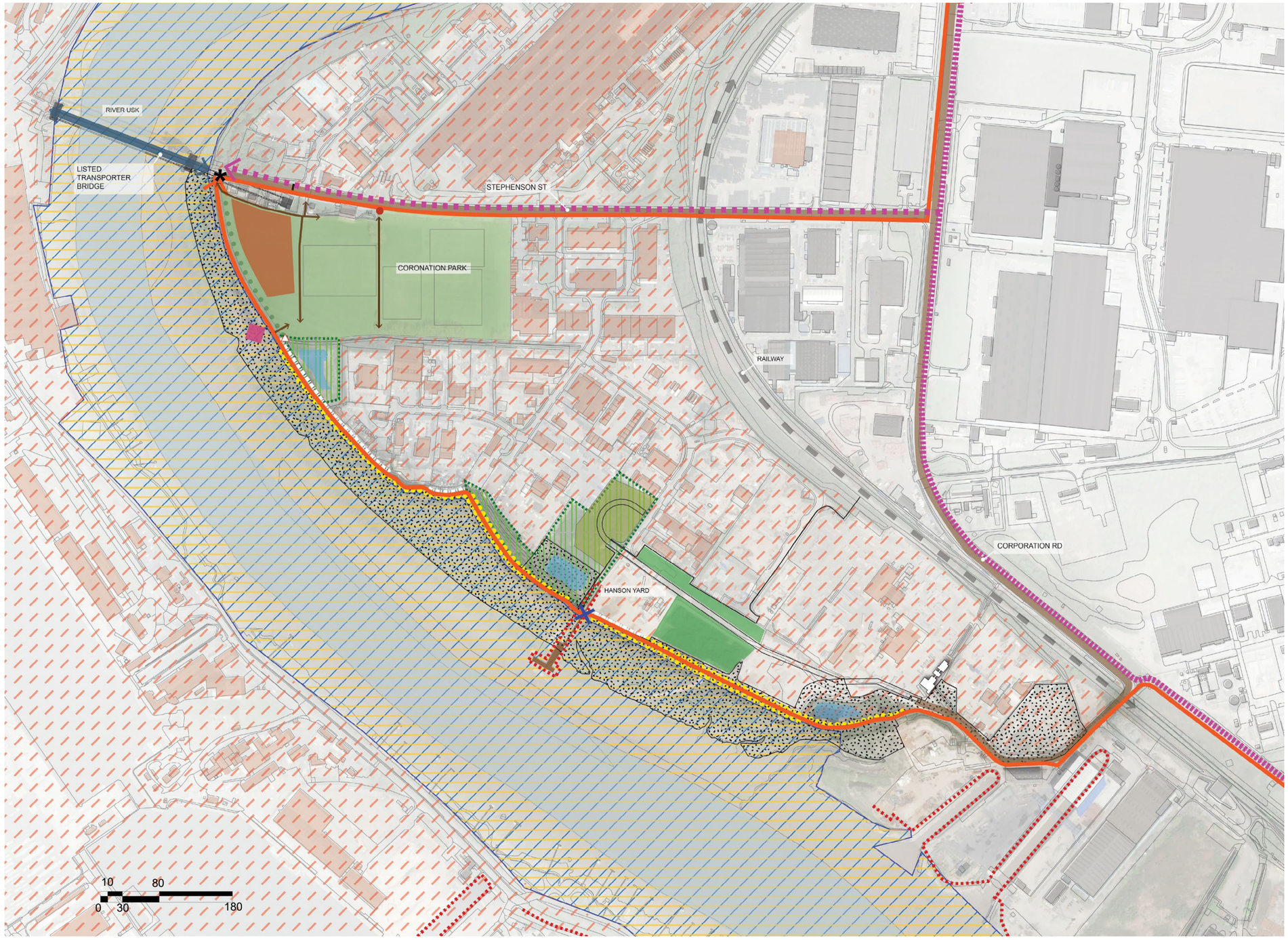
1800´s Map

1900´s Map

2. ANALYSIS

2.1 Analysis Plan

- Wales Coast Path
- Japanese knotweed
- Scrub - Potential Otter habitat
- Great Crested Newt
- Land use
- 2 m high chainlink fence
- Main crossings
- Existing conveyor belt
- High vegetation
- Existing trees
- Coronation park
- HV Pylon
- Listed Transporter Bridge
- River usk
- Kissing gate
- Access gate
- River Usk SSSI /SLA
- SINC
- Newport City Dogs Home fence
- Existing desired lines
- Entrance to Coronation park from Stephenson Street
- SAC - Special Areas of Conservation
- Safeguarding Wharves
- Sustrans National Cycle Route Route 4, London to Fishguard
- Cycle route link
- Existing vegetation



2.2 Landscape Character Areas

1 OPEN

Open views towards the river and the Listed Transporter Bridge (west) and towards Coronation park (east)
Low vegetation along the footpath and embankment. The HV pylon is another focal point in this case detracting the view

2 MIXED

View towards the river are in some sections blocked by mid to high vegetation. Short sections of open views are interpersed with low vegetation to the west. The east side of the footpath runs adjacent to the industrial area blocking views in this direction

3 ENCLOSED

Mainly enclosed views to both sides of the footpath

4 INDUSTRIAL

Industrial character with predominatly hard landscape in poor condition.
Lack of safety due to unappropiate footpath width and materials together with close proximity of heavy vehicles.

NATIONAL LANDSCAPE CHARACTER

Morfa Gwent
Key characteristics: Alluvium, Reclaimed Landscape, Divided by the Usk estuary, Reens and willows or hedgerows, Flood embankment to the sea, Fertile soils and agriculture, Wet pasture, Archeologically important, Comparatively little settlement, Open views between hills in Wales and England, Major development on fringes

