

Riven Itchen Solar Array

LANDSCAPE & VISUAL STATEMENT

SEPTEMBER 2023 | DD646 | FINAL





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Legend

Highwood Reservoir (site boundary)



0 100 300 500m

INTRODUCTION

OVERVIEW

This Landscape and Visual Statement (LVS) has been prepared by Deacon Design Ltd on behalf of Portsmouth Water for a solar array installation at the Highwood Raw Water Storage Reservoir.

The statement summarises the local landscape characteristics and visual envelope associated with the site and its context. It outlines the key landscape and visual sensitivities and analyses the potential impacts due to the proposed development.

SITE LOCATION

The site comprises the existing Highwood Reservoir, which is located in the vicinity of the Itchen Valley Country Park in Hampshire (see site location plan on page 4).

The site is located approximately 1km to the east of Southampton Airport, 0.8km north of the M27 motorway and 1.2km south west of the Hedge End - Eastleigh railway line.

BACKGROUND

Portsmouth Water abstracts water from the River Itchen and stores in at the Highwood Reservoir, which was constructed in 1982. The location of the water intake on the River Itchen produces a wide variation in water quality and the raw water storage reservoir enables the operator to shut down its intake for short periods if the river becomes excessively cloudy or, alternatively, if pollution has occurred.

To reduce the growth of algae, which requires nutrients and sunlight, a roof was constructed over the reservoir in 2012.

DEVELOPMENT PROPOSAL

The development proposal is for a photovoltaic installation on the existing roof of the Highwood Reservoir building.

Whilst the exact layout of the array has not been fixed yet, Portsmouth Water envisages that the array would consist of 52 solar panels installed in three regular rows of nine panels on each side of the roof (with the exception of the southernmost row, where only seven panels would be installed).

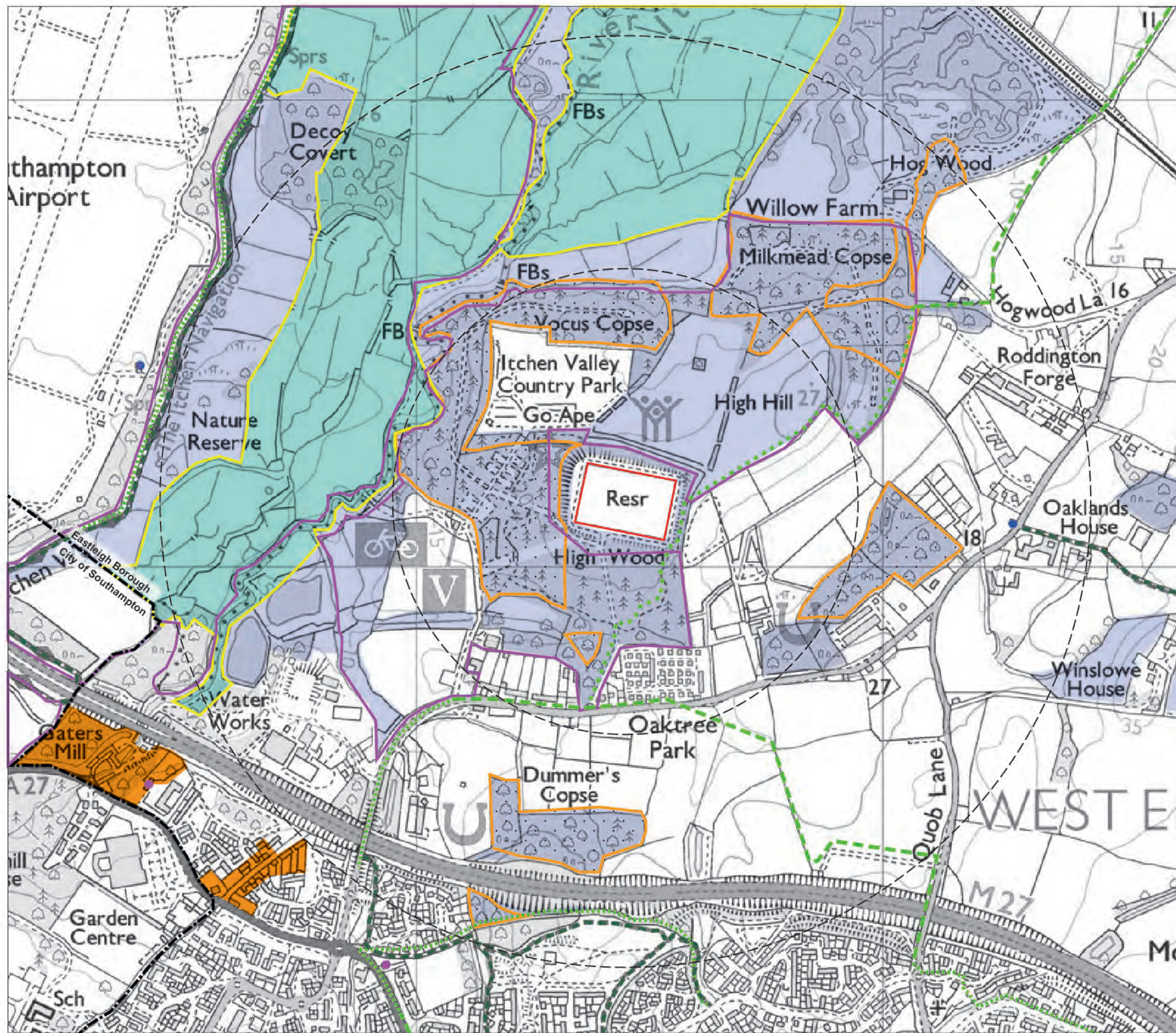
The panels would be installed on the lower part of the roof surface leaving the top of the roof (approximatley 1/3) unaffected.



