

**Apt**

**Dayhouse Quarry**  
Design and Access Statement

April 2022

Quarry Haul Road, Apron and Slipway Improvements  
PL-DAS-001

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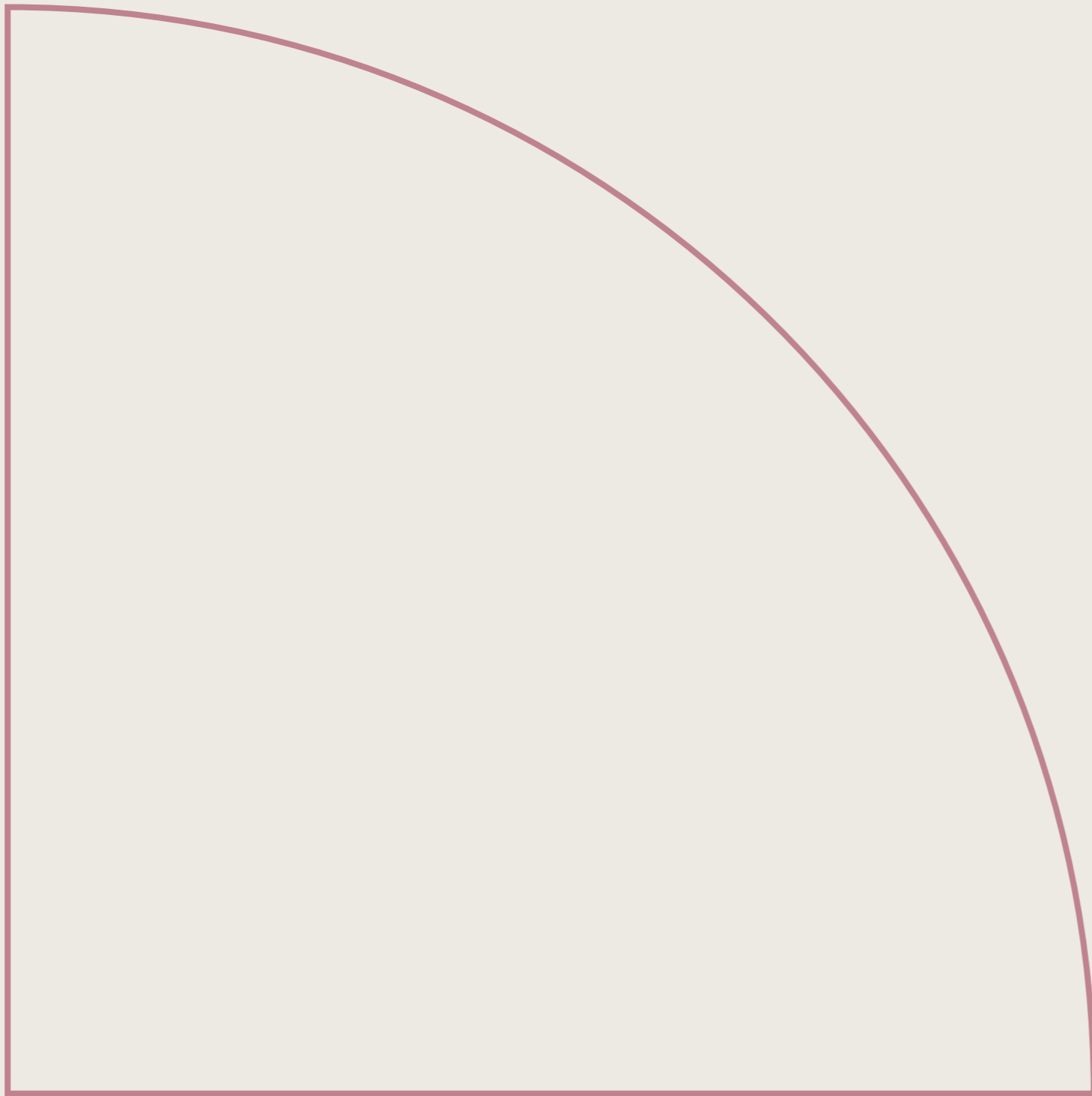
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# 1.0

Introduction

## 1.1 Introduction

This document has been prepared in support of a planning application for improvements to the facilities at the Dayhouse Quarry adjacent to the village of Tidenham in the Forest of Dean.

The proposals aim to improve facilities within the Dayhouse Quarry by creating safer access to the site and water column, for every day use.

This document sets out the proposed improvements which are focused on:

1. Re-profiling and edge protection to the existing quarry haul road.
2. Improved water-level access with a new quay / apron located at the base of the quarry haul road.



## 1.2 Professional Team

Architect: Apt

Project Management: Radcliffes

Planning Consultant: Savills

Cost Consultant: Gardiner & Theobald

Structural Engineers: AKTII

Services Engineers : AECOM

The logo for Apt, consisting of the letters 'Apt' in a bold, black, sans-serif font.The logo for Radcliffes, featuring the word 'Radcliffes' in a black, serif font with a stylized 'R'.The logo for AECOM, featuring the word 'AECOM' in a bold, black, sans-serif font.The logo for GT GARDINER & THEOBALD, with 'GT' in a large blue font and 'GARDINER & THEOBALD' in a smaller blue font to its right.



**2.0**  
Site




## 2.1 Site Location

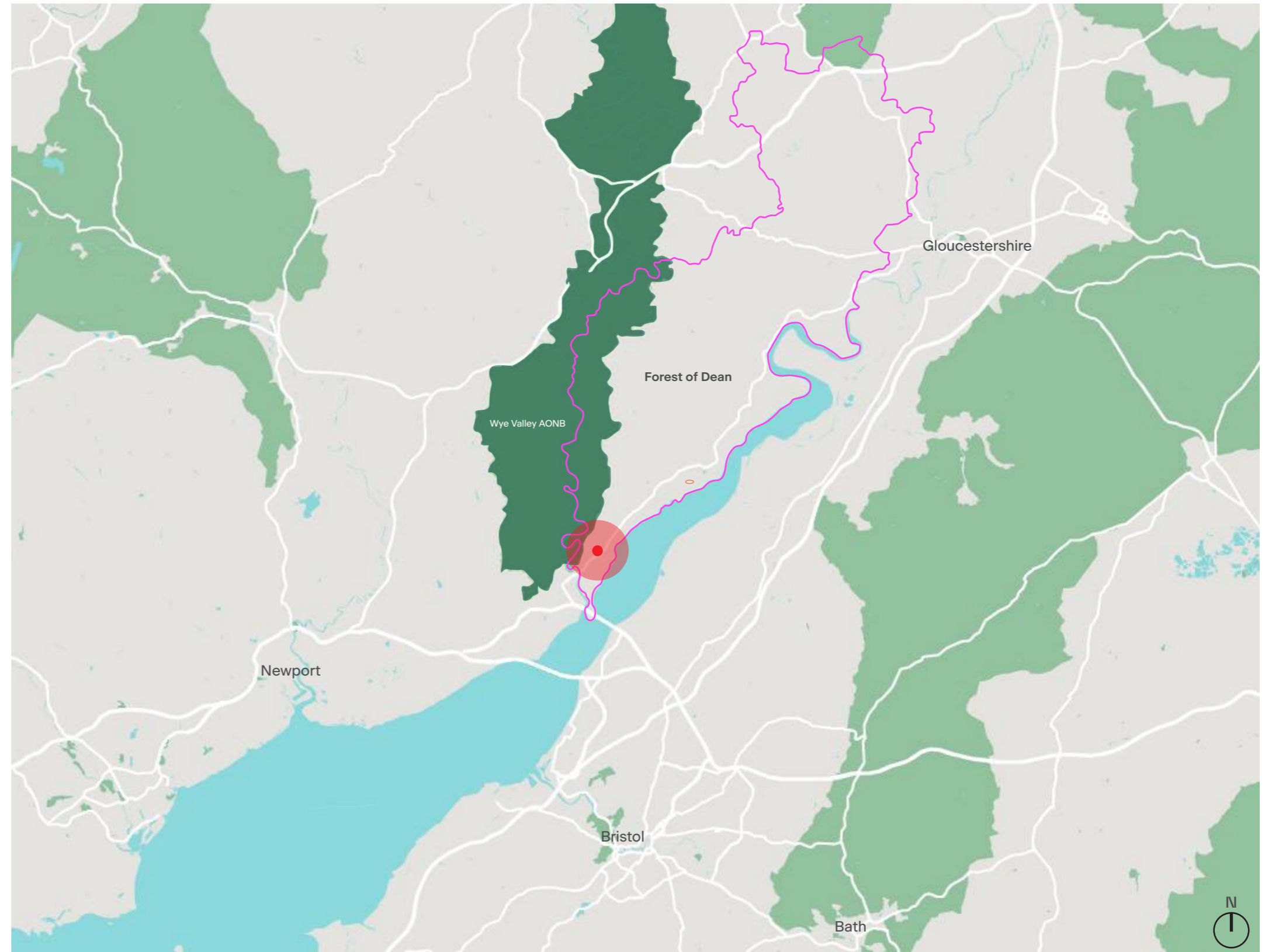
The site is located within the Forest of Dean, in the county of Gloucestershire, to the west of the River Severn estuary and to the east of the River Wye valley.