PRoW - Footpaths

Waterloo Conservation area
Policy Number: CE7

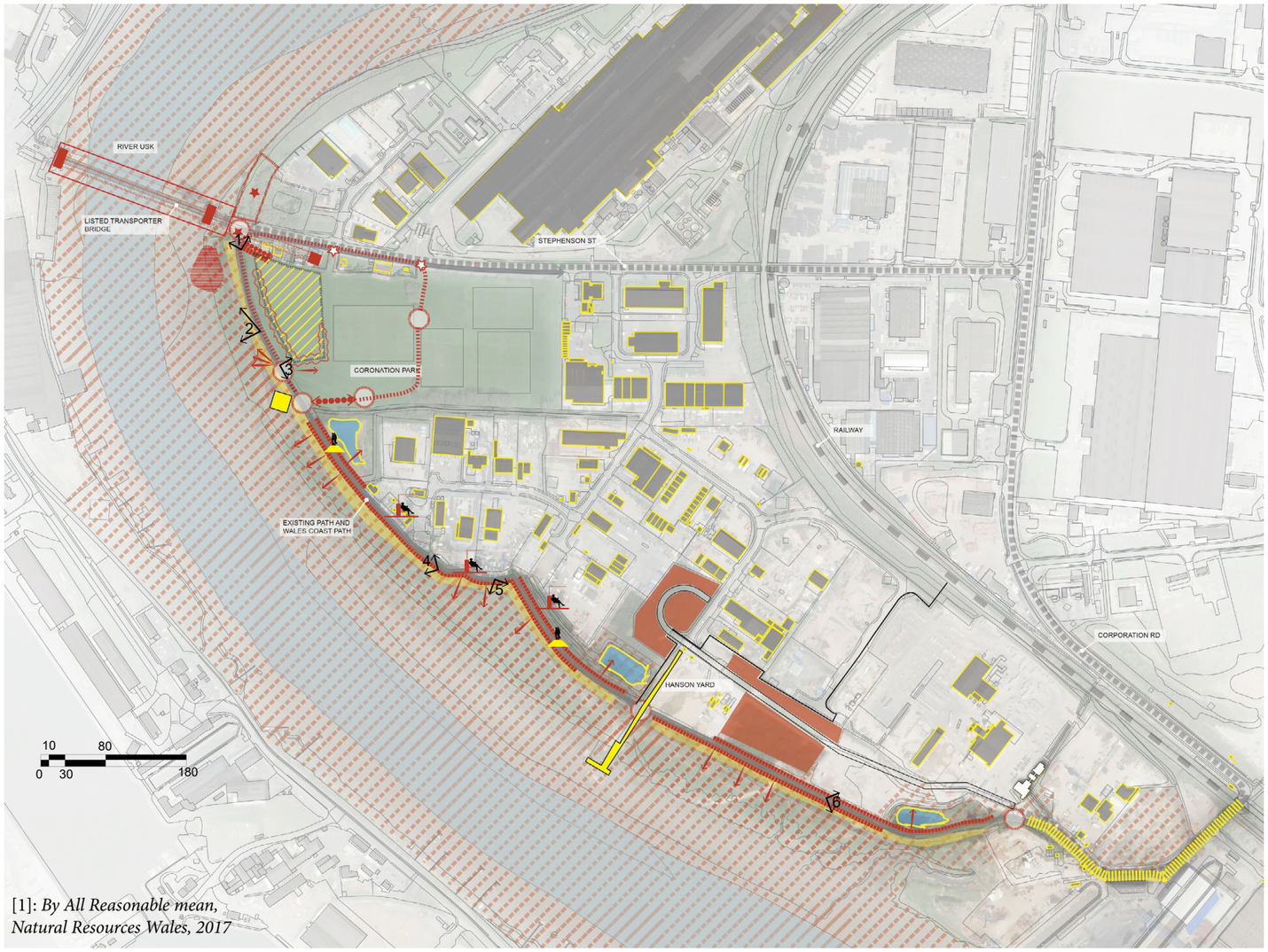
Listed building

Archaeologically sensitive Areas
Policy Number: CE6

2.3 Opportunities and constraints plan

OPPORTUNITIES	NRW WG	UN SDGs
Upgrade and enhance existing desired line. Improve accessibility, width and gradient		
Upgrade and enhance existing kissing gate and entrance area. Opportunity for new welcoming entrance with orientation information and increased size gate in order to improve accessibility and inclusion [1]		
Opportunities for gathering, dwelling and interpretation		
Opportunity for vegetation clearance to improve the sense of safety and provide extra space for seatings		
Opportunity to improve views towards the river Usk, Listed Transporter Bridge and the ponds		
Proposed wall: Opportunities to create interest along the path, seatings, shelter from elements, improving wayfinding and information boards [1]		
SSSI, SINC and SAC areas: Opportunities to enhance wildlife protection and interpretation		
Opportunities within the park. Create a circulation loop based on existing desired lines		
Soften fence of Newport City Dogs Home		
Listed Transporter Bridge Opportunitiy for Heritage Interpreation		
Enhance existing entrances to Coronation park		
Potential to recompact/restore SAC/SSSI damaged area		
Opportunity for screening and softening		

CONSTRAINTS
H&S risk through industrial area due to narrow footpaths on busy road
Existing HV pylon
Existing conveyor belt
Embankment
Limited space on the top of the embankment
Industrial buildings



