

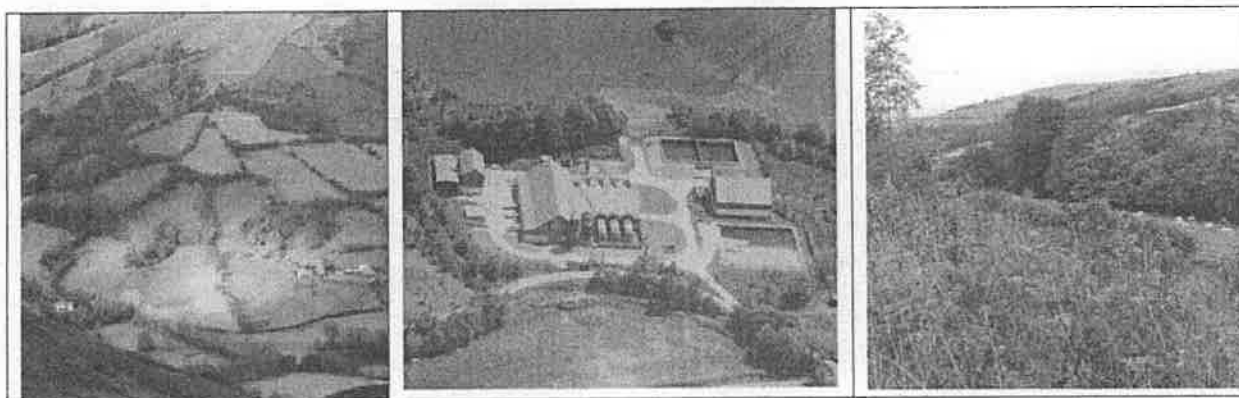
**Crai Water Treatment Works Proposed
Extension**

Landscape and Visual Impact Assessment

incorporating

Planning Design Statement Comments

(Ref 07011-LVIA-Rev E)



Client – Black & Veatch (UK) Ltd



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Produced by:

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1 INTRODUCTION

1.1 Purpose of Report

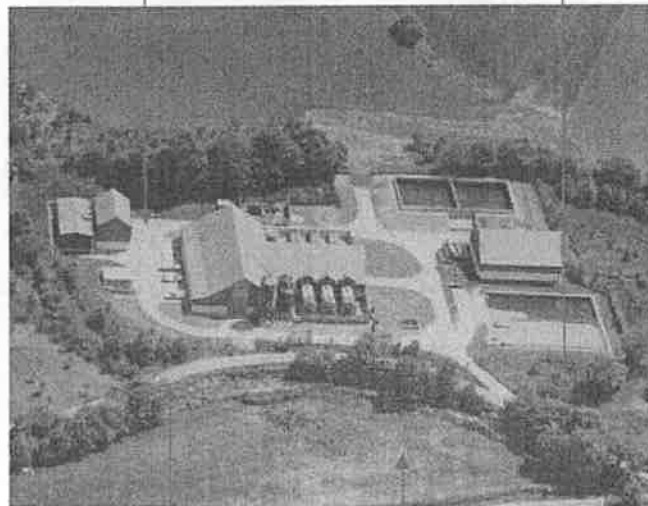
This Landscape and Visual Impact Assessment (LVIA) has been prepared to consider the visual and landscape changes that would occur if a proposed extension to the Crai Water Treatment Works (WTW) is constructed. It is to be considered as part of a planning application to the Brecon Beacons National Park Authority.

1.2 Methodology

It has been prepared using the principles of the Landscape Institute and Institute of Environmental Management and Assessment – 'Guidelines for Landscape and Visual Impact Assessment' – Second Edition. The site has been visited twice in different weather conditions in October, 2006 and June 2007. The latter visit was specifically made to consider the visual impact of a revised extension layout. Comprehensive photographic surveys have been produced on both occasions. To assist the reader's understanding of the current WTW and proposed extension site a reproduction of an oblique aerial photograph is included below. The photograph is quite old now and was taken shortly after the plant was constructed. The tree growth along the small watercourse Nant Tywynni is now considerably more extensive.

Existing Water Treatment Works

Position of Existing Footpath



Access Road to Danone

Field Site of Proposed Extension

Nant Tywynni (now with greater bankside tree cover)

Aerial Photograph of Existing Water Treatment Works and proposed extension site.

Crai Water Treatment Works – Proposed Extension

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Quality Control Table

Report Ref:	07-011 LVIA-Rev E			
Revision	Author	Check	Reason for Issue	Date
FM – No Revision	AW	SR	Client comment	Oct 06
FM – A	AW	SR	Client comment	Oct 06
FM – B	AW	SR	Final Client comment	Nov 06
FM – C	AW	SR	Issue to National Park Authority	Nov 06
RLC – D	SR	DWJ	Client comment on modified field arrangement	Jun 07
RLC – E	AW	SR	Second Issue to National Park Authority	Jul 07

1.3 Water Treatment Work Extension Construction Details

The following Proposal plans have been supplied by Black & Veatch (UK) Ltd to allow the LVIA to be undertaken. They are all reproduced as A3 prints in Appendix A.