The site is located on the south-west edge of Gloucestershire; close to the boundary between Wales and England, a border which runs along the centre of the River Wye to the west. The site lies outside the eastern boundary of the Wye Valley Area of Outstanding Natural Beauty (AONB).



Key

-  Site
-  Wye Valley Area of Natural Beauty (AONB)
-  Forest of Dean









## 2.2 Local Context

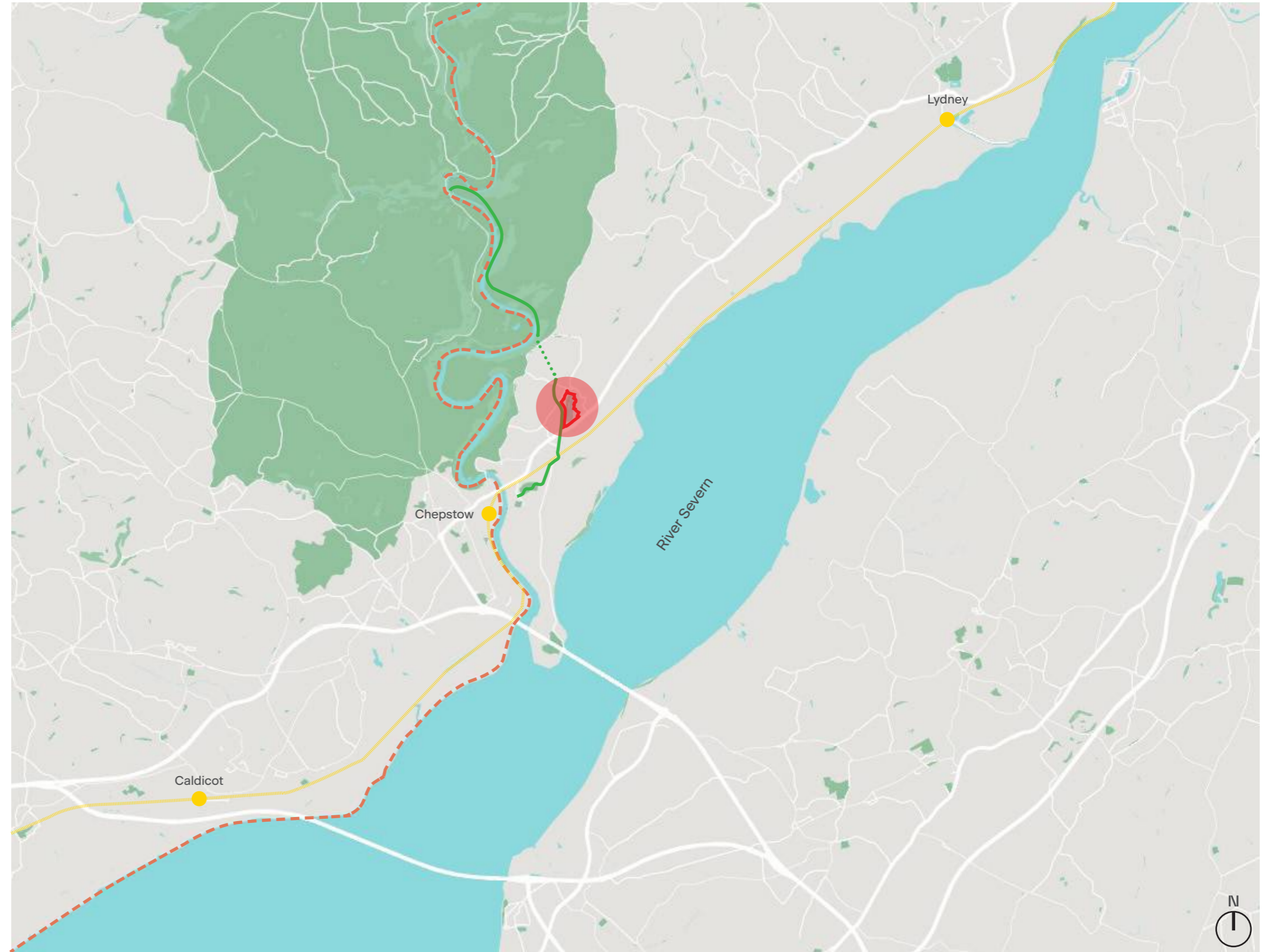
The site is accessed from the A48 running between Chepstow and Tidenham

The site is well connected to local and regional infrastructure, including access to an excellent road and public transport network, with local bus stops adjacent to the site entrance offering a frequent service to Chepstow. This lies circa 2km to the South West with its train station on the Gloucester, Newport and Cardiff line, and Lydney station circa 10km to the North East.

The Wye Valley Greenway, which is popular with walkers, wheelchair users and cyclists, runs along the route of the former Wye Valley Railway. It is a 7km trail that links Sedbury and Chepstow to Tintern and runs directly adjacent to the site's western boundary and the site of the former Tidenham Railway Station.

### Key

-  Site
-  Train Stations
-  Welsh border
-  Railway
-  Wye Valley Greenway
-  Wye Valley Greenway (tunnel)





## 2.3 The Site

The application site is that of the former Dayhouse Quarry, the rocks of which were formed 340 million years ago in the early Carboniferous Period.

The quarry, which is an excavated limestone pit, dates back to the 1930's and was in use until the 1990s and was served by the adjacent goods-only railway line, following the closing of Tidenham station to passengers in 1959. The last train serving the quarry ran in September 1992.

In 2005 the site was taken over by The National Diving Academy & Activity Centre (NDAC), taking advantage of the freshwater lake that formed within the quarry when the quarry pumps were turned off. The water is crystal-clear, fed by local aquifers with depths of up to 80m (260ft).

The linear quarry is broadly aligned north-south and is c. 540m long and c. 100m wide.



Key

 Site

## 2.4 Aerial Views and Elevations



## 2.5 History of the Quarry

Dayhouse Quarry was created on the site of Coombsbury Wood. There are archives indicating that a place named 'Coombsbury Wood' and 'Coombsbury' have been recorded as early as 1845.

Dayhouse Quarry was operated by T. S. Thomas Lydney Ltd. In 1968 Tidenham station was converted into a stone-loading site for the quarry. It was located half a mile from the main line junction.

The last train ran to the quarry in September 1992. Since then the quarry has partially filled with water and has been operated as the National Diving and Activity Centre until its closure in March 2022.



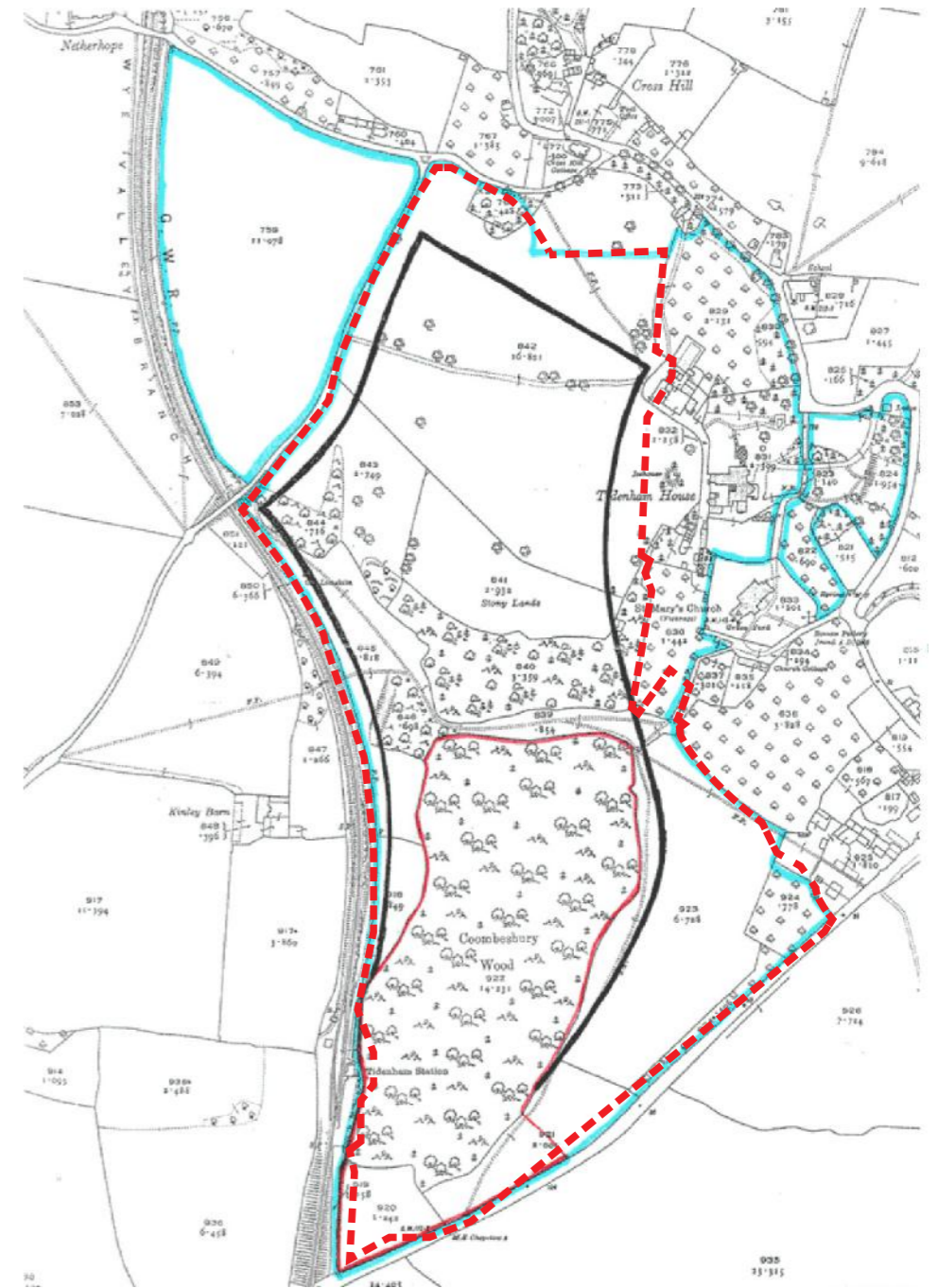
A view from south of the site towards the quarry plant area and access prior to restoration



