

Havant Thicket Reservoir

Design and Access Statement Addendum

Main Reservoir Works Phase

02/04/2024 | P01

Document Reference : HTR-FUW-ZZ-ZZ-PL-W-0056



Document Control

REVISION	DATE	AUTHOR	REVIEWED BY	APPROVED BY	REASON FOR ISSUE
P01	02/04/24	James Hanson	Geraint Lloyd		

Contents

.....	0
Document Control.....	1
1. Introduction	3
2. Design Evolution	3
3. Stakeholder Involvement	4
4. The Scheme	4
5. Biodiversity mitigation and compensation strategy	9

1. Introduction

- 1.1. Havant Thicket Reservoir (herein referred to as 'the Scheme') was granted planning permission subject to conditions in October 2021, by Havant Borough Council (HBC) and East Hampshire District Council (EHDC) under Planning Permission References: APP/20/00990 and 51680/001 respectively. The permissions are hybrid consents and includes full planning permission for some matters and outline planning permissions for others.
- 1.2. The permissions for the Scheme were granted subject to the Development Specification, document reference HTR-ATK-RZ-ZZ-RP-T-0002 Rev C02, dated 19/06/20, which sets out key design principles, actions and commitments which planning applications for reserved matters will be required to comply with.
- 1.3. Section 73 planning applications to vary the planning conditions attached to the hybrid planning permissions for the Scheme are being submitted to HBC and EHDC which propose amendments to reservoir's main embankment, valve tower and culvert.
- 1.4. This document provides an addendum to the Design and Access Statement for the 'Reservoir Development' element only taking into account the Section 73 proposed amendments to reservoir's main embankment, valve tower and culvert.
- 1.5. The 'Pipeline' related elements remain completely unchanged as they are not affected by the Section 73 proposed amendments to reservoir's main embankment, valve tower and culvert.

2. Design Evolution

- 2.1. During the course of the detailed design process, several key changes have been implemented to better incorporate the existing site conditions.
- 2.2. Due to the southern embankment toe proximity to the ancient woodland at Roundwood, the alignment of the southern embankment has been adjusted moving the toe to the north. This change was required to avoid further impacts to the ancient woodland and limit further tree loss. This change has reduced the overall footprint of the reservoir whilst still achieving the minimum water volume requirement.
- 2.3. In response to further extensive ground investigations and construction of a trial embankment using clay which was excavated from the reservoir site. This further work has provided a more detailed view of the ground conditions, and a greater understanding of how clay from this site behaves during and after construction. Portsmouth Water and its contractor, Future Water, have used this information to inform the proposed design of the reservoir and have concluded that changes to the slope angles of the main reservoir embankment as proposed in the Section 73 applications are necessary to ensure its long-term structural strength and integrity..
- 2.4. The slope angles have been redesigned from 1:5 to 1:7, to a more subtle range of 1:7 to 1:9.

- 2.5. For visitors and residents local to the reservoir, this design evolution will have minimal visual distinction from the design already granted planning permission, as the highest point of the embankment will remain at same elevation.
- 2.6. Due to the overall footprint of the reservoir decreasing, the most notable visual element of these amendments will be the increase in the landscaped areas of the site and the reduction in the surface area of the retained water. This reduction in the surface water area does not impact the projected water storage capacity.
- 2.7. On analysis of the embankment during the detailed design phase, the valve tower has been relocated outside the inner core of the main reservoir embankment. This is required for engineering reasons in order to maintain an uninterrupted homogenous core along the full length of the main embankment which improves its safety, further reduces risk, and enhances the design.

3. Stakeholder Involvement

- 3.1. As part of the preparation of the Section 73 application, relating to Phase 3 – Main Embankment, consultation has been undertaken with a variety of local stakeholders prior to submission of the application. The stakeholders involved in this consultation were the HTR scheme's Stakeholder Advisory Group (SAG). These stakeholders include local community representatives, environmental groups, Local Councillors and several Statutory Consultees, including East Hampshire District Council, Havant Borough Council, South Downs National Park, Portsmouth City Council, the Environment Agency, Forestry England and Natural England.
- 3.2. The details and outcomes of the consultation are set out in 'You Said, We Did, (March 2024)', submitted as part of the Reserved Matters application.

4. The Scheme

4.1. Main Embankment

The primary embankment features a maximum height of 20 meters, with a crest level measuring 40.5 meters above ordnance datum (AOD). Extending over a length of 2,800 meters, its inner slope varies between 1:7 and 1:8, while the outer slope predominantly ranges from 1:7 to 1:9.