[1]: *By All Reasonable mean, Natural Resources Wales, 2017*

1

2

3

4

5

6

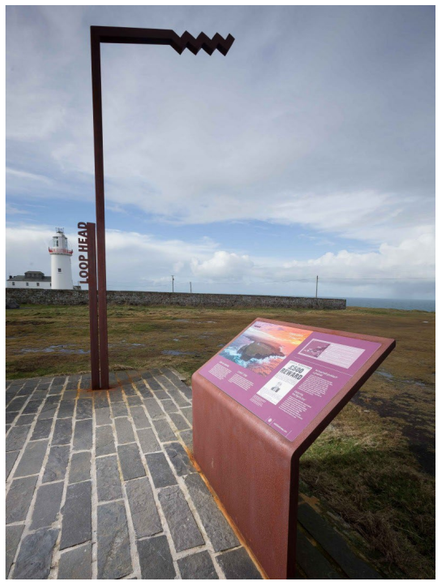
3

PRECEDENTS AND MOODBOARD

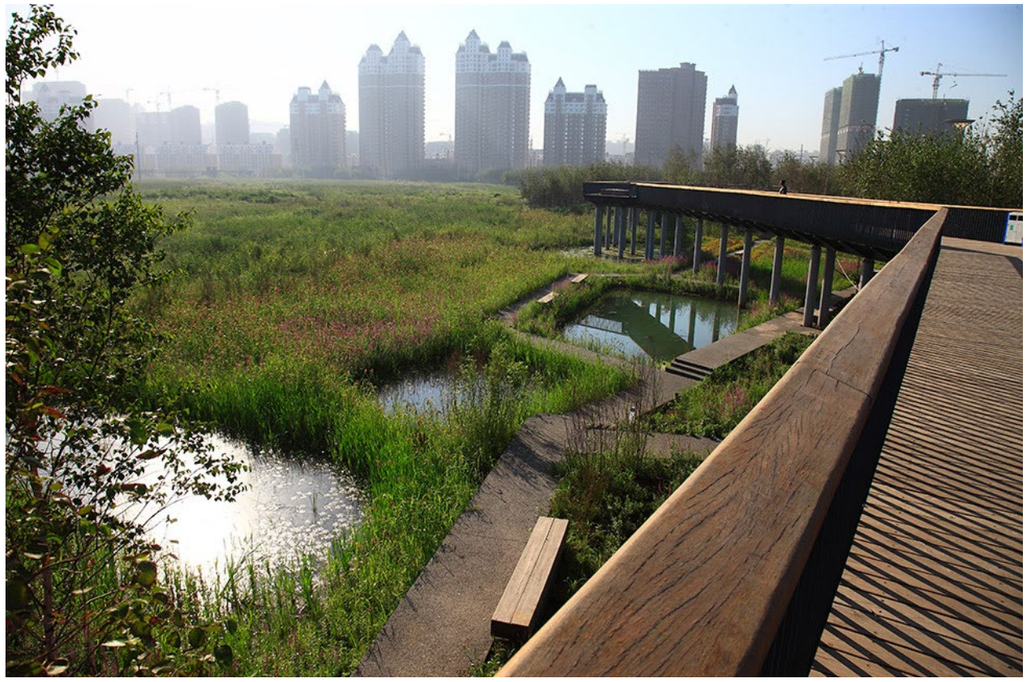
3. PRECEDENTS AND MOODBOARD

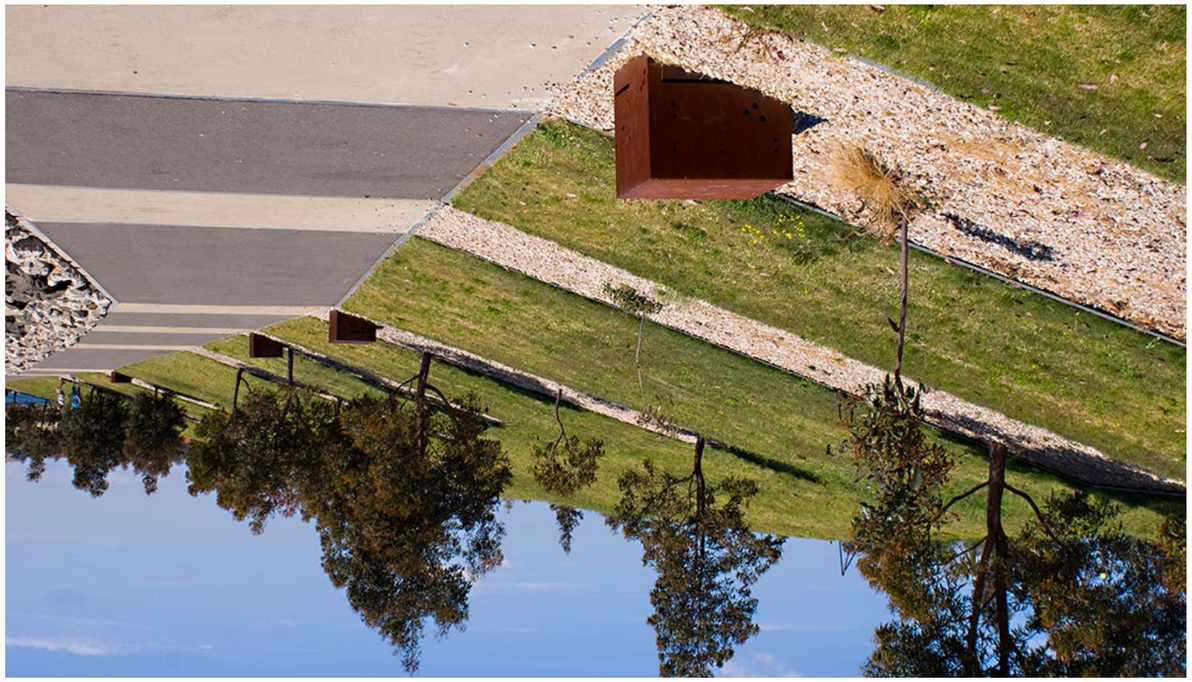
3.1 Resting in the landscape

3.2 Integrating and interpreting the landscape



3.3 Accessing the landscape





3.4 Framing the landscape

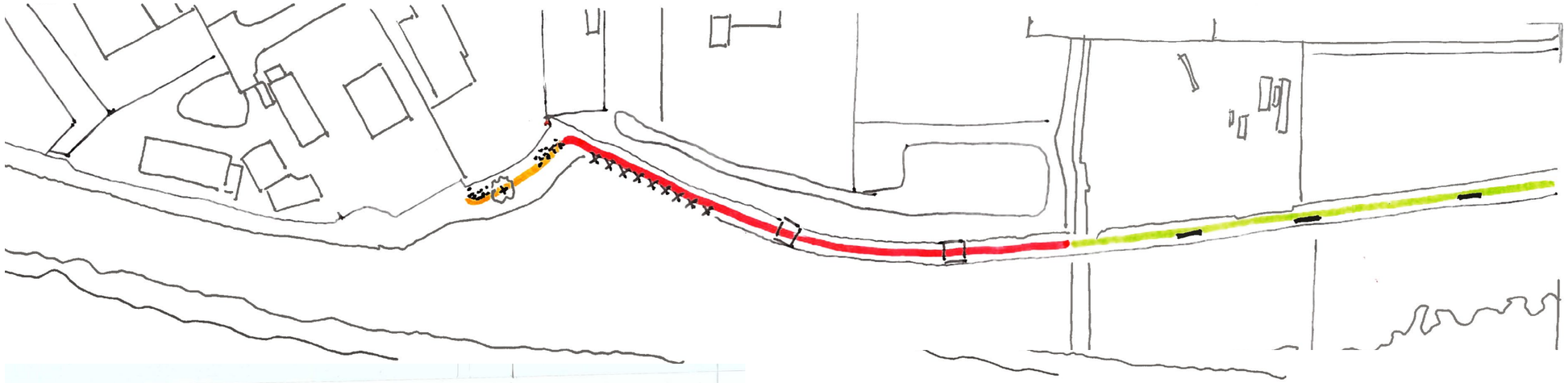
4 SKETCH IDEAS / BRAINSTORNM

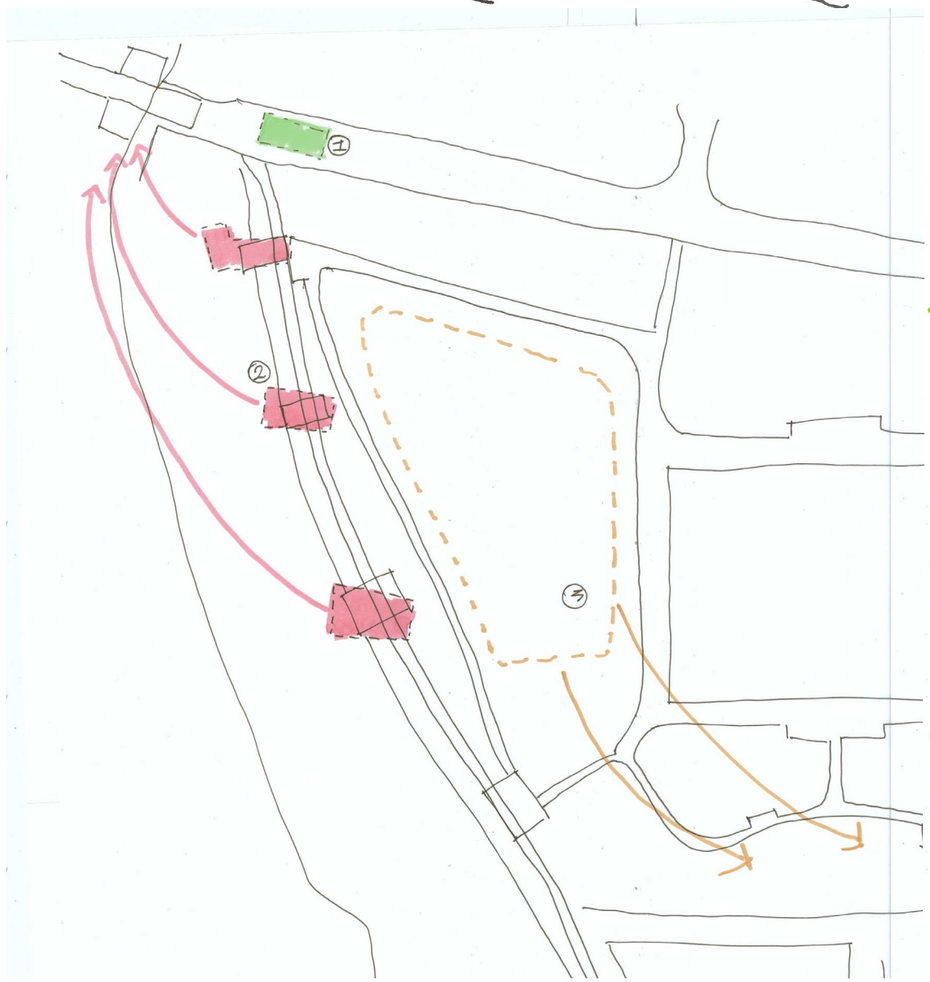
4. SKETCH IDEAS AND BRAINSTORM

4.1 A linear route

Through a brainstorming session the first ideas and sketches were develop feeding from the previous analysis and the objectives defined on the brief.

The landscape and visual integration of the flood defence and the opportunities for amenity were first mapped out. The proposed flood defence changes in height and character (from an earth bund to a sheet pile) and therefore the propose landscape needs to respond to this. Keeping the views towards the river Usk was initially a challenge on some areas (in red), whereas the areas in green and yellow were easier to integrate. Resting places and areas of interest at regular intervals would reflect on the objectives set out in current accessibility guidance including BS3800 Design of an accessible and inclusive built environment and By all reasonable means (NRW).





PROPOSED WALL BELOW EXISTING GROUND LEVEL

PROPOSED WALL IN BETWEEN 1.m AND 1.9m ABOVE GROUND LEVEL

PROPOSED LOW PLANTING

PROPOSED TREE PLANTING

xxxx REMOVE VEGETATION TO OPEN UP THE VIEWS TOWARDS THE RIVER AND INCREASE THE SENSE OF SAFETY

PROPOSED WALL IN BETWEEN 0.5M AND 1M ABOVE GROUND LEVEL

PROPOSED CANOPY SHELTER

IMP: DOES THIS REQUIRE TO BE SPLIT INTO ZOONED AREAS?

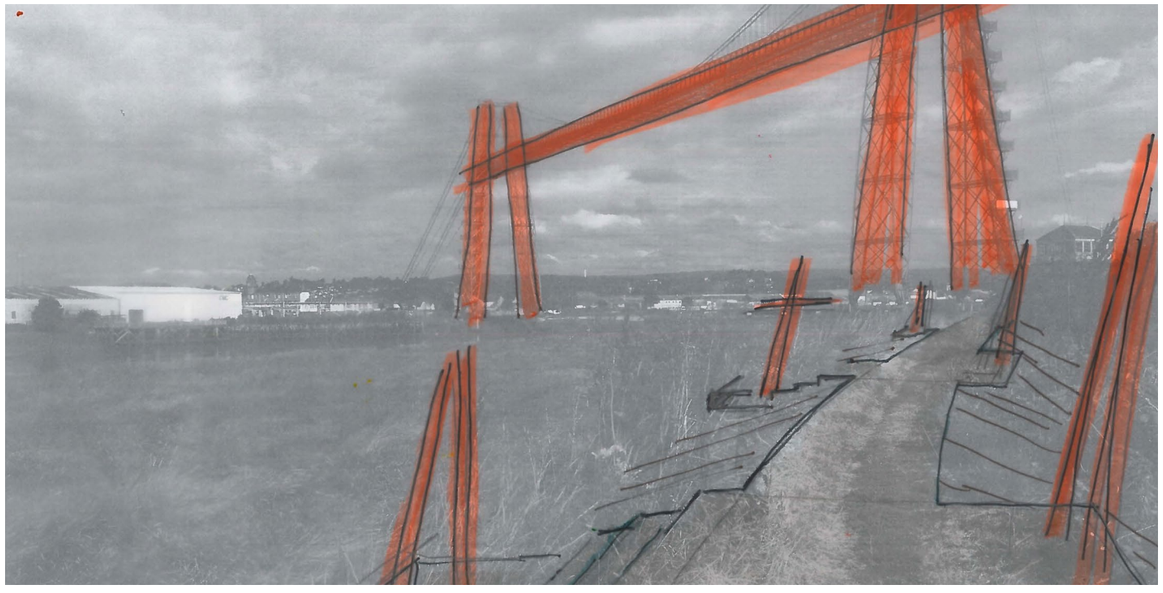
PROPOSED SEATINGS

1 CAFE.
ENHANCE MORE THE ENTRANCE AREA WITH A CAFE.

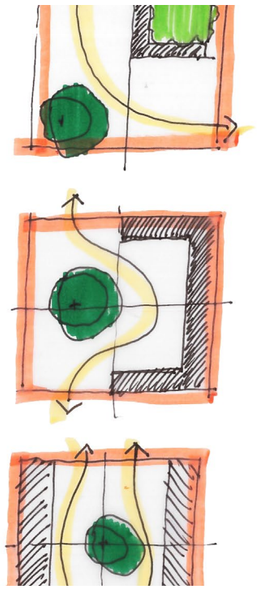
2 ORIENTATE DIFFERENT THE PUBLIC SPACES ON THE EMBANKMENT IN ORDER TO HAVE BETTER VIEWS TOWARDS THE BRIDGE

3 IS IT POSSIBLE TO RELOCATE THE ~~FOOTBALL PITCH~~ AT THE → DOG FENCE END OF THE PARK?
THE AREA AT THE END OF THE PARK IS THE MOST "DEAD".
INSTEAD, THE AREA WHERE THE EXISTING DOG FENCE IS, IS THE MOST APPROPRIETE TO PROPOSE CONNECTION TO THE EMBANKMENT.