Above: Highwood Reservoir in 1985 (source: Google Maps)



Above: Roof construction in 2012 (source: structa.co.uk)



Legend

- Site boundary
- Distance from the centre of the reservoir at 0.5km intervals
- Administrative boundary

Heritage

- Listed Buildings
- Locally Listed Heritage Assets
- Conservation areas

Nature conservation

- LNR, SINC
- Ancient Woodland
- SSSI
- Ramsar, SAC, SPA

Other

- Itchen Valley Country Park boundary
- Public Rights of Way
- Green Routes (existing)
- Green Routes (proposed)



SITE CONTEXT

LANDSCAPE DESIGNATIONS

There are no relevant landscape designations within the site or its surroundings.

NATURE CONSERVATION DESIGNATIONS

The local area around the site is rich in nature conservation designations. Whilst the site itself is not located within any area designated for its nature conservation interest, it is surrounded by a local designation (Local Nature Reserve (LNR) / Site of Importance for Nature Conservation (SINC)), which covers a large proportion of the Itchen Valley Country Park. LNR/SINC local designations are also scattered across the local landscape between the M27 and the railway line, as illustrated on the site context plan (see page 6).

The area to the west of the site, along the River Itchen, is also designated for its international and national conservation interest.

Ancient Woodlands are present within the local area and the nearest such designation is located in close proximity to the west of the site.

HERITAGE ASSETS

There are few heritage designations in the local area. Two conservation areas are located immediately to the south of the M27. There is one locally listed building within 1km of the site (near Oaklands House). There is no intervisibility between these heritage assets and the site.