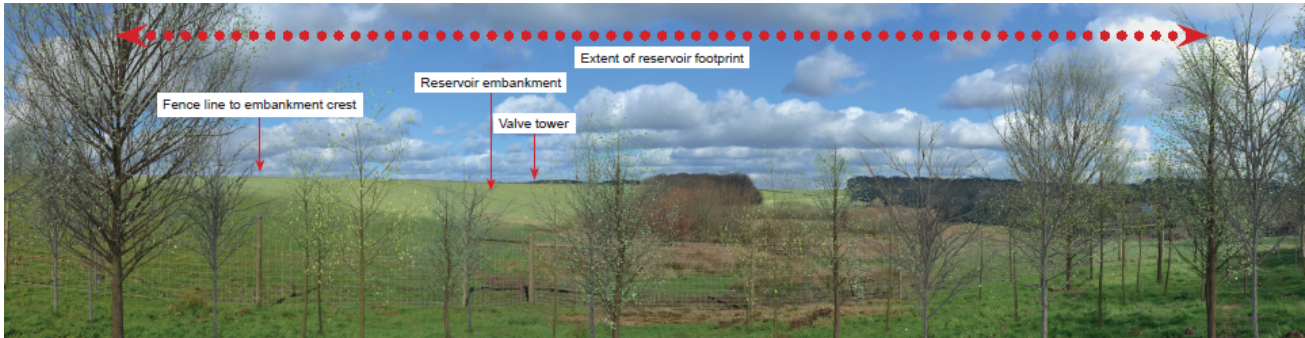
The downstream toe of the embankment is set at a minimum distance of 25 meters from the woodland edge along the southern boundary of the site, referred to as Hammond's Lands Copse. The embankment features a slope ranging from 1:8 to 1:9.

On the upstream slope of the embankment, a protective layer of consisting of rip-rap, or rock armor will be installed. Additionally, rock mattresses will be covered with topsoil to facilitate planting with aquatic and marginal species, including reeds and sedge grasses.

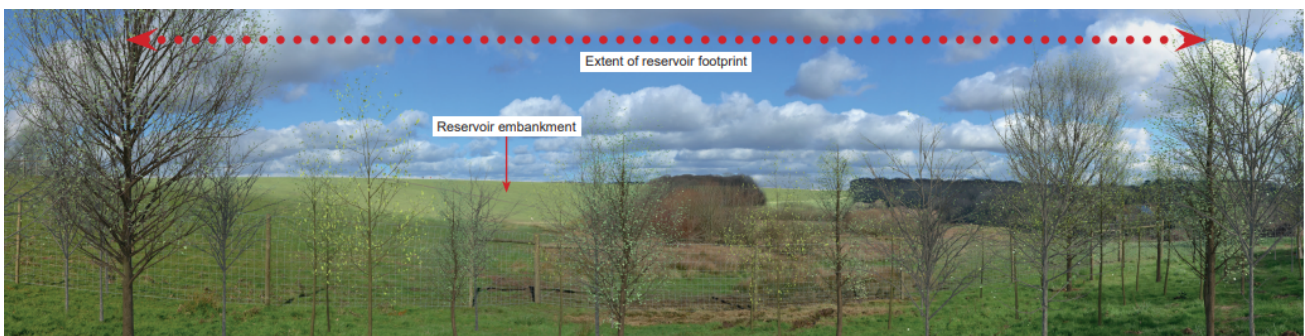
The downstream face of the embankment will be landscaped to fit with the local surroundings, promoting biodiversity and using native planting to integrate the structure to the surroundings.

Figure 4.1: Visualisations comparison – Viewpoint 12 (South-west Corner)

Visualisation Viewpoint 12 – Year 1 – Revised Embankment, Outer Slope



Visualisation Viewpoint 12 – Year 1 – Outline Planning Embankment, Outer Slope



4.2. Culvert and Control Structures

The main embankment culvert, buried within the earthworks structure for its entire length, houses the bi-directional pipe that will both fill and extract water from the reservoir once in operation. The culvert is comprised of a buried, 240m long concrete pipe that is large enough to house the main 1.4m dia pipe, smaller 0.3m scour pipe, facilitate maintenance on the pipes and also function as the primary access point for the pipework and to the valves that control the flow of water to and from the reservoir. The culvert terminates at the upstream end in a submerged drawdown chamber and at the control house at its downstream extent.