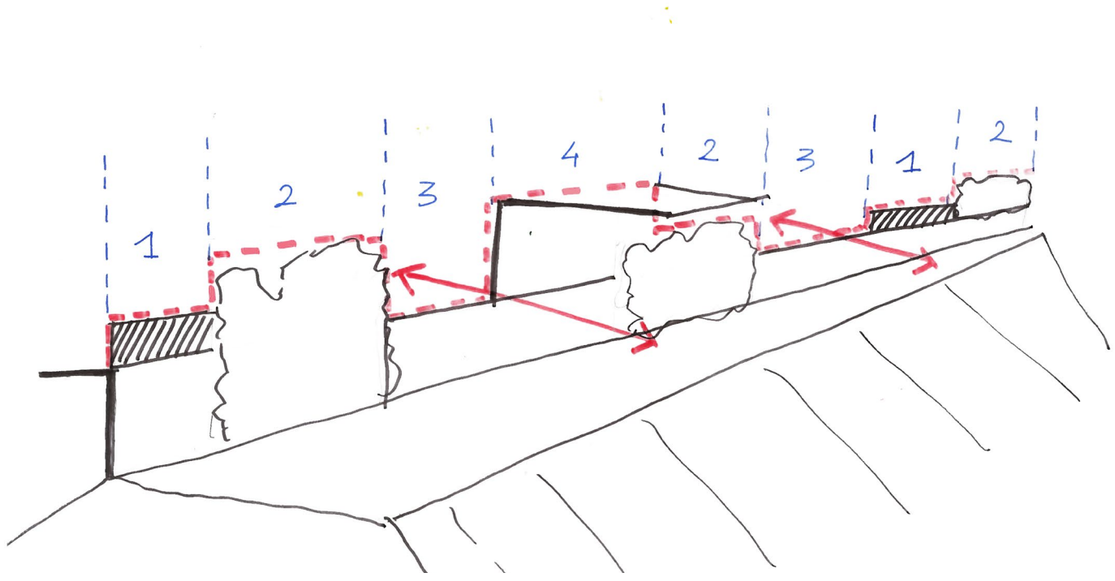
4.2 Heritage, geometry and rythm



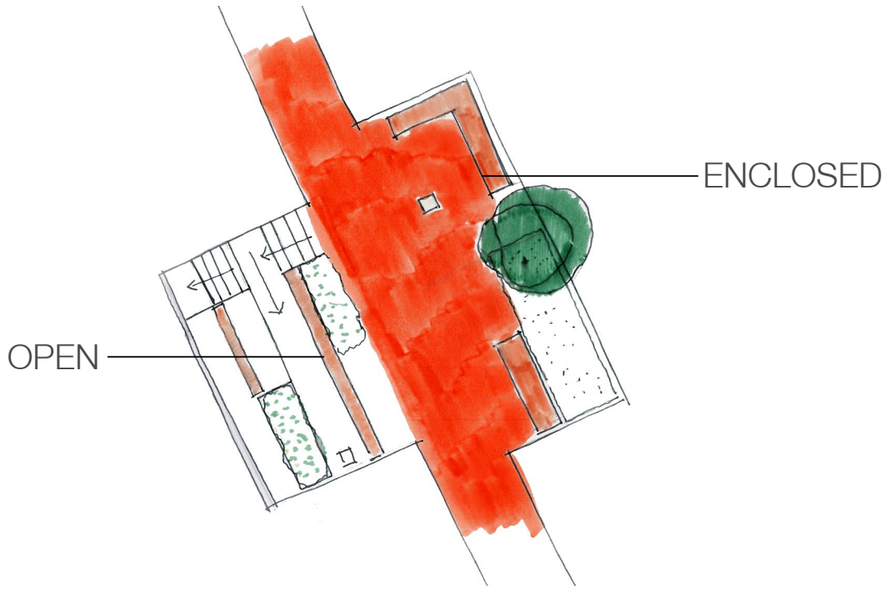
The Transporter Bridge and its industrial heritage is a focal and dominating vertical element of the landscape. There is an opportunity to respond to this and create a theme that runs through the site This could provide identity and character making the space read as a whole as well as easier to navigate.



The rigid geometry of the Transporter Bridge offers contrast that seats well within the landscape. This tension between linear, man made geometries and the more sinuous lines of the landscape could be a starting point in helping to the define the series of spaces along the Wales Coast Path and can also be repeated along the site.

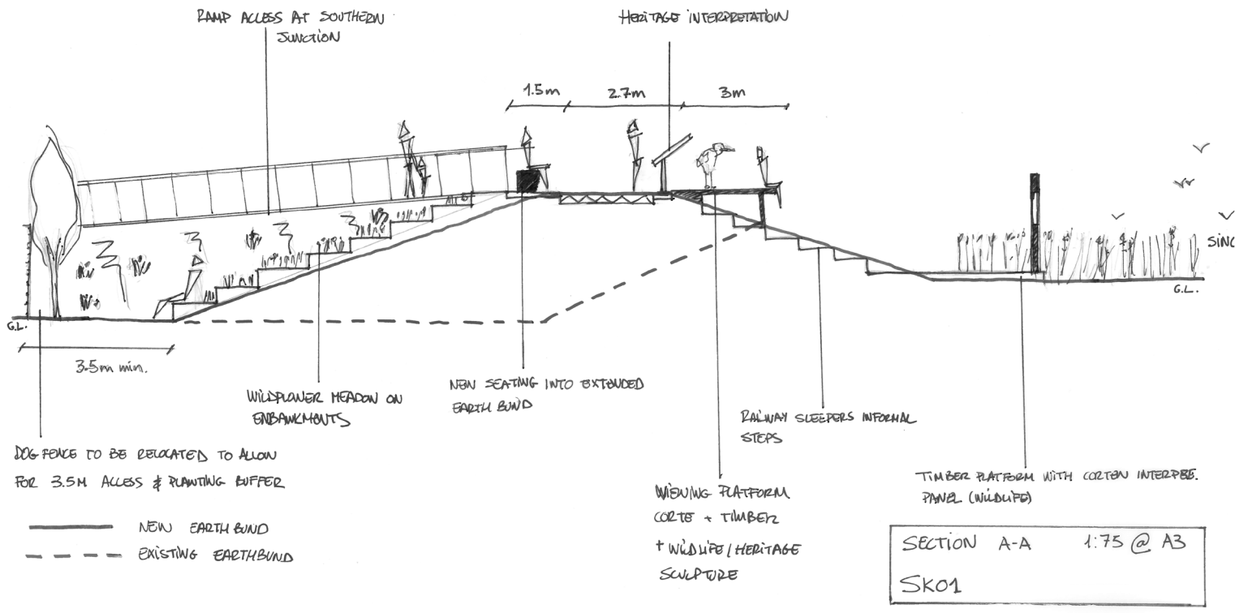


Finding rhythm in the landscape is important to make the space easier to read and navigate. Given the linearity nature of the site, repetition of recognisable elements provides rhythm. These elements would help framing the landscape and manage the user experience which changes from open views, to framed views and enclosed spaces.



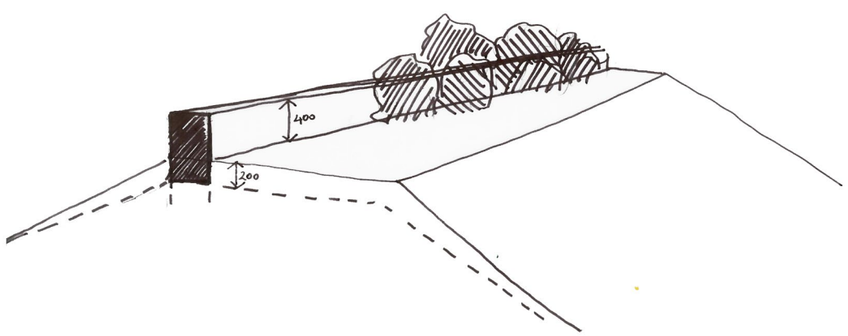
Intimate spaces would offer opportunities for both tranquil enjoyment of the landscape and social interactions/ gatherings. The spaces should provide both the opportunity for shelter (i.e.wind, rain,etc) but also the ability to experience the openness of the landscape. Been able to get closer to the SSSI/SAC/SINC would be important in terms of connection to nature but also to offer a different visual perspective of the landscape.