A view from south of the site towards the original quarry buildings and access after the restoration



A view from the eastern edge of Woodroft following removal of quarry buildings



A map of Coombsbury Wood before the quarry opened for mineral extraction



A view of the quarry in use before the pumps were turned off and it flooded.

Key

 Site

 Coombsbury Wood

## 2.6 Existing Site Layout

The Dayhouse quarry site is arranged as a series of level plateaus on a sloping site with the former quarry, now partially filled with water, at its centre.

The site entrance is located to the south east, accessed directly from the A48 or from footpaths which skirt the southern and eastern boundaries, one such pedestrian access being from the Wye Valley Greenway at the southern tip of the site.

The main facilities and car park are located to the south of the quarry, adjacent to the main entrance. These include visitor facilities, a cafe, wc's and changing areas.

Located to the south on a plateau raised up from the car park is a cluster of accommodation pods with communal facilities.





To the east of the quarry are 3 plateaus stepping down from the quarry wall toward the A48. The uppermost plateau has a string of accommodation pods with external decks, overlooking the quarry. A private residence with external private space is located on the mid plateau. The lower plateau accommodates a 3 storey modular building and a single storey mobile home.

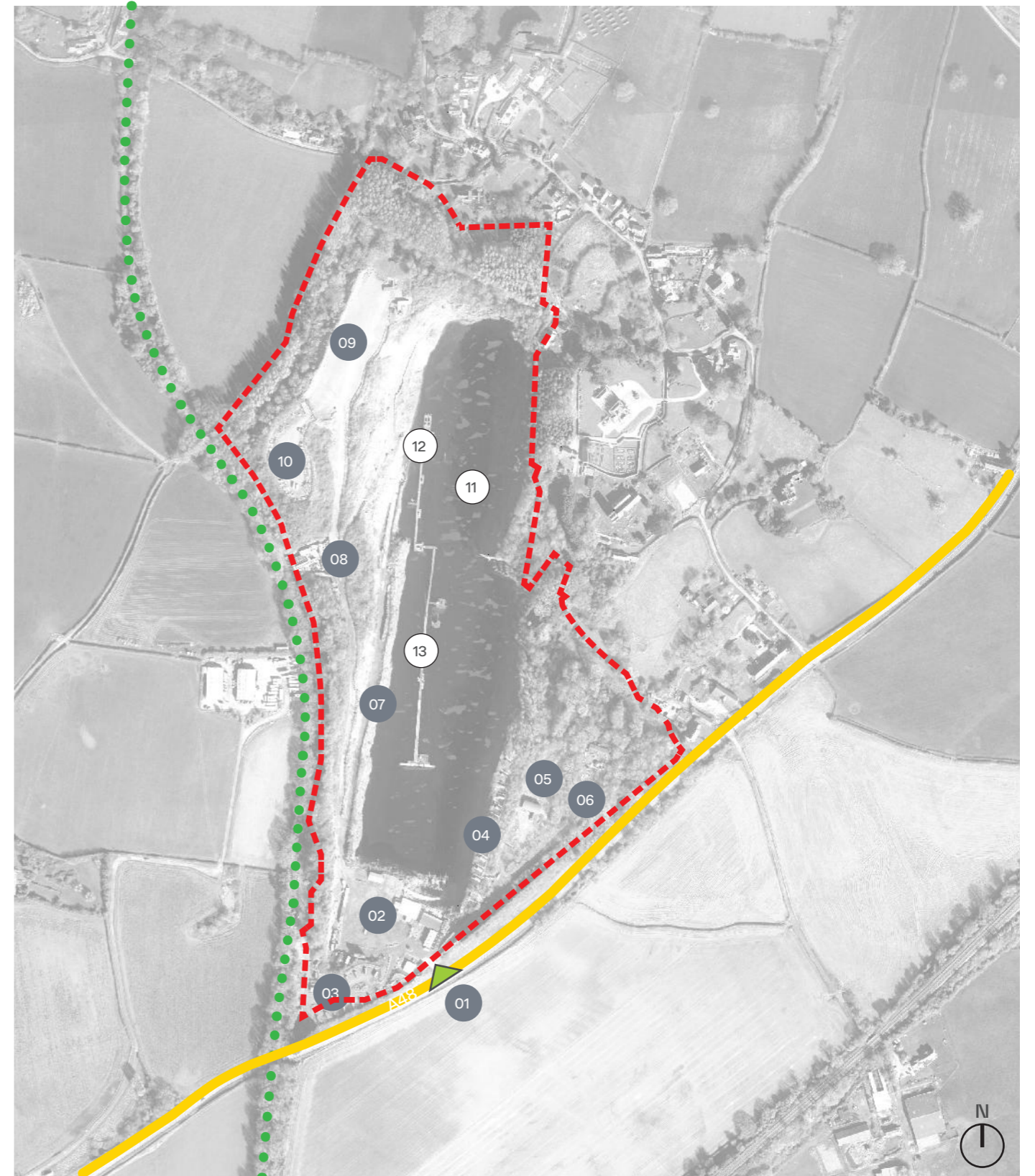
Located at the south west corner of the quarry are tracks which fork to either descend toward the quarry, this track being the original quarry access haul road. Or ascend toward the north west of the site where there is a large plateau of open ground, with a Zip wire attraction occupying the northern most point. The southern end of this plateau is utilised as a storage area.