OTHER DESIGNATIONS

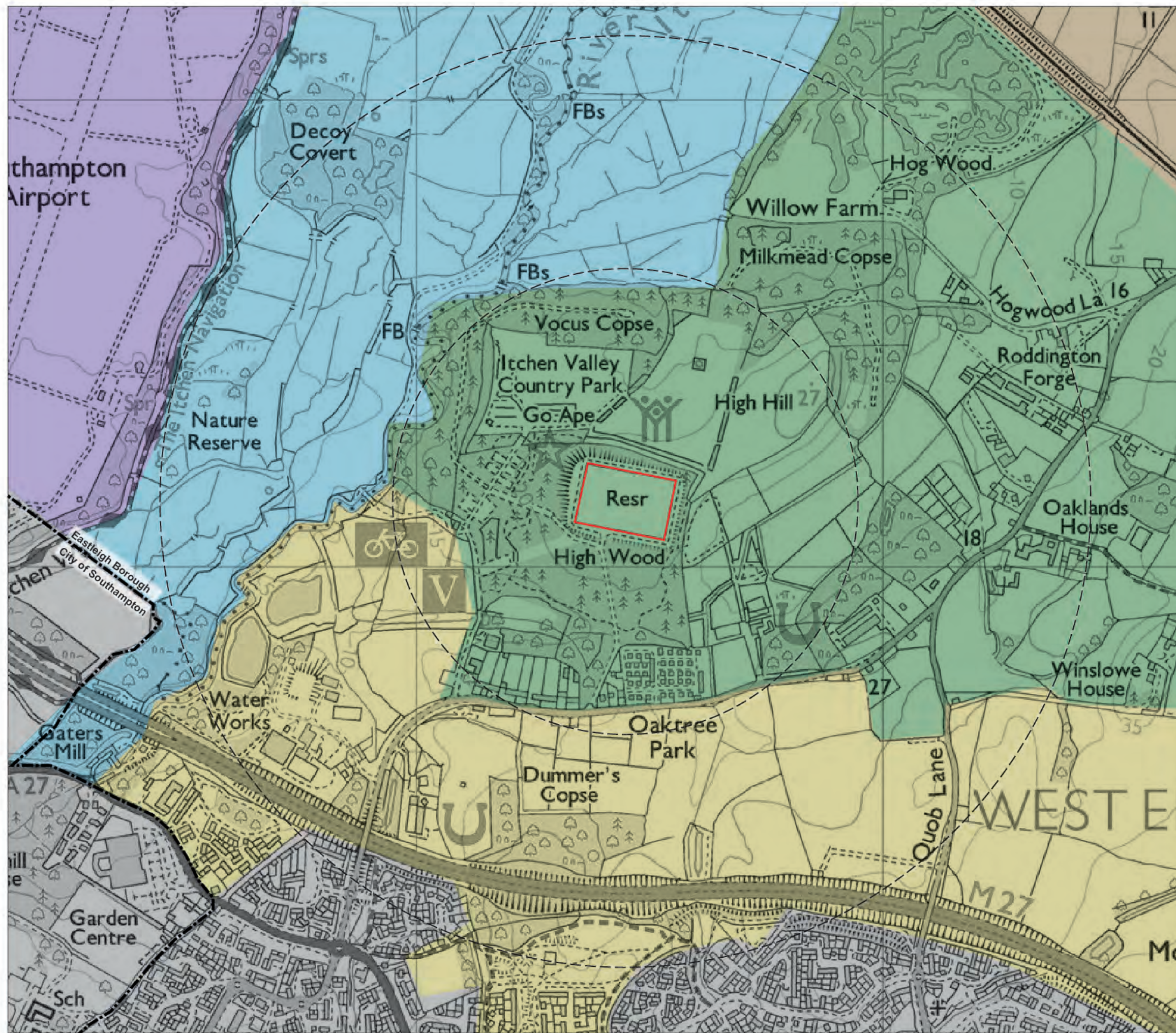
There are few Public Rights of Way in the local area, however, the publicly accessible Itchen Valley Country Park contains a dense network of footpaths and public open spaces, which are frequently used. The park covers an area of 440 acres and is widely used for public recreation. It is currently undergoing major improvement works to its facilities.

The Itchen Valley Country Park wraps around the reservoir and the embankment around it to the south, west and north. Whilst the circular footpath around the reservoir is often used by park visitors, the reservoir and the surrounding embankment are not located within the designated country park (according to the EBC ownership plan from the recent application no. F/22/92889).