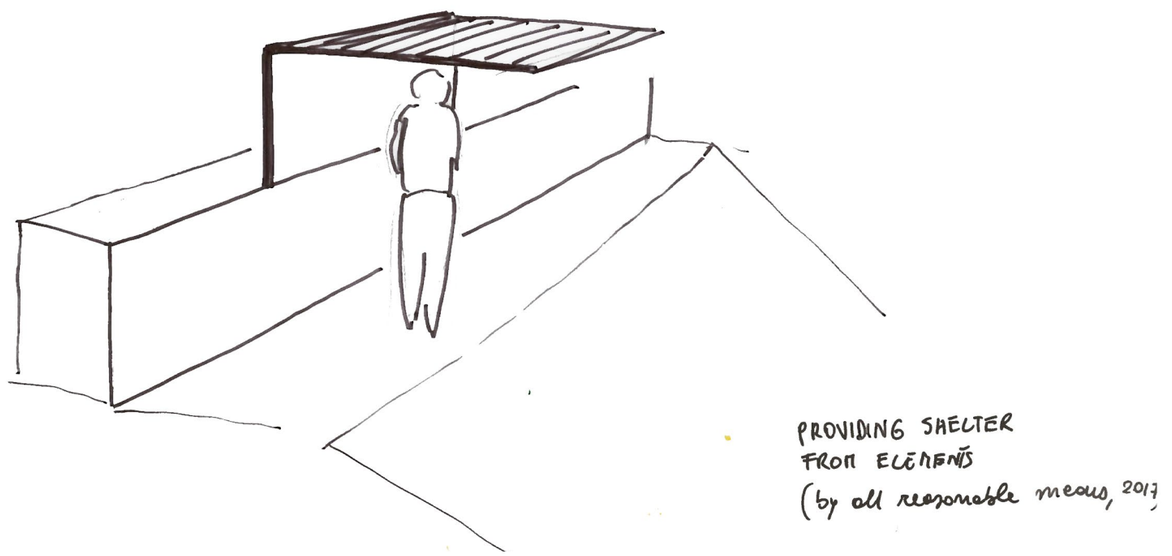
4.3 Access, amenity and integration



Better access from and into Coronation Park was one of the main objectives from the outset. One of the early options included a fully inclusive loop walk that connected the park and the flood embankment. To achieve this and deal with the change in level, special measures are required such as a very long ramp, steps and enhanced entrances into the park. At the same time the existing embankment offers opportunities for amenity and access. Viewing platforms and interpretation areas where considered.

Integrating the proposed flood defence, especially where it takes a sheet pile form, was also one of the main objectives. Some ideas were explored such as, utilising the new wall for seating where the heigh permitted or integrating it with a shelter structure.

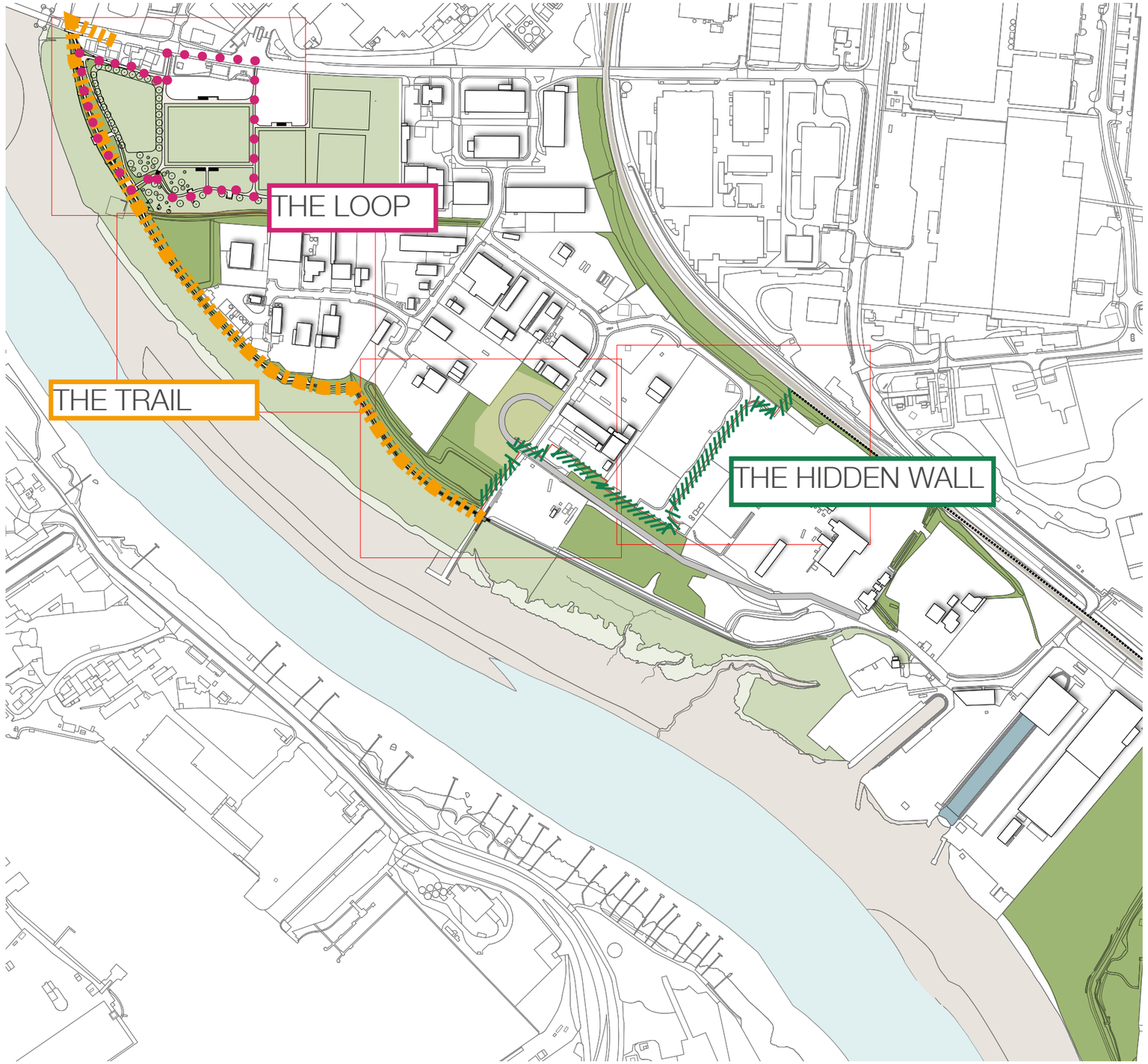




5

ASPIRATIONAL MASTERPLAN

5.1 The vision



The vision is for this area of Newport to become a **destination on its own right**. A place lead by nature in contrast with the urban character of Newport and its industrial background. A place to get closer to nature. A place for both active engagements and self reflection. A place for health and well-being, where the strong heritage of Newport Industrial Era meets, protects and educates about the unique landscape character of the levels , the Usk Estuary and all its environmental designations.

THE LOOP

Access to the park should be enhanced at various points, with a more welcoming experience. There is an opportunity to improve Coronation Park's spatial arrangement, defining better spaces with improved and new footpaths. But the main opportunity would be to **inclusively link the park with the flood bund** allowing users to navigate a full loop.

THE TRAIL

Active engagement would be delivered by the enhanced Wales Coast Path experience where users would be able to **walk, run or cycle in a better and safer environment**.

Self reflection would be delivered through intimate and tranquil spaces designed to reconnect with nature but also to socialise with other users.

In general terms the proposed works would result in an opportunity to **improve Heath and Well-being** for residents and visitors. Along the trail opportunities for **interpretation and art in relation to the landscape and its biodiversity** are considered.