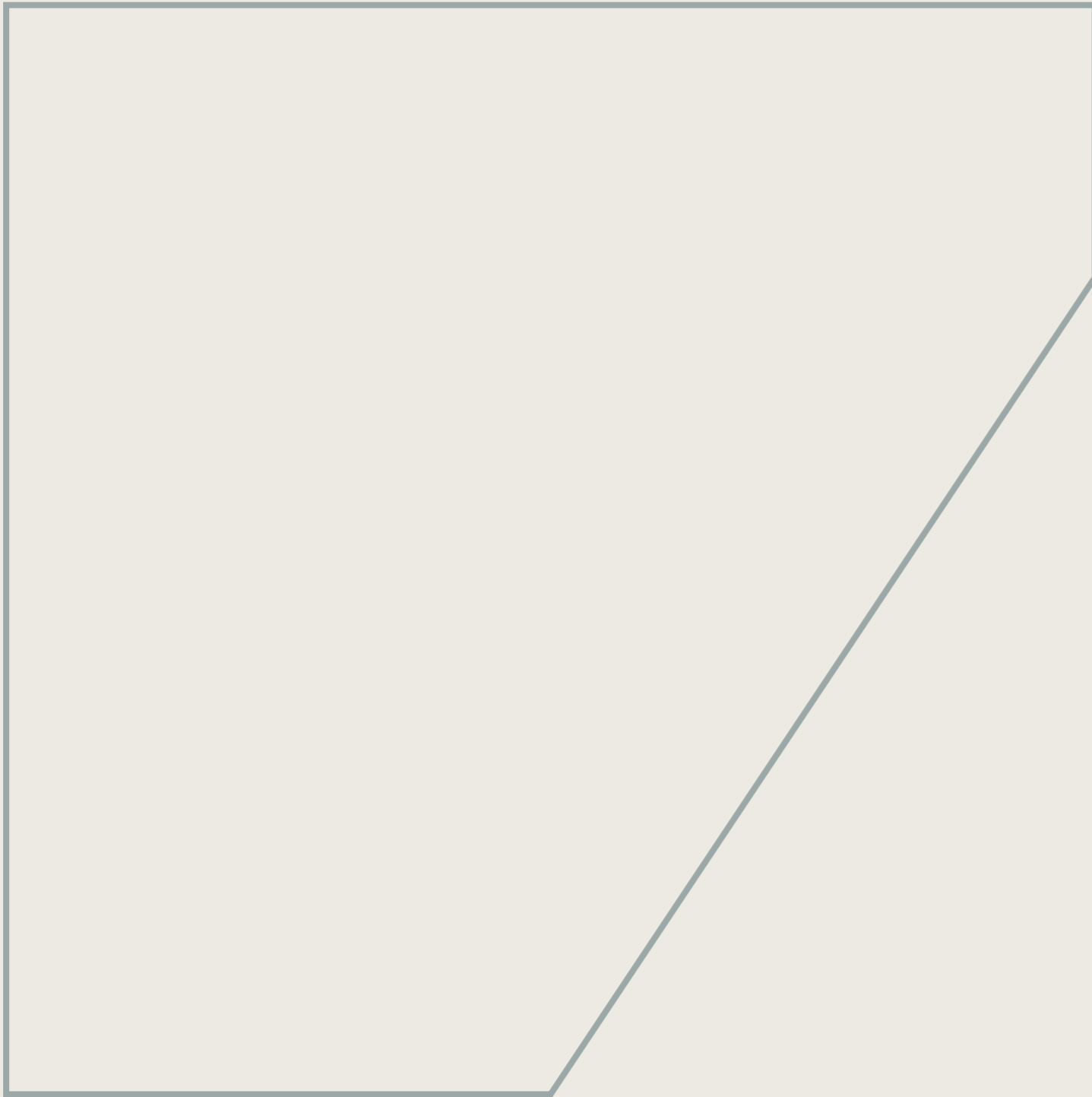
Mid way along the western side of the quarry is another smaller plateau which spans between overlooking the quarry and connecting to the western boundary and the Wye Valley Greenway. This plateau houses a cluster of decorative ramshackle cabins and containers which form the 'Fear Fest' visitor attraction.

- 01 Main Entrance (off A48)
- 02 Main Facilities & Car Park
- 03 Southern Plateau - Accommodation pods & facilities
- 04 Eastern Upper Plateau - Accommodation pods with external decks
- 05 Eastern Mid Plateau - Private residence and external private garden
- 06 Eastern Lower Plateau- Modular building and mobile home
- 07 Quarry access haul road
- 08 Western Plateau - 'Fear Fest' visitor attraction
- 09 Northern Plateau - Open ground and Zip-wire visitor attraction
- 10 North Plateau - Storage area
- 11 Quarry - Water column
- 12 Quarry - Slipway
- 13 Quarry - Pontoons

### Key

-  Site Boundary
-  Main Site Entrance
-  Major Roads
-  Wye Valley Greenway





# 3.0

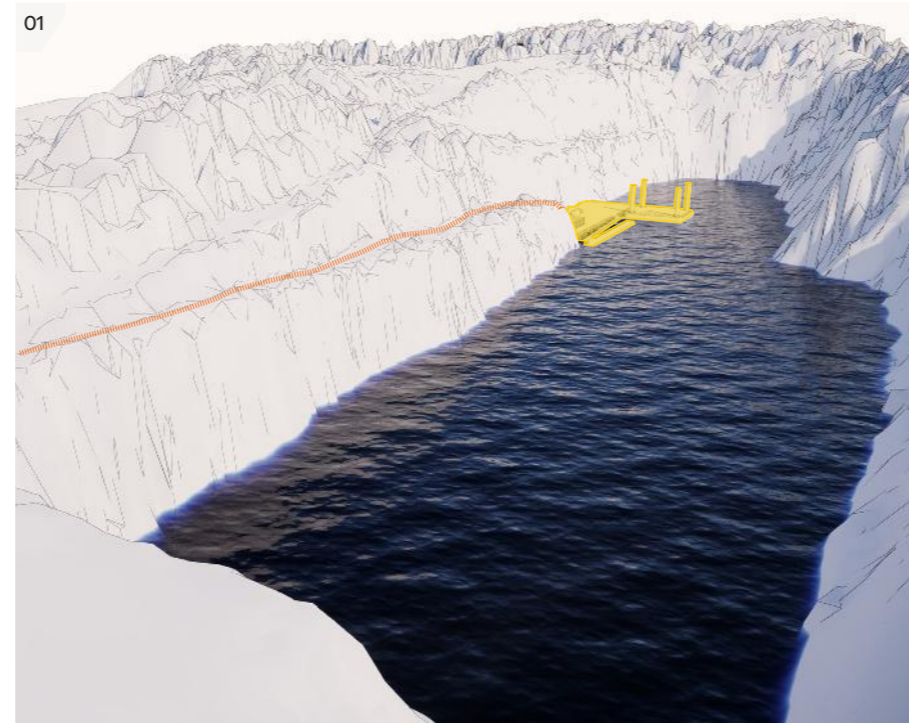
Proposals

### 3.1 Access to Water Proposals Overview



The proposed works are to improve facilities within the Dayhouse Quarry by creating safer access to the water body, for every day use.

The proposed improvements are focused on :

1. Re-profiling and secure edge protection to the quarry haul road.
2. A new water level apron located at the base of the quarry haul road, providing enhanced access to the water from a stable platform.



Key

-  Quarry Haul Road
-  New Apron



## 3.2 Quarry Haul Road Improvements

### Existing quarry haul road

The existing access to the water body for vehicles and pedestrians is via the haul road, a gravel track formed during the excavations of the working quarry.


The haul road is largely ballast, formed from quarry stone with a concrete surface to a portion toward the northern end of the road where the gradients are steeper.

The existing road has a range of inclines ranging from 1:40 to 1:6.

To improve the accessibility and the safety of vehicle and pedestrian access to the water, the proposals re-grade the incline of the steeper portions of the existing access road, to provide a minimum of a 1:10 gradient.

The proposed development of the access haul road also introduces a permanent and robust edge protection for the safety of both pedestrians and vehicles, whilst also accommodating essential services distribution.

Key

 Quarry Haul Road



View of existing quarry haul road from the east



View of the top section of the existing quarry haul road



View of the lower section of the existing quarry haul road



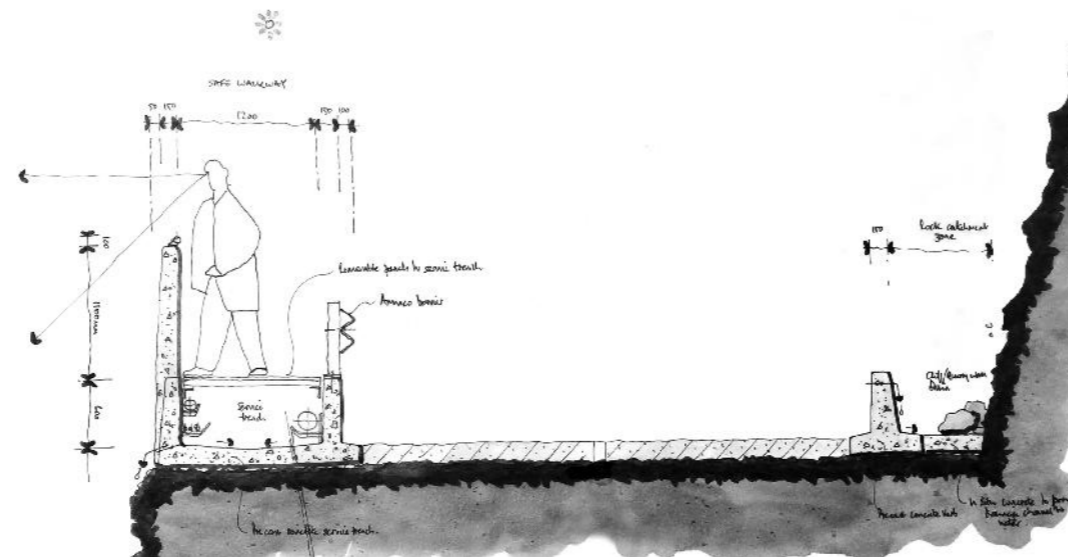
## Quarry Haul Road Improvements

Improved safety of the route is achieved via a purpose-built road of varying widths, no smaller than 7.25m wide, that integrates drainage and a rock catchment zone. A rough finish to the concrete road surface will provide appropriate traction for vehicles.