A designated Green Route passes through a woodland to the east of the site.



Above: Itchen Valley Country Park sets the main context for the site



Legend

- Site boundary
- Distance from the centre of the reservoir at 0.5km intervals
- Administrative boundary
- Urban area

Landscape Character Assessment for Eastleigh Borough (2011)

- LCA 10: Oaklands Woodland and Parkland
- LCA 11: M27 Corridor
- LCA 3: Lower Itchen Valley Floodplain
- LCA 4: Southampton Airport
- LCA 9: Horton Heath Undulating Farmland



0 100 300 500m

LANDSCAPE CHARACTER

A review of published landscape character assessments (LCA) in combination with field-based studies informs our understanding of key attributes that contribute to the local and wider landscape setting.

LANDSCAPE CHARACTER ASSESSMENTS

The site is set within the following national, county and local Landscape Character Areas (LCA) and/or Landscape Character Types (LCT):

- National Character Area (NCA) 128 South Hampshire Lowlands;
- County LCA 3c - Itchen Valley; and
- Local LCA 10: Oaklands Woodland and Parkland.

NATIONAL AND COUNTY CHARACTER

Due to the nature of the proposed development and its limited visibility in the wider landscape, it is considered that the local landscape character assessment provides the most appropriate level of detail for this statement and it is not necessary to analyse in detail the national and county LCA studies.

LOCAL CHARACTER

The local landscape character is described in the Landscape Character Assessment for Eastleigh Borough produced in

2011. The Site is located entirely within the LCA 10: Oaklands Woodland and Parkland, which is described as follows:

'The west of the area consists primarily of Itchen Valley Country Park and the woodland within it. East of the country park there are smaller areas of scattered woodland. Between the woodland there are medium-sized fields, used as pasture, quite often with intermittent hedges and barbed wire fences. Parkland is present around Oaklands House and Winslowe House.'

The western boundary of the area conforms approximately to the boundary of the River Itchen SAC to the west. The top boundary follows the railway line that runs northeast. The bottom of the character area is defined in part by Allington Lane which then runs through the middle of the area. It is along this land that the development within this area has occurred.'

This LCA has the following key characteristics:

- *'Undulating landform contrasting with the character areas to the west;*
- *Woodland cover of conifers and deciduous trees;*
- *Strong woodland character in western part of character area;*
- *Sense of enclosure and restricted views;*
- *Attractive parkland character to eastern part.'*

The document emphasises the landscape and ecological

importance of the Itchen Valley Country Park, which contains coniferous, broadleaf and ancient woodland, and supports one or more 'notable species'.

In terms of landscape character sensitivity, the wooded character of the land to the west and the parkland character to the east are both important, according to the study.

For visual sensitivity it noted that the woodland of Itchen Valley Country Park has an enclosed feel and that the parkland area to the east allows filtered views outside that area through tree cover.

The study outlines five key issues for this Landscape Character Area:

- *'The erosion of the rural character of Allington Lane through low levels of management and poor screening;*
- *'The need to maintain woodland cover;*
- *The conflict between priorities of facilitating public access and nature conservation;*
- *The fragmentation of the green network due to the removal of hedgerows;*
- *There are mature oaks that indicate the Winslowe and Oaklands estates could have an historic significance, however, limited evidence is available to assess the importance of the parkland.'*

LANDSCAPE CHARACTER

THE SITE IN ITS LOCAL CONTEXT

The Highwood Reservoir is located in the western part of the LCA 10: Oaklands Woodland and Parkland, which is characterised, according to the 2011 LCA study, by dense woodland cover on an undulating topography giving it its strong character. This is a general, yet accurate description of the relevant local landscape context for the site.

In the immediate vicinity of the site, the defining features are woodland and a coniferous belt of screen planting, which was introduced in the 1980s, during or before the construction of the reservoir, which can be seen on the historic aerial photograph provided on page 5. This coniferous woodland belt is very effective in screening the site from any distance, especially that it is also combined with a vegetated embankment which wraps around the building to the north, west and south east.