THE HIDDEN WALL

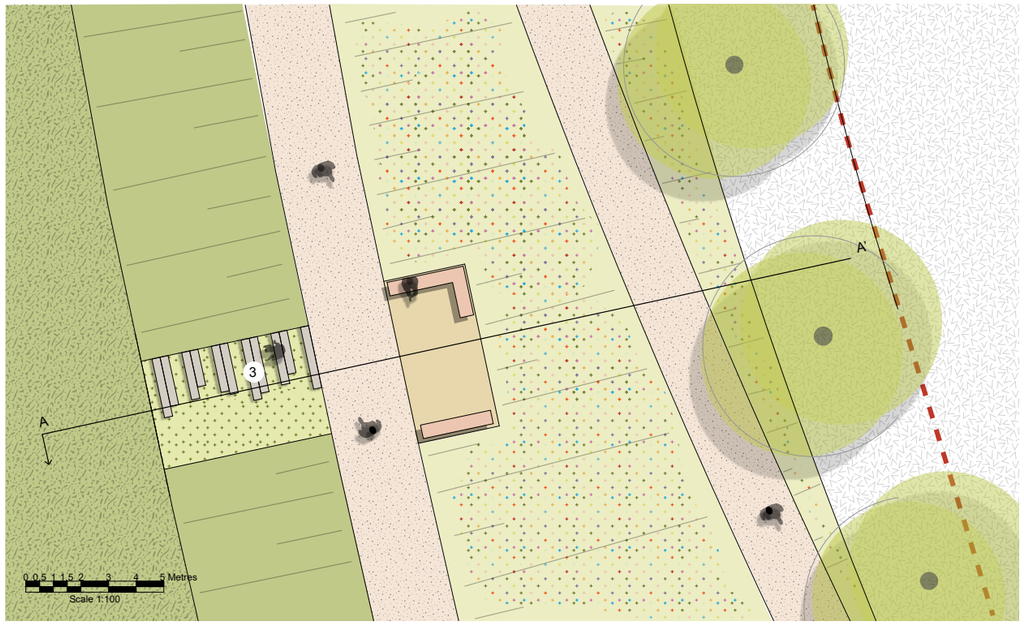
The section where the flood defence departs from the Wales Coast Path is less sensitive but effects on key views should be considered. The setting of the proposed flood defence solution along this sections should be integrated through the use of **screening planting**.

5.2 Area 1 Plan

KEY

- Existing park vegetation
- Existing SSSI wetland vegetation
- SSSI enhancement vegetation and habitat improvement
- New compacted gravel footpath
- New permeable paving
- Wildflower mix planting
- Proposed parkland trees
- Existing dog fence
- Interpretation boards
- Informal seating/steps
- Seating
- Treated hardwood decking
- Existing footpath retained
- Ornamental planting
- New earth embankment on existing footpath alignment
- Sheet pile wall
- Structures built on the sheetpile wall to provide shelter every 150m

5.3 Area 1 Details



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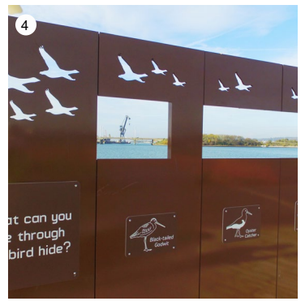
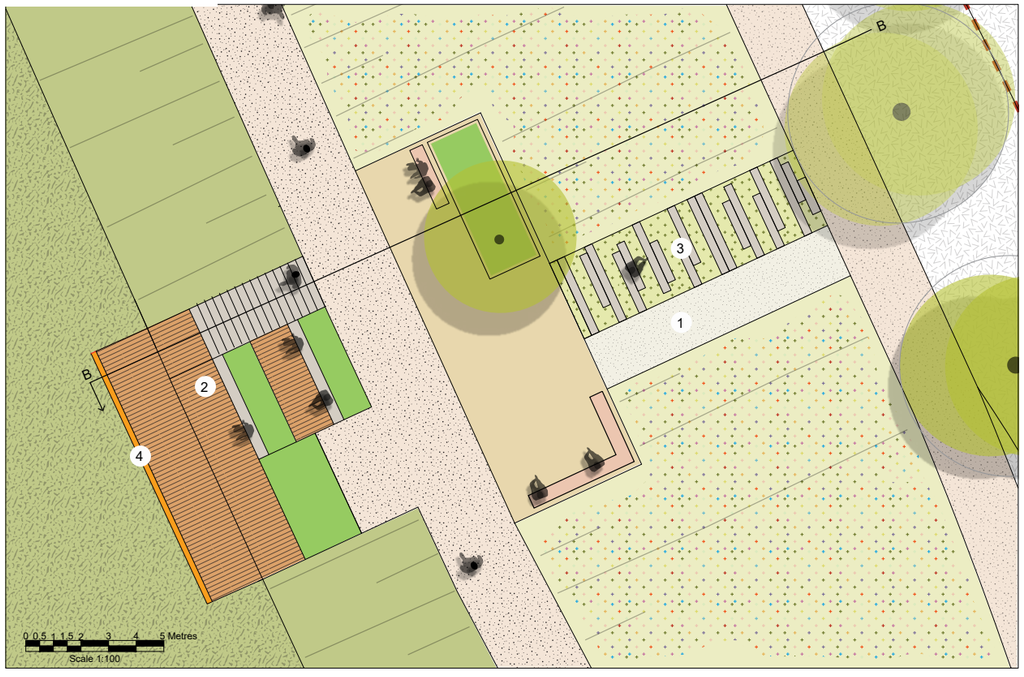
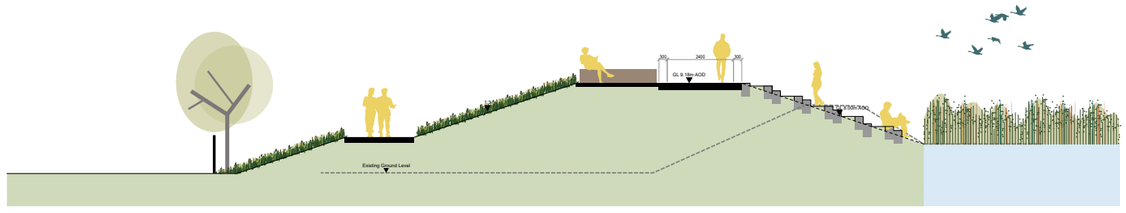