The control house is located at the culvert end to house the water testing and control modules for the reservoir operation. Its design aims to harmonise with and complement the historical park and gardens landscape, taking into account its impact on the setting and views of designated sites, including the Grade II listed park and gardens, conservation area, and South Downs National Park.

4.3. Valve Tower

The valve tower is located along the length of the culvert, partially buried within the earthwork embankment and mostly submerged. At normal operating level the structure will protrude only 2.1m above the water. The valve tower houses the pipework and high-level drawdown pipework that extracts water from the reservoir during normal operations, as well as the valves that control the flow of water between pipes. The valve tower is only accessible by authorised persons via the control house and traversing the length of the culvert. Emergency egress can be sought from the top of the tower if required.

4.4. Landscape Plan

Figure 4.2: Landscape Plan – Outline Master Plan



Landscaping of the reservoir can be considered as four distinct areas:

4.4.1. Soft landscaping and planting

Native scrub planting and landscape buffer planting, consisting of native species, aid in seamlessly integrating the new reservoir features into the broader landscape context. Gentle slopes contribute to a better fit within the landscape while introducing a variety of wetland elements such as reed beds, sedges, wet scrub, and ephemeral scrapes, along with islands, all woven into a comprehensive blue-green infrastructure. The landscape and ecological design aim to enhance habitat diversity and complexity in line with the objectives outlined in the LEMP. Buildings and structures are designed to prioritise sustainability, and the aesthetic and environmental mitigation measures ensure long-term biodiversity enhancement.

Figure 4.3: Visualisation of the reservoir looking south west



4.4.2. Footpaths and access tracks:

On completion of the scheme, public access will be provided via the crest track that links to the future permanent bridleway (route number 108/121/1) that runs behind the wetland area and connects to the viewing points via several permissive paths accessed via kissing/field gates.

4.4.3. Avenue Staircase

Staircase detail will be provided along alignment of The Avenue joining pedestrian access from Staunton Country Park with viewing area at the crest. The formal avenue steps arrangement and suggested tiered landform with low hedging has been redesigned to consider the longer less steep main embankment slope. The terracing either side of the steps helps to make reference to the historic landscape feature whilst acknowledging the recreational and visual amenity within the site. Interpretation panels would be included within the detailed design to help educate and inform visitors and the local community of the significance of the site and wider historic landscape.

A wide-angle photograph of a dirt path leading through a forest. The path is flanked by trees and undergrowth, leading towards a grassy hill in the distance. On top of the hill, a small, light-colored structure is visible. The sky is clear and blue.

Viewing points provide opportunity for both educational visits and recreation at the reservoir. Promoting interaction with the reservoir in a way that is conscious of the environment being created for wildlife. There are two viewing platforms located along the embankment crest; in the south west corner of the reservoir (location of Gammon Hill) that will look over to the north east over the water, to the wetlands. A second viewing platform is located at the top of the avenue staircase, offering panoramic views of the reservoir and historic landscape beyond.

Figure 4.6: Visualisation of the viewing platform in the south west corner of the reservoir



Overall, the landscaping materials aim to adopt an informal treatment reminiscent of the Country Park setting to the south. Certain geo-engineering designs have been incorporated to address slope stability and erosion protection concerns while remaining aligned with the objectives outlined in the LEMP.

5. Biodiversity mitigation and compensation strategy

The design development since the hybrid Design and Access Statement has been considered in regards to whether the proposed design in the Section 73 application and the detailed design in the Phase 3 Reserved Matters application are likely to give rise to any new or materially different significant effects to those identified in the 2020 ES, through the preparation of a ES Addendum (2024). This has confirmed that all committed mitigation can continue to be effectively applied and is sufficient to control the potential impacts of the amended design and construction related activities.

In parallel to this Design and Access Statement Addendum, to support the Phase 3 Reserved Matters Application an Environmental Statement of Conformity (HTR-RHD-ZZ-ZZ-RP-Z-0002) has been prepared and submitted as part of the RMA application. This report concludes that the Phase 3 design submitted for Reserved Matters approval does not give rise to any new or materially different effects to those reported in the 2020 ES or the ES Addendum (2024).

An Ecological Mitigation, Compensation and Enhancement Measures report (HTR-RHD-P3-XX-RP-Z-0003) has also been prepared and submitted to discharge the requirements of condition 36 attached to the respective permissions. This sets out the mitigation measures related to the main reservoir embankment and together with the LEMP how they will be implemented.