The local landscape (The Itchen Valley Country Park) is publicly accessible and comprises a patchwork of woodland areas, many of which enjoy public footpaths with play equipment, and public open spaces which a variety of destinations, landmarks and activities.

The site is accessible by the public (however, the reservoir building is not) and there is a circular footpath around the site, running partially on top of an artificial embankment. We

were not able to establish if this footpath forms part of an official footpath network, as it is not marked on any official plan, but it was verified during the field survey that it is used for recreation by park visitors.

However, general public access to the reservoir is encouraged, as there are three interpretation boards on the southern end of the building.

The entire reservoir building (roof and walls) is clad in light green metal sheets, and it does have a tendency to blend into the surroundings, especially when viewed through small gaps in vegetation (please also see the viewpoint photographs on pages 14 to 21).

The highest point in the vicinity of the site is the eastern part of Wildflower Meadows, to the north east of the site. This field contains several footpaths (currently undergoing improvement works) and an official viewpoint facing the site and the wider landscape.

The woodland areas around the site have intimate character and high levels of tranquillity. Public open areas around the site are usually enclosed by woodland and do not offer views out into the landscape other than the Itchen Valley Park itself.



Above: Woodland provides significant enclosure around the site.



Above: Open fields with public access to the north of the site.

VISIBILITY ANALYSIS

INITIAL DESKTOP STUDY

The site's visibility in the local context has been established through a desktop study, including initial viewshed analysis, and then followed by a field survey carried out by a qualified landscape professional.

The initial viewshed analysis was carried out using Google Earth Pro Viewshed tool, which allows creating a viewshed from a single target point using a digital surface model (DSM), which takes account of screening factors, such as buildings and vegetation.

Two scenarios were analysed:

- Target point 1 was placed on the south-facing roof surface (see top image);
- Target point 2 was placed on the north-facing roof surface (see bottom image).

The viewshed analysis proved that the roof surface cannot be seen beyond the existing woodland cover around the site (to the west, north and east), and that only footpaths to the south which provide straight line views towards the building would also provide partial views of the roof surface (see top image).

VISUAL SURVEY

A visual survey was carried out on 17 August 2023 to verify the results of the viewshed analysis on site and understand the landscape and visual character of the local area.

Site photographs were taken using a full frame digital single lens reflex (DSLR) camera with 50mm lens and, where necessary, stitched into panoramic views using Image Composite Editor 2.0 (cylindrical projection).

The visual survey confirmed the initial findings of the viewshed analysis - the visibility of the reservoir's roof surface is very limited. The findings are discussed in detail on the following pages of this report alongside ten viewpoint panoramas illustrating the existing views from key/representative locations.



Above: Viewshed analysis (source: Google Pro), southern roof side



Above: Viewshed analysis (source: Google Pro), northern roof side

LOCAL FEATURES AND VIEWPOINT LOCATIONS



VIEWPOINT PANORAMAS

VIEWPOINT 1

This viewpoint is taken from High Hill Field, to the north west of the existing reservoir building. This popular destination includes child play and picnic areas, and is well frequented by the public due to its flat topography, large maintained grassland area and the proximity of a visitor car park.

The existing reservoir building is largely screened by vegetation and only glimpses of its light green metal cladding are possible through gaps in tree cover, including a coniferous screen around the reservoir, which will also provide screening in winter. The installation of the solar array on the roof of the existing building will have no impact on the character of this view or amenity of visual receptors at this location.



Above: Viewpoint 1 location plan



Above: Viewpoint 1

VIEWPOINT PANORAMAS

VIEWPOINT 2

This viewpoint is taken from the uppermost, western part of Wildflower Meadow, which is the central field to the north of the reservoir building. It is taken from a footpath crossing the field, which is enclosed on all sides by woodland. This area is used for recreation by walkers. Whilst there are other footpaths in this field, this viewpoint is located on the uppermost part of the hill, representing the worst case scenario for views of the site.