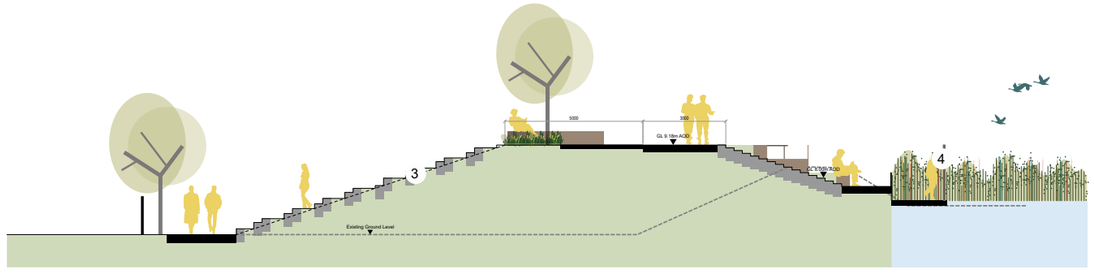
SUB-AREA 1.1



SUB-AREA 1.2

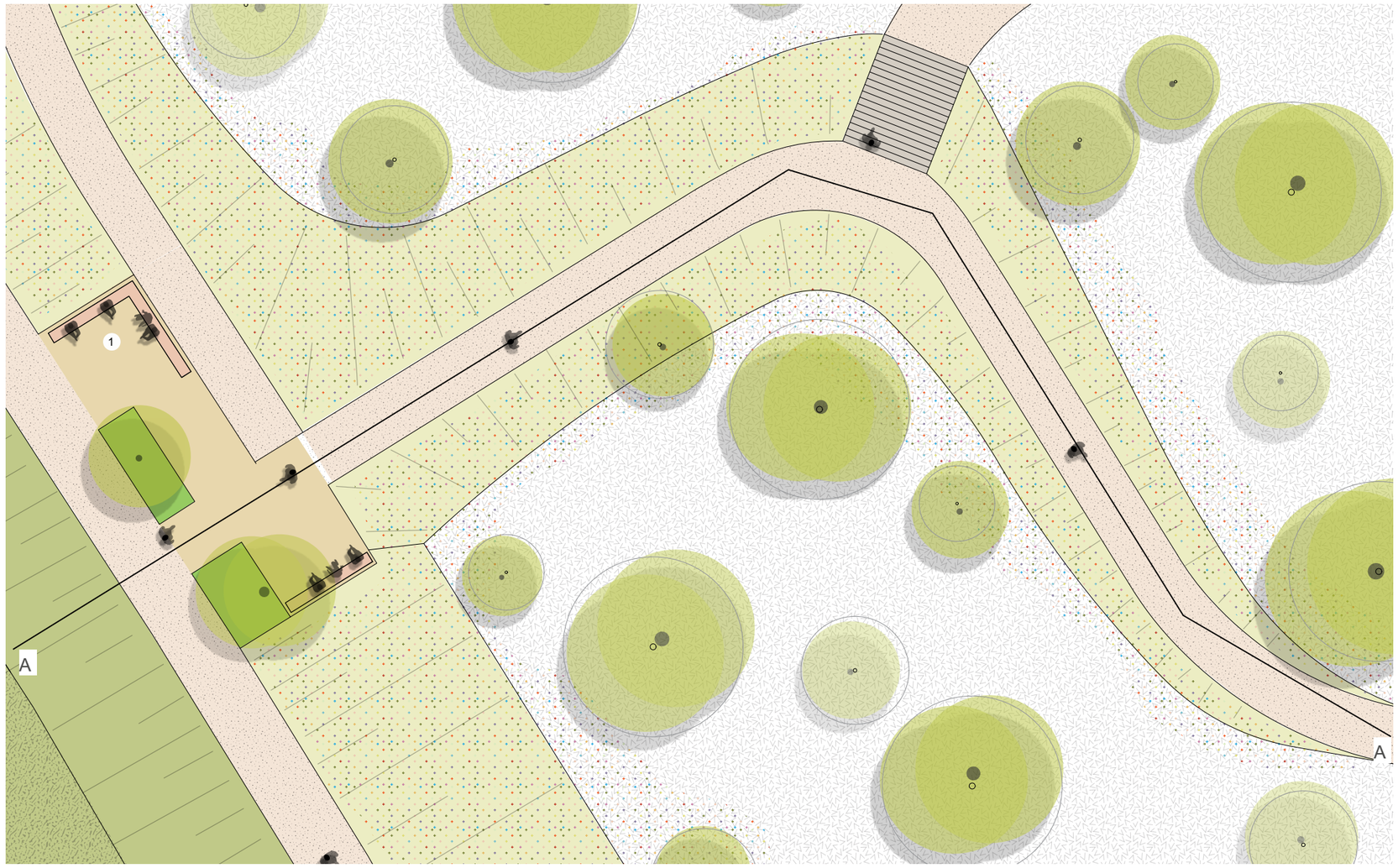


Section AA



Section BB

5.4 Area 1 Details



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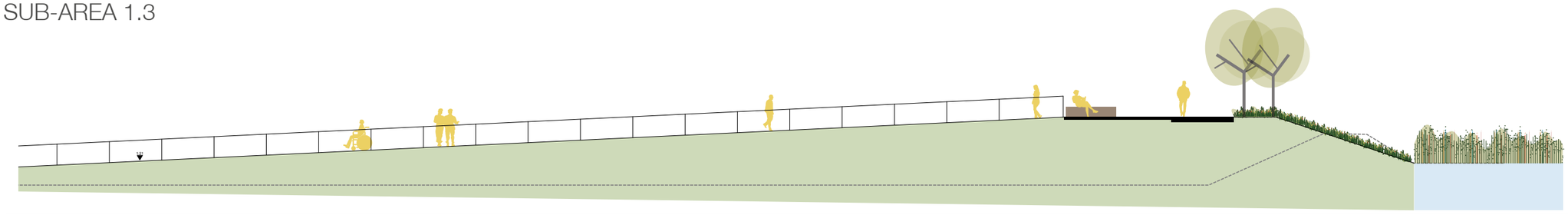
- Structures built on the sheetpile wall to provide shelter every 15

SUB-AREA 1.3



Section A-A

5.5 Area 2 Plan

KEY

- Existing park vegetation
- Existing SSSI wetland vegetation
- SSSI enhancement vegetation and habitat improvement
- New compacted gravel footpath
- New permeable paving
- Wildflower mix planting
- Proposed parkland trees
- Existing dog fence
- Interpretation boards
- Informal seating/steps
- Seating
- Treated hardwood decking
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- Ornamental planting
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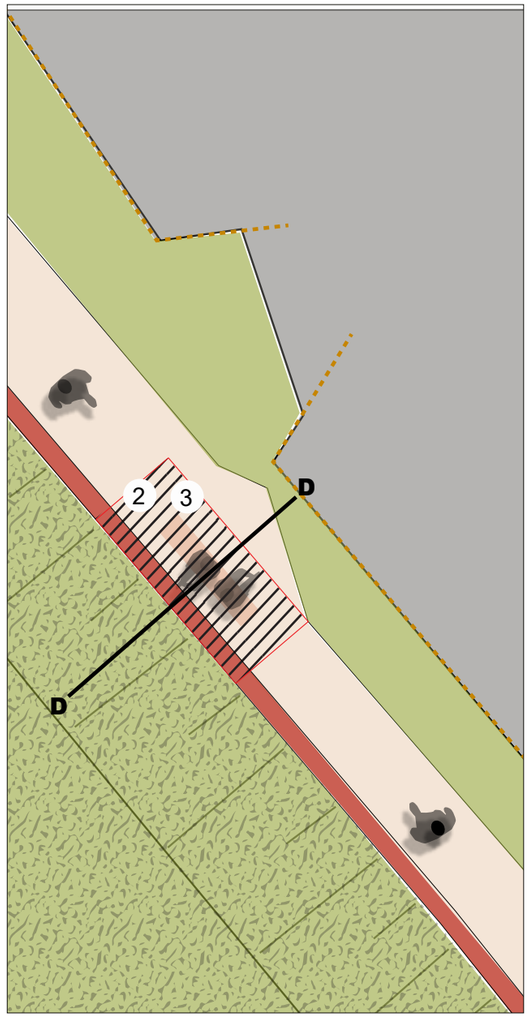
- Sheet pile wall
- Structures built on the sheetpile wall to provide shelter every 150m