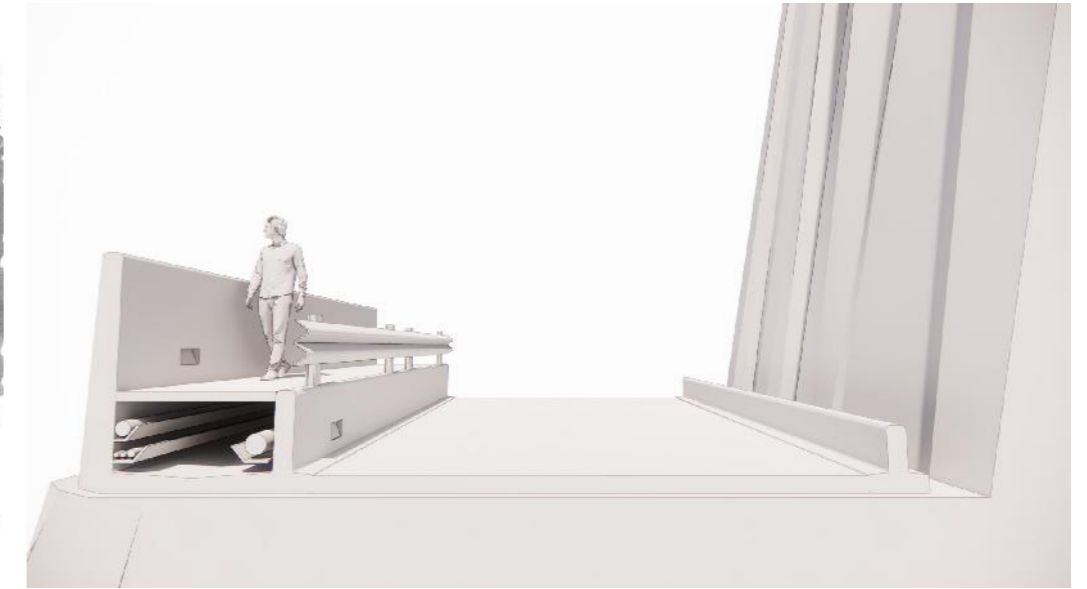
Pedestrian access is to be separated from vehicles by providing a raised route delineated by robust edge protection sitting above the road surface. A service trench located underneath the pedestrian path provides a distribution route for essential services to the new apron.

A solid balustrade to the quarry edge together with 'Armco' type vehicle barriers and low level directional LED lighting, will be integrated into the pedestrian route to ensure pedestrian and vehicle safety.

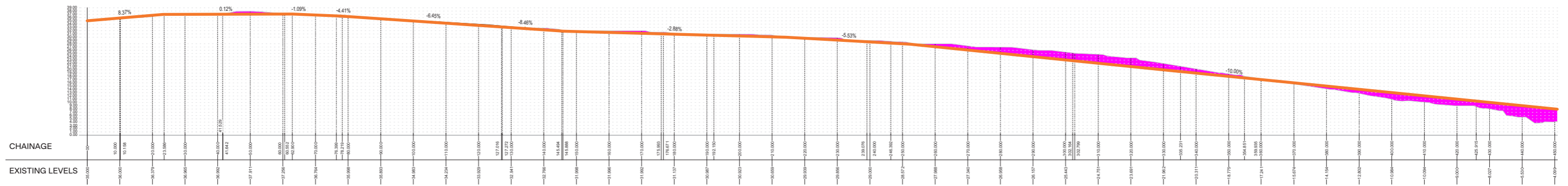
Rainwater will be collected in sumps with silt traps, located at regular intervals along the haul road in order to help manage the water quality in the quarry.



Quarry Haul Road - Cross Section



Quarry Haul Road - Perspective



Quarry Haul Road Re-profiling Section

Key

- Proposed quarry haul road
- █ Difference from existing road

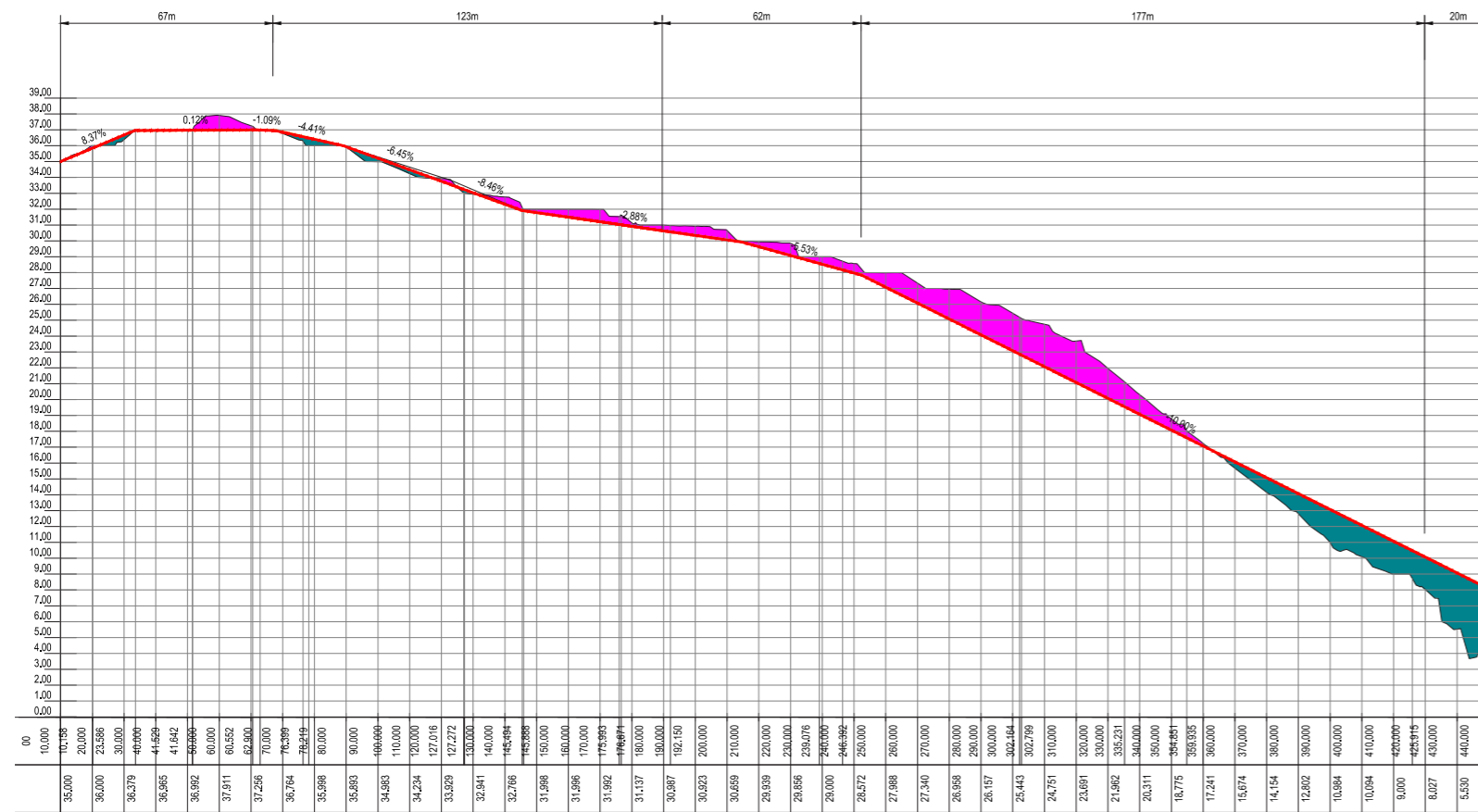


## Quarry Haul Road Improvements

The proposed re-profiling of the quarry haul road will reduce the steepest gradients and smooth out any troughs, in particular to the lower portion of the road which will create a safer vehicle and pedestrian environment.

Re-profiling of the road will involve excavation and the in-filling of sections of the road, followed by resurfacing the whole surface.




The amount of material cut will outweigh the amount re-used as fill material. It is proposed to use the open ground in the north-east of the site for temporary storage of the excess material.



Quarry Haul Road - Accelerated Section

Indicating areas of cut and fill required for quarry road re-profiling

Key

-  Proposed quarry haul road
-  Area of cut required
-  Area of fill required



### 3.3 Apron and Slipway Improvements

The existing quarry haul road forms a natural slipway at its interface with the water. This area has been improved and enhanced over the years and is currently used for the launching of boats onto the water body. The piecemeal nature of these works over time means that the slipway has never managed to solve the challenges presented by the seasonal changes in water levels in the quarry.

Temporary measures in the form of a pivoting ramp and bridge arrangement, provides an adjustable means of linking the slipway to the existing floating pontoon network. However, this solution requires continual adjustment to the level of the ramp and bridge using a built up podium of railway sleepers to accommodate continually changing water levels.

We therefore propose the construction of a new apron located adjacent to the high-water mark at the base of the haul road. This apron would include a new slipway that can operate independent to changing water levels, forming a safe and stable surface for activities to take place at the waters edge, and safe access to the water.