The existing building is largely screened by vegetation and only glimpses of its light green metal cladding are possible through gaps in tree cover, which includes a coniferous screen around the reservoir providing effective screening in winter. The installation of the solar array on the roof of the existing building will have no impact on the character of this view or amenity of the visual receptors at this location.



Above: Viewpoint 2 location plan



Above: Viewpoint 2

VIEWPOINT PANORAMAS

VIEWPOINT 3

This viewpoint is taken from one of the most elevated locations in the park, the easternmost part of Wildflower Meadow, near a formal viewpoint with a bench. The area is enclosed by woodland on all sides and thanks to its elevation the views out are longer and cover a large woodland area. This area is used for recreation by walkers. Whilst there are other footpaths in this field, this viewpoint is located on the uppermost part of the hill, representing the worst case scenario for views of the site.

The existing building is completely screened by vegetation. In winter, small glimpses of its light green metal cladding may be possible through gaps in tree cover but similar to viewpoints 1 and 2, any impact on the character of this view or amenity of the visual receptors at this location is highly unlikely. This is due to the double woodland screen when viewed from this location and a large proportion of conifers around the reservoir.



Above: Viewpoint 3 location plan



Above: Viewpoint 3

VIEWPOINT PANORAMAS

VIEWPOINTS 4 - 8

A series of photographs has been taken in close proximity to the reservoir. They represent views from different directions to illustrate a changing visual experience depending on the direction of view, elevation and intervening vegetation. To the east, the roof of the reservoir is completely screened due to the angle of view. Viewpoint 4 illustrates a view from a public footpath running through the woodland area. Viewpoints 5 and 6 illustrate views from a footpath running on an embankment around the reservoir - whilst from the north, view of the roof surface will be possible, views from the west do not allow any visibility of roof surface due to the angle of view. Viewpoint 7 is also located on an embankment, to the south of the reservoir, and it provides partial views of the roof surface. Viewpoint 8 is located on an access track to the reservoir. From viewpoint 7 and 8, the southern slope of the roof surface is visible. It is evident that even in close proximity to the reservoir, the proposed solar array would not be visible from the east and west. From the north and south, partial views of the proposed solar panels would be possible due to the roof sloping north and south.