5.6 Area 2 Detail



Shelter structure

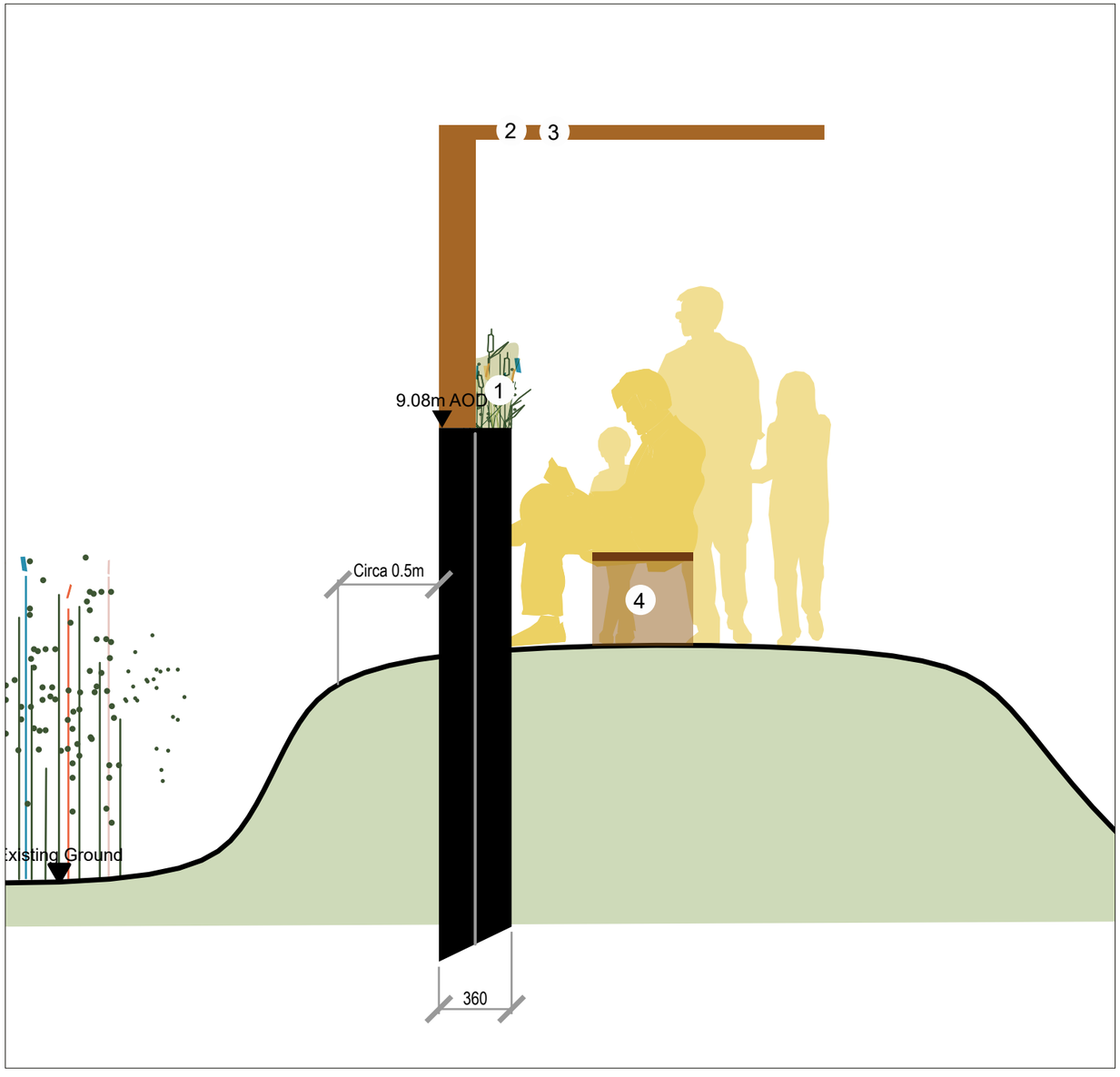
Seatings

Existing designeted wetland vegetation

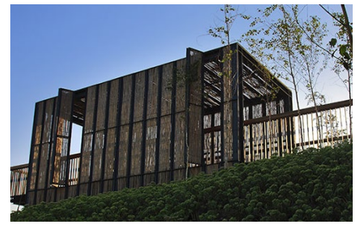
Existing footpath retained

Sheet pile wall

Detail 04 Plan

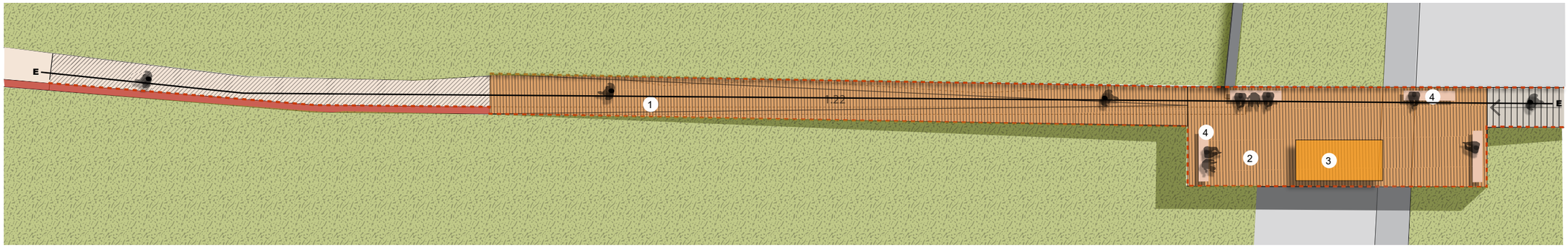


Section DD Scale 1:25



5.7 Area 3 Plan

5.8 Area 3 Detail



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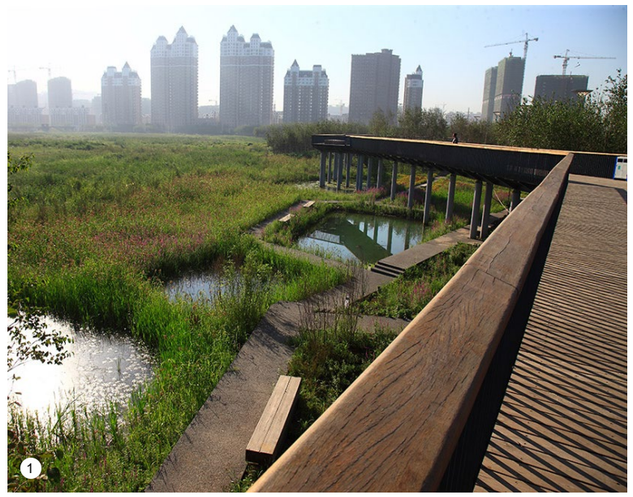
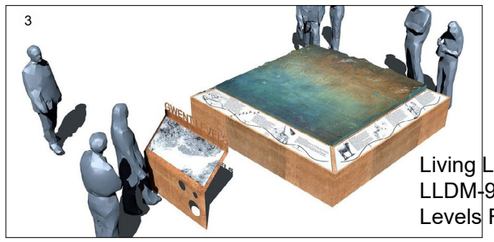
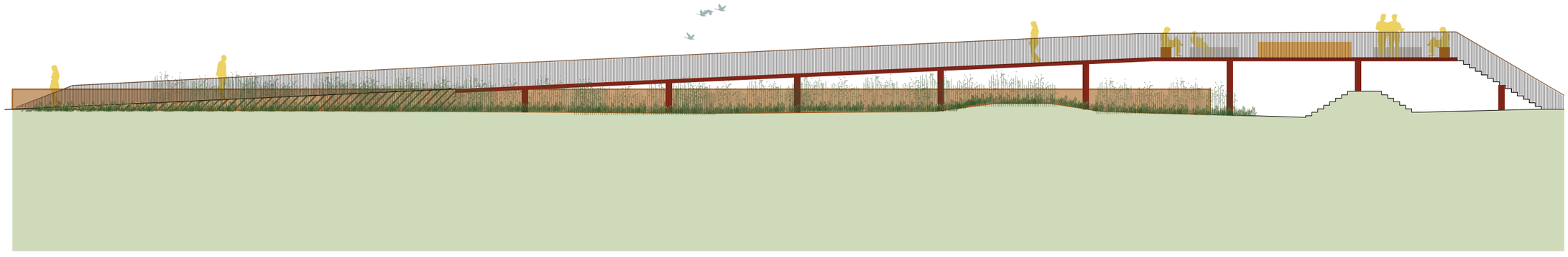




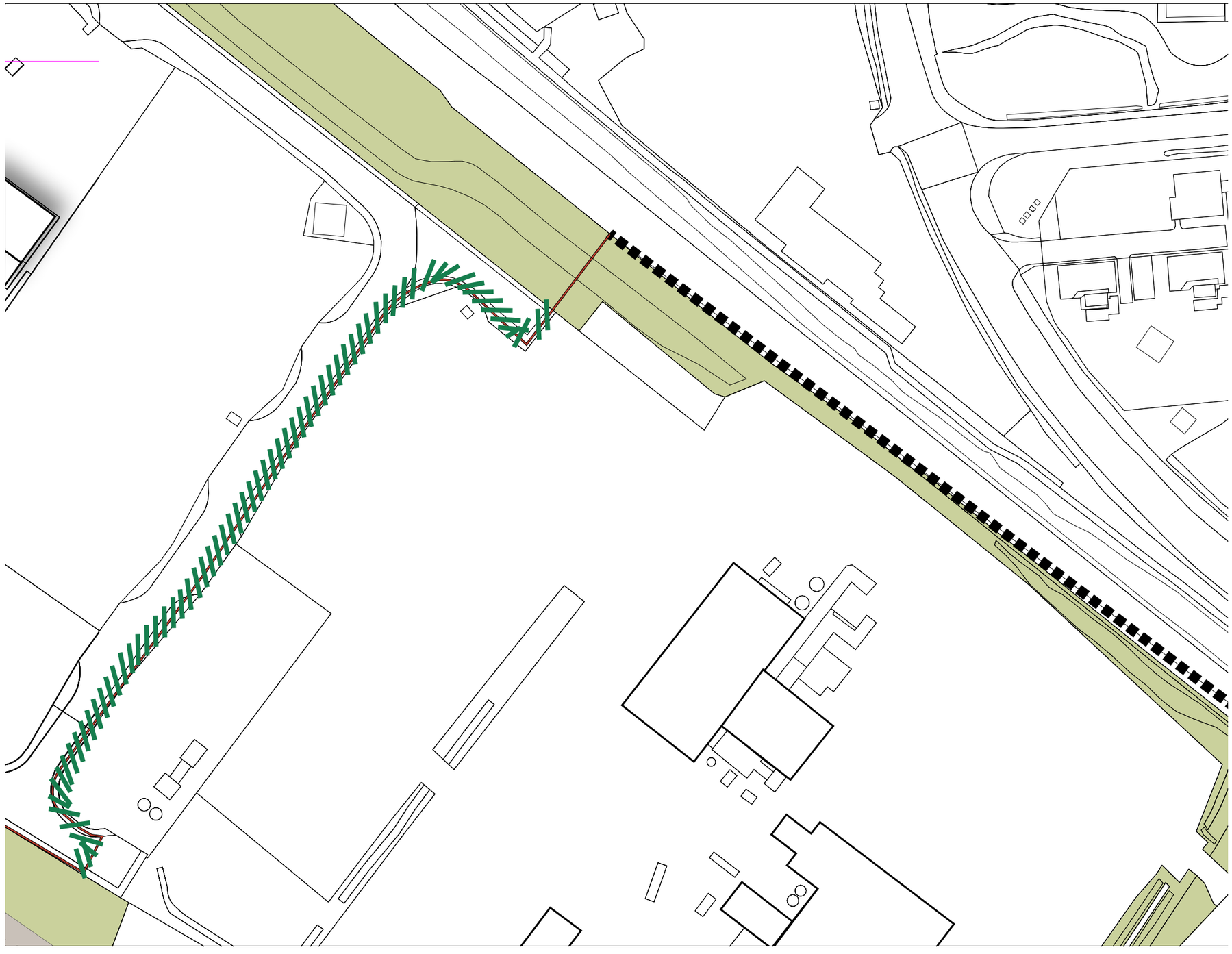
Living Levels
LLDM-9 Gwent
Levels Revealed

Detail 05 Plan



Section AA Scale 1:100

5.9 Area 4 Plan



KEY

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- Existing dog fence
- Interpretation boards
- Informal seating/steps
- Seating
- Treated hardwood decking
- Existing footpath retained
- Ornamental planting
- New earth embankment on existing footpath alignment
- Sheet pile wall
- Screen Vegetation

Stephenson Street

LANDSCAPE VISION

ARUP