01 View of the existing slipway from the north



02 View of the existing slipway from the south



03 View adjacent the existing slipway

Key

 New Apron



## Apron and Slipway Improvements

The proposed new apron will create a safe environment for people to access the water with an improved slipway at its northern end.

The new apron will include space for the temporary storage of ISO shipping containers and housing equipment required for water-based activities. This alleviates the need to regularly transport equipment up and down the quarry access road, providing a first-aid facility, briefing rooms, tea point, WC, shower and changing facilities.

In the longer term these temporary facilities may be replaced with a permanent pavilion which would be subject to the submission of a later planning application.

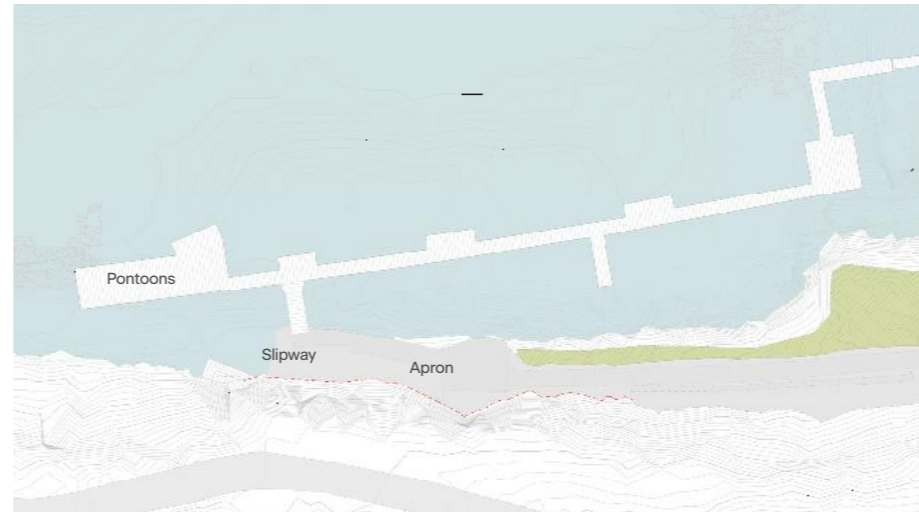
A jack-up platform will be located at the north-east corner of the apron providing a means to safely deploy equipment into the water body, independent to seasonal changes in water levels, and set a safe distance away from the inclined quarry wall above and below water.

Floating pontoons will be linked to the south-eastern side of the proposed apron, providing safe pedestrian access to water level with a 'marina'-style pivoting ramp that accommodates seasonal changes in water levels.

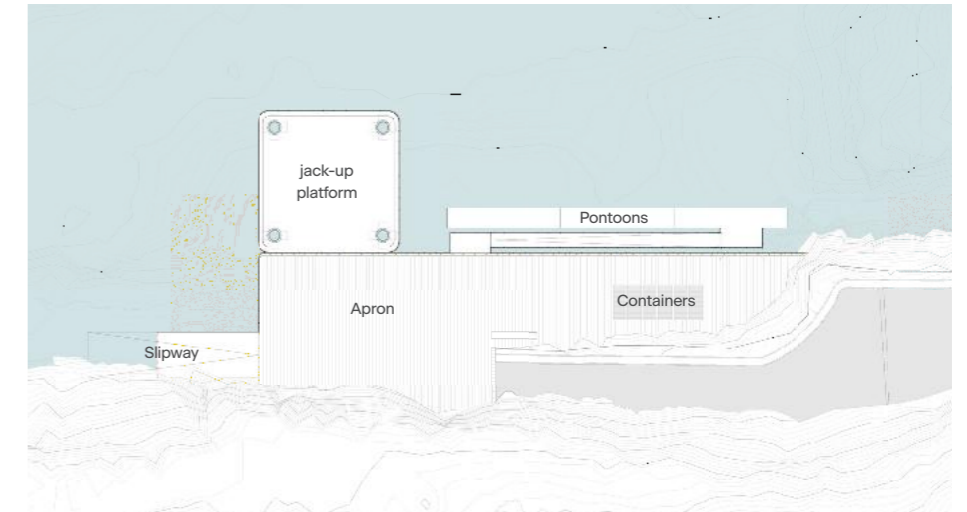
The structure of the apron will also allow vehicles such as mobile cranes, equipment vehicles and vehicles with trailers launching boats on the slipway, sufficient space to safely turn around for their return journey back up to the car park level.

The apron will have handrails providing edge protection where appropriate, and discrete directional LED lighting to ensure a safe working environment.

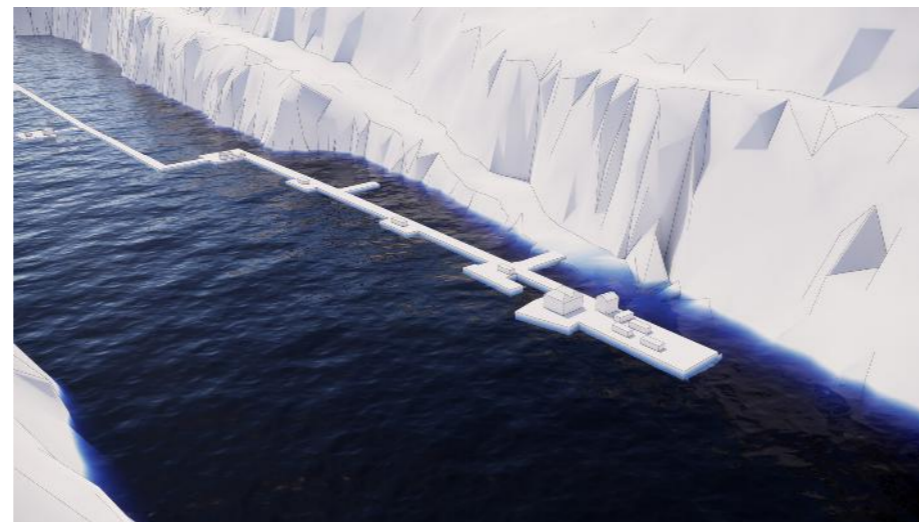
Rainwater will also be collected and pumped back up to the car park for treatment, in order to protect water quality in the quarry.