Above: Viewpoints 4-8 location plan



Above: Viewpoint 4

VIEWPOINT PANORAMAS



Above: Viewpoint 5



Above: Viewpoint 6

VIEWPOINT PANORAMAS



Above: Viewpoint 7



Above: Viewpoint 8

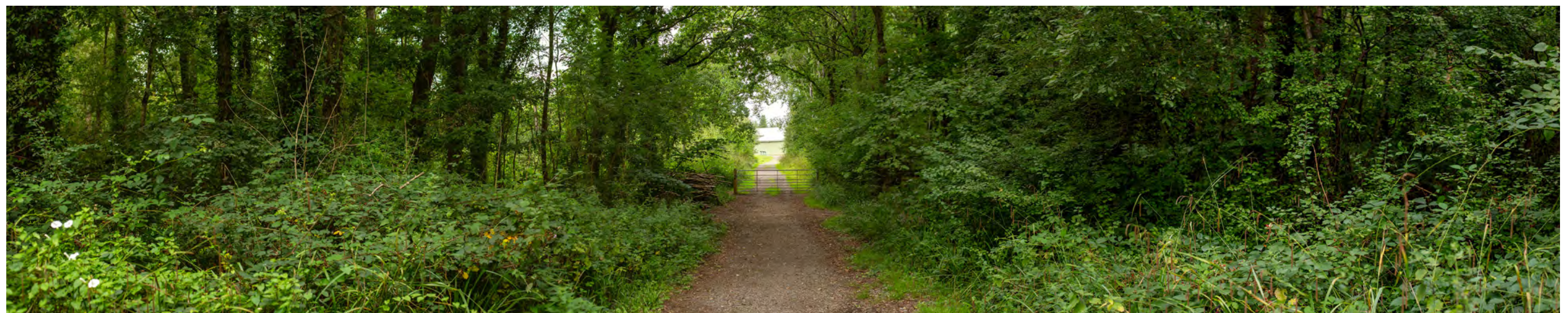
VIEWPOINT PANORAMAS

VIEWPOINT 9

Viewpoint 9 is located within a woodland area to the south of the reservoir, on the site access track. In this view, the existing reservoir is almost completely screened by woodland which would also provide a good screen in winter months, thanks to the depth of this woodland area. Only a glimpse of the reservoir and the roof surface is possible through a gap in tree cover, at the far end of the access track.



Above: Viewpoint 9 location plan



Above: Viewpoint 9

VIEWPOINT PANORAMAS

VIEWPOINT 10

This viewpoint is taken from a footpath in the vicinity to the visitor car parks located to the west of the reservoir. The footpath is enclosed on all sides by vegetation.

The existing building is almost completely screened by vegetation, however, glimpses of its light green metal cladding are possible through gaps in tree cover, which includes a coniferous screen around the reservoir providing effective screening in winter. The installation of the solar array on the roof of the existing building will have no impact on the character of this view or amenity of the visual receptors at this location not only due to the woodland screen but also the direction and angle of view (the roof is not sloping in this direction).



Above: Viewpoint 10 location plan



Above: Viewpoint 10

SUMMARY AND CONCLUSIONS

THE SITE AND ITS CONTEXT

The site is located within a landscape which is rich in important natural conservation designations (most of them strongly associated with the River Itchen), and is surrounded by the Itchen Valley Countryside Park, which is locally valued for its landscape, ecology, visual amenity and opportunities for recreation.

The local landscape has a wooded and enclosed character with a variety of points of interest and park destinations connected by a network of formal and informal paths. These footpaths and public open spaces attract a large number of visitors throughout the year.

The Highwood Reservoir site is accessible to the public (except the interior) and interpretation boards are present next to the existing building.

VISIBILITY

The Highwood Reservoir is surrounded by mature coniferous woodland belt, which dates back to the original reservoir construction in the 1980s and together with other surrounding woodlands, now fully mature, provides a very effective and almost impermeable visual barrier to views from the wider landscape.

There are no views of the reservoir even from areas of higher topography to the north east of the site (eastern Wildflower Meadows). Whilst occasional glimpses of the building from the parkland are possible, the site survey and viewpoint analysis proved that these glimpses are insignificant and the building is barely perceptible from public open areas in the park.

More importantly, the roof surface is not visible at all from the east and west due to its shape (sloping north and south).

The only area of the roof surface visibility is in the immediate vicinity of the reservoir: the embankment to the north and south of the building, and an access track leading to the reservoir from the south. It is a very small geographical area and most of it is not located within the country park itself.

POTENTIAL IMPACTS

Due to the nature of the proposed development, no impacts on the physical landscape are predicted and the only potential impact would be associated with the visibility of the solar array and the potential perceptual changes to the landscape character.

Despite glimpses of the building from the main parkland area (but no views of the roof surface) and limited visibility from the trail in the vicinity of the building, there are so few opportunities to see the roof surface, that the proposed solar installation would have barely perceptible impact on the overall visual amenity for the Itchen Valley Park users.

Due to very limited visibility of the roof surface (and from a very small geographical area), landscape character or visual changes as a result of the project would be negligible and non-material in landscape and visual terms.

RECOMMENDATIONS

We do not envisage any need for additional landscape and visual mitigation, however, we recommend the installation of a new interpretation board (or an update of the existing ones) to accompany the proposed solar array and present this 'green' project to the public.

This roof-mounted solar array would be an opportunity to promote green energy generation (this is highly appropriate in the Itchen Valley park context) and to add interest and attract the public to the existing building.





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