Existing Apron & Slipway Plan



Proposed New Apron Plan



Existing Apron & Slipway View

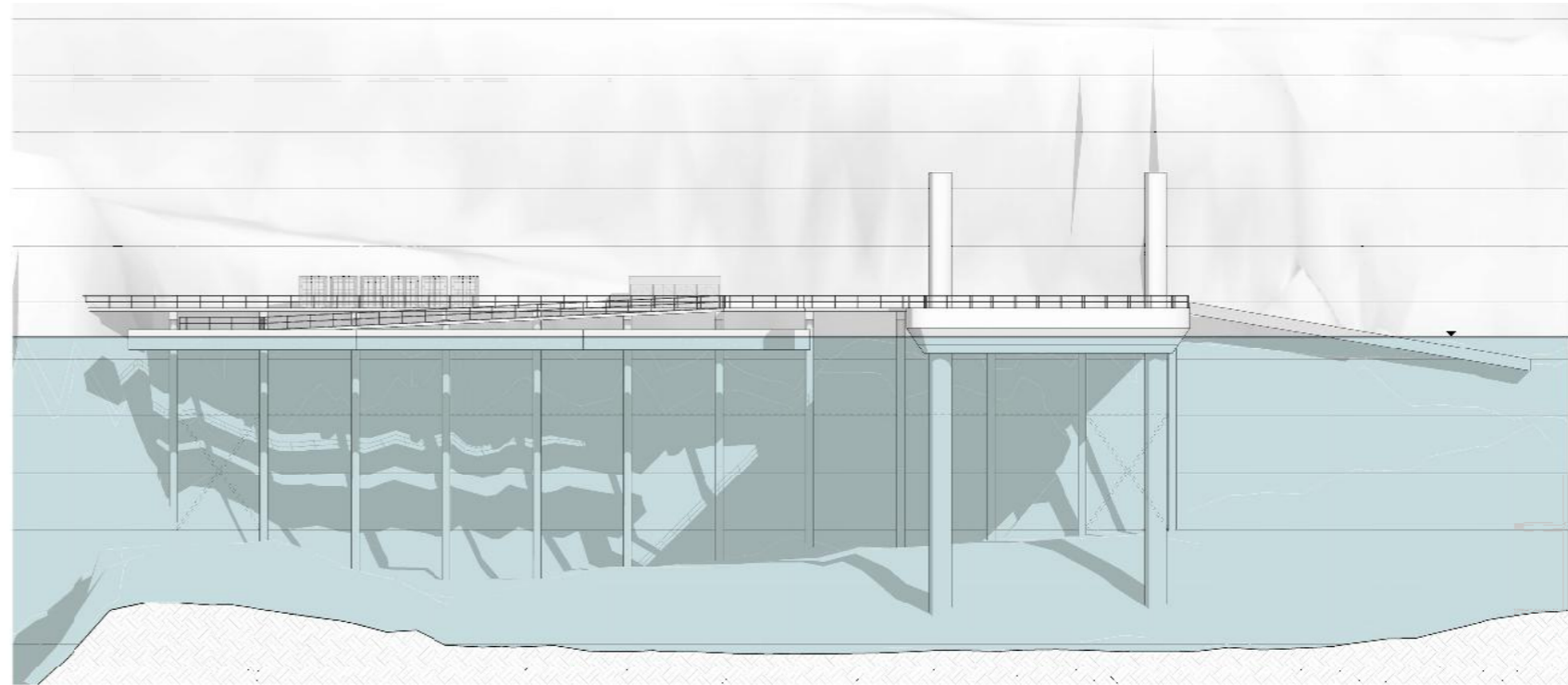


Proposed New Apron View

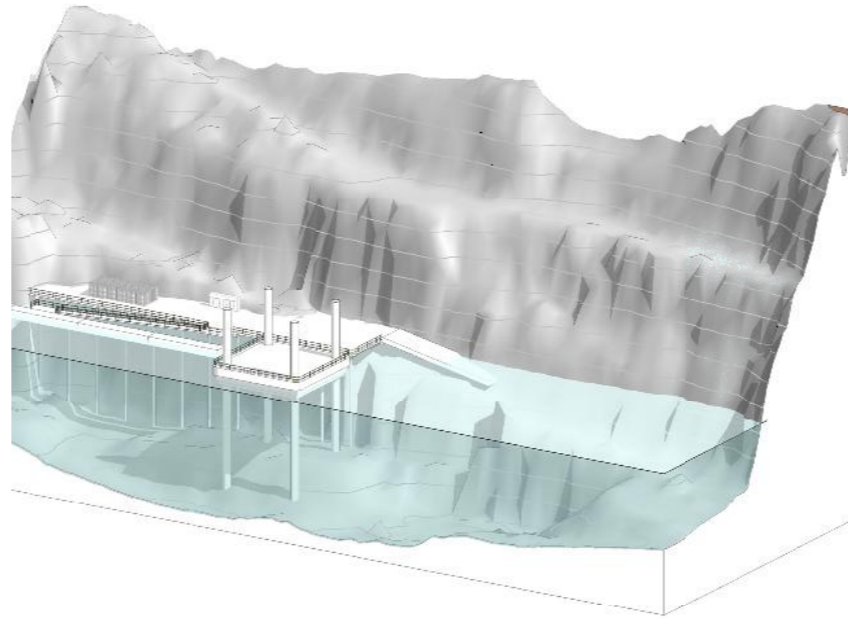
## Apron and Slipway Improvements

The apron is sized to allow vehicles, ranging in size from a car with a trailer, to a 200 tonne 6 axle mobile crane to turn on the level surface of the apron, which also includes the ability to launch a boat from the slipway.

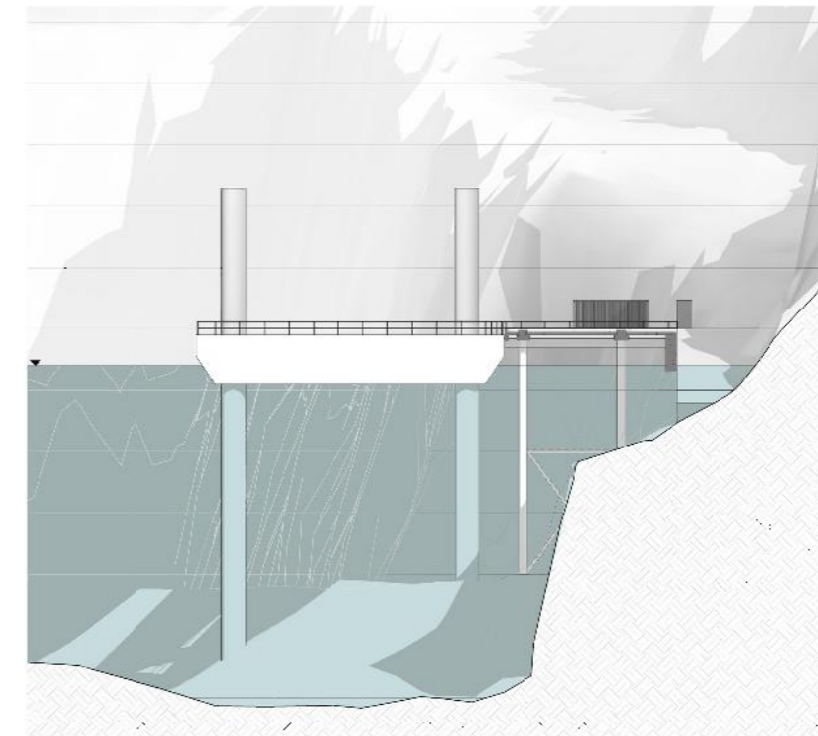
The waterside perimeter of the quay will include a removable segmented balustrade that gives edge protection, with integral gates to allow ready access to the water.



Proposed Apron - North Elevation



Proposed Apron - 3D View



Proposed Apron - Section



# 4.0

Technical  
Considerations

## 4.1 External Lighting

### Quarry Haul Road

The quarry haul road will provide pedestrian and vehicle access to the new apron and water-body, with access to the site and water controlled by Estate Management and Security at all times.

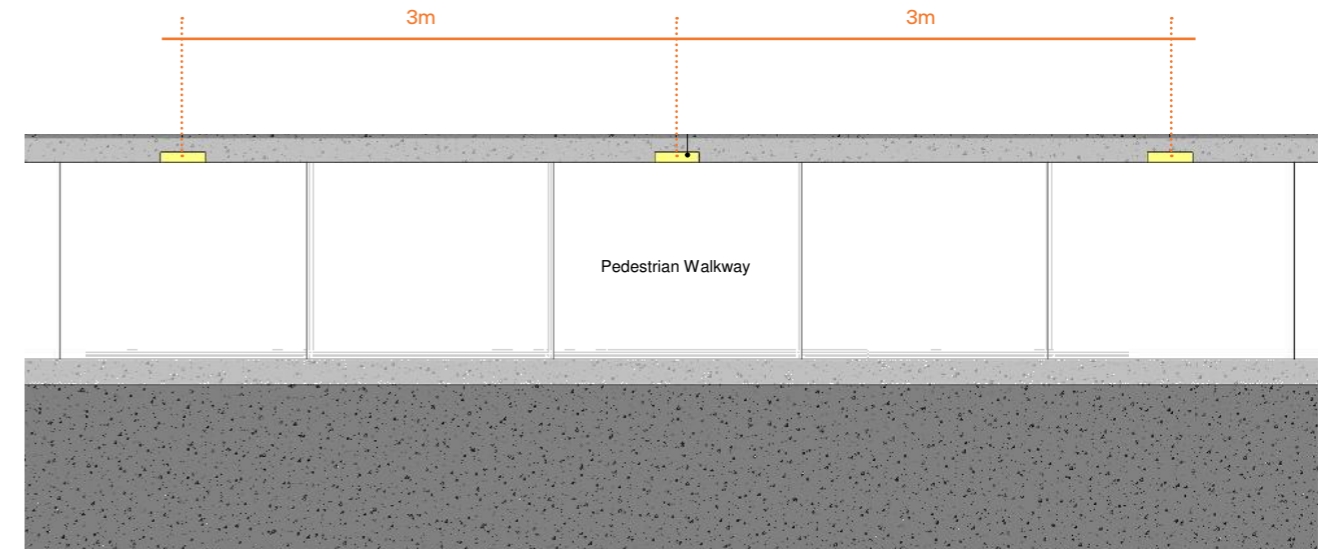
As the haul road provides access, it will be low-speed and should not be difficult to navigate for road users. The proposals for the elevated footway will ensure pedestrians will be segregated from the carriageway and any vehicles, whilst also being a safe distance away from the quarry wall. These considerations mean that the road is low-risk, thus it is not considered that dedicated lighting for the carriageway is required.

In order to ensure that there is the potential for lighting in the future (if required), and to minimise any potential disruption, distribution ducting would be installed in the proposed service trench to facilitate future connections.

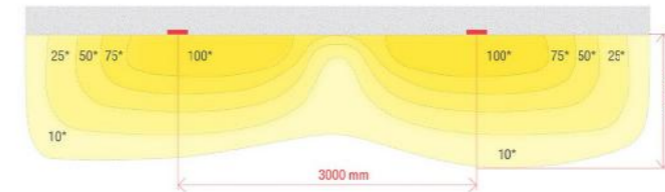
This would provide a degree of future-proofing, with the potential for installing an electrical network at a later date. This could also be used for other purposes with the provision of power for other equipment, such as CCTV.

Since pedestrians will be able to circulate around the site during the hours of darkness, some level of illumination is necessary for safety and wayfinding. However, substantial lighting equipment such as bollards or column mounted lanterns, should not be required.

Low-level directional LED lights will provide safe illumination to the pedestrian foot ways, minimising any light spill. If any areas require more general lighting for safe operations, this could be accommodated with low height columns (4m or 5m) with directional LED lamps. These would be centrally controlled, and switched with dimming units and passive infrared (PIR) control, to minimise light spill lowering the potential for any negative impacts from the lighting on the surrounding environment, as well as providing balanced energy and maintenance costs.



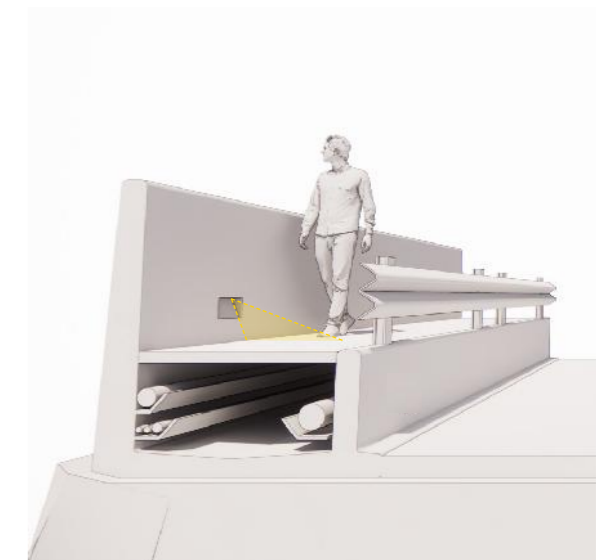
Pedestrian Pathway - Typical plan



Pedestrian Pathway - Example fitting luminance / spread



Pedestrian Pathway - Example luminaire



Pedestrian Pathway - Inset pavement washing luminaire

## External Lighting

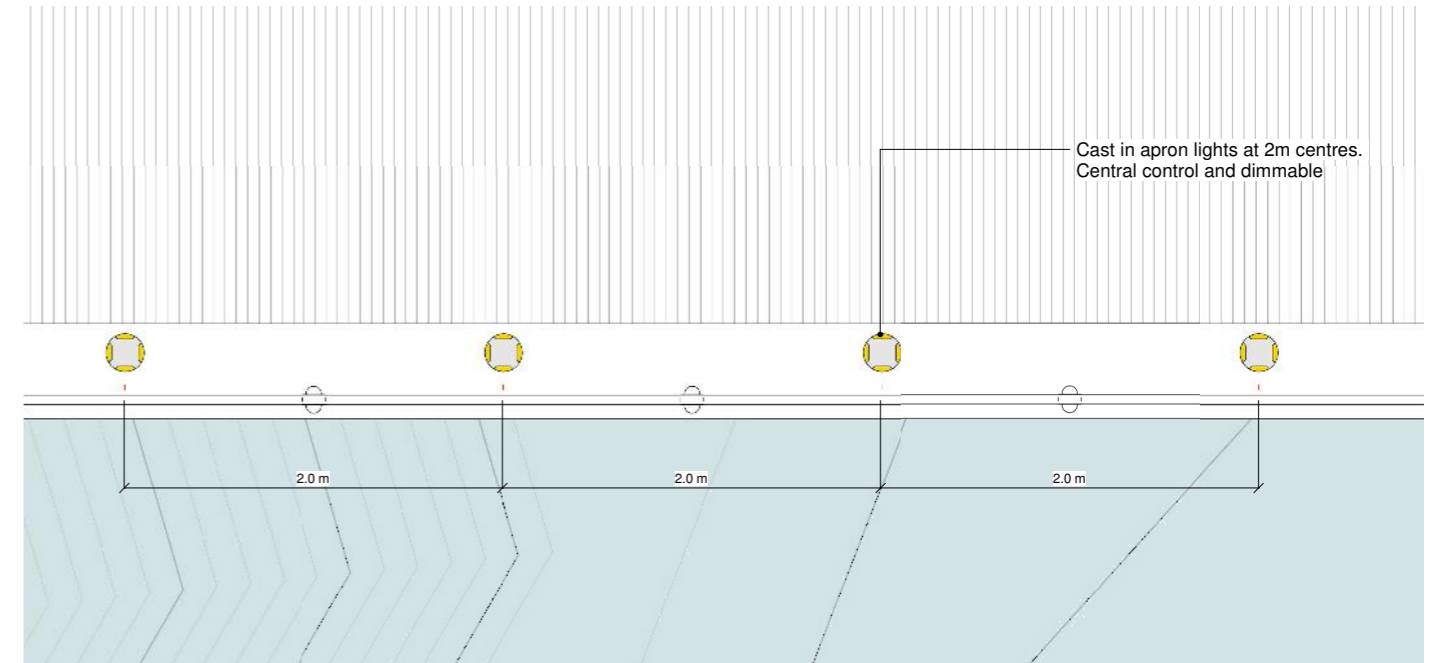
### Apron

Whilst the new apron has integrated edge protection in the form of a handrail, there are still risks associated with the quarry and proximity to the water.

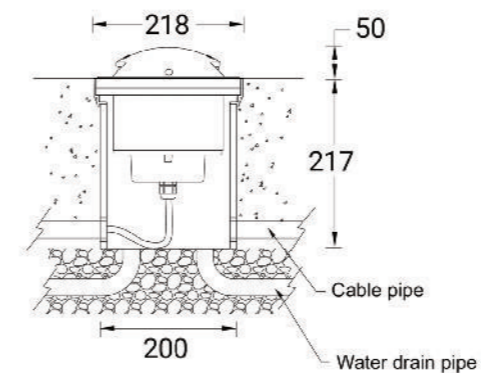
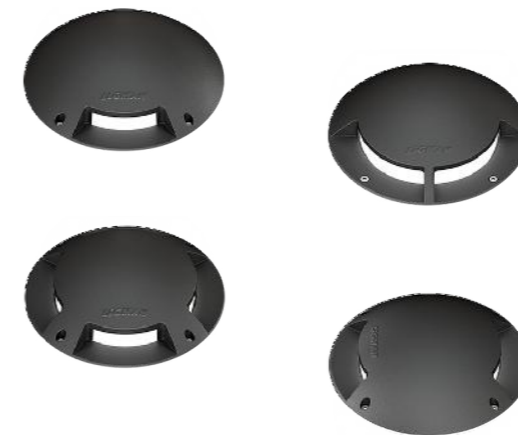
It is therefore appropriate to enhance safety with lighting to highlight working areas and provide guidance and way-finding for site users.

Low level directional LED lighting is proposed to the perimeter of the apron, utilising walk and drive-over, semi-recessed in-ground marker lights. This type of equipment is available in a variety of configurations which will allow the light to be limited to the apron and directed to provide the best light coverage.

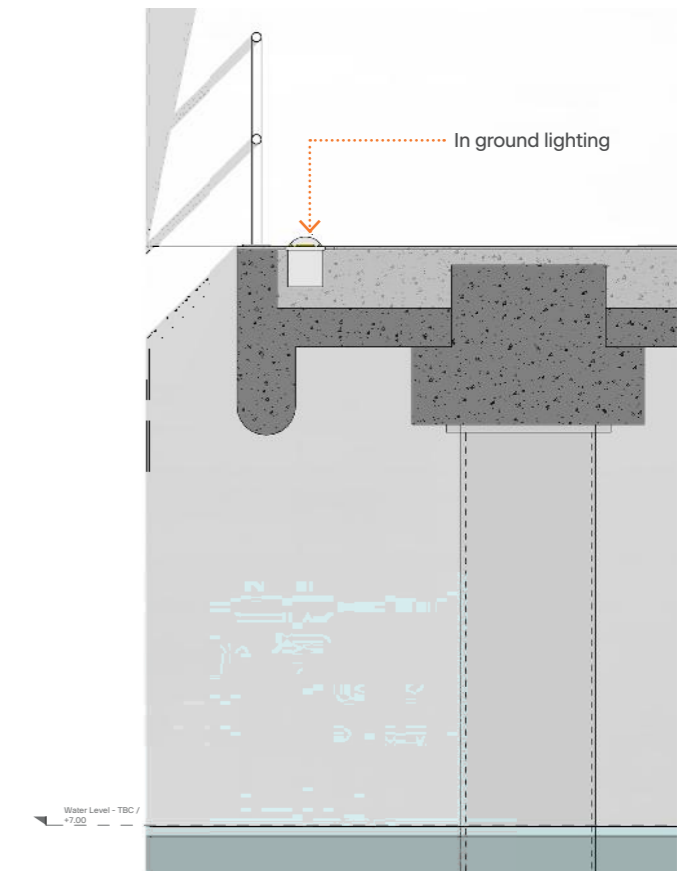
A lighting control system will be utilised to either dim or switch off the lighting during certain hours, which would limit any potential disturbance from the lighting on the immediate environment in addition to associated energy savings.



Apron - Lighting Plan



Apron - Example In-ground lighting



Apron - Lighting Section

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