- 141303-00-7580-A – Location Plan
- 141303-00-7581-A – Existing Site Layout
- 141303-00-7586-C – Proposed Water Filtration Building (1 of 2)
- 141303-00-7587-C – Proposed Water Filtration Building (2 of 2)
- 141303-00-7588-D – Proposed Site Elevations – Long Sections
- 141303-00-7589-D – Proposed Site Layout

These drawings show the following key details:

- A building measuring 43m x 21m in footprint to house filtration plant.
- Associated storage tanks and chemical dosing equipment around the curtilage of the building.
- A new tarmaced surface access road around the building and associated tanks.
- A straight ridge line.
- The ridge line level is at 237.00m AOD with surrounding ground level running from 231.00m to 225.30m AOD. This gives a height for the building of between 6.00m at its lowest extent and 11.70m at its greatest.
- The proposed roof has an asymmetrical pitch running to two different eave levels of 234.80m, and 235.30m. This gives an effective ground to eave height for the building of 7.80m at its lowest extent and 11.00m at its greatest. These heights are the effective heights of the building's vertical wall planes.
- The building's roof would be clad in box profile cladding – slate grey in colour, the upper part of the walls would again be in box profile cladding in a mid-orange brown or olive green, similar to the existing treatment works as illustrated in Appendix E.
- The lower part of the walls would be concrete block, and a grey green in colour

1.4 Authorship of this LVIA

The initial LVIA was produced by Ferguson McIlveen LLP who ceased trading on the 1st November, 2006. Black & Veatch (UK) Ltd instructed former employees of Ferguson McIlveen to update the initial LVIA to reflect the changes they had designed to reduce the visual impact of the proposed extension.

2 LANDSCAPE CHARACTER

Firstly the character and qualities of the wider landscape are identified followed by the individual landscape characteristics of the proposed site.

2.1 Landscape Character of Wider Landscape

The proposed site is a rural location within the Brecon Beacons National Park, on the fringe of the Black Mountains. The site can be found in an upland valley approximately 2km north-east of Craig-y-nos Country Park. The site's immediate surrounding is predominantly agricultural improved grassland used for sheep and horse grazing. In the wider context much of the surrounding hillsides have been designated with rights of access by the Countryside Council for Wales. Semi-natural broadleaf woodland, wet heath/acid grassland, marshy grassland and plantation coniferous woodland are the main vegetation types in the area, as identified by the Phase One Habitat Survey Data. Land-use is predominantly as upland and valley pastoral farms. The upland grazing is unimproved hill grazing for sheep (although occasional goat spotted during surveys) and improved /semi-improved grass fields in the lower valley for over-wintering and lambing stock. The improved valley fields have occasional horse pasture, in fact such a pasture exists to the south of the current treatment works.

Photosheet 1 overleaf illustrates the landscape character of the wider area.

2.2 Landscape Characteristics of the Proposed Site

The proposed site is on land owned by the adjacent Dderi Farm, who currently access the land via an underpass under the A4067, where they graze sheep in the field. The new stretch of the A4067 main road travels 25m west of the proposed site and supersedes the old main road. The old road is still in existence at this point, although disused, and runs parallel with the proposed site; this is proposed as an access route into the extended works.

The Nant Tywynni flows along the eastern boundary of the site, creating an attractive river corridor of a range of mature tree and plant species, including maple, ash, willow and beech. Beech is not typical of upland scenes in this part of South Wales. There are very few residential properties near the site, and none have direct views of the proposed development.

Photosheet No 2 illustrates the landscape characteristics of the proposed development site and immediate surroundings,

PHOTOSHEET 1

LANDSCAPE CHARACTER OF WIDER AREA

	View to Fan Gyhirych Hill to East of Proposed Site This is a typical scene from a sheltered valley bottom where deciduous trees flourish and sheep graze on improved pasture to the upper valley sides where coniferous woodland and open poor sheep pasture exist. Photograph taken in September when autumnal colours are starting to form.
	Tafarn-y-Garreg Pub on Valley Floor This pub lies to the south of the site and is typical of the type of dispersed built development along the valley floor. Painted white render and Welsh slate roof add to its simple architectural style to give a traditional appearance that is in keeping with the rural landscape. Note how the surrounding hills enclose the view when within the valley.
	Aerial View of Typical Brecon Beacon Scene The lower, better agricultural land is divided into small pasture fields bounded by hedgerows. The upper, poorer grazing is divided into larger fields by stone walling with some left as unimproved bracken areas. Note how tree growth follows the more sheltered side valleys running up the hillsides. Dominant colours are greens and warm browns.
	Upland Scene at Site of Former Shelter This view illustrates the lack of tree or hedge cover on the tops of the hillsides. The predominant colours are browns and olive greens. Stone is the local construction material as used in this former shepherd's shelter. Extensive views are gained from these higher slopes down into the more fertile valley bottoms marked by the richer green tones of improved pasture and the darker green ribbons of field boundary hedges.

PHOTOSHEET 2

LANDSCAPE CHARACTERISTICS OF THE PROPOSED SITE

**View East across site towards Danone Bottling Plant**

Taken from the current farm access into the field this shot shows the improved pasture field that slopes down to the Nant Tywynni (line of trees in the mid-ground). The site slopes from north to south as well. The Danone bottling plant can just be seen behind the river trees.

**View North up Former A4067**

The former A4067 is now closed with the realigned road built upon an embankment approximately 25m to the west. This former highway would be used as the access road into the WTW extension. The landowner of the proposed site still maintains the former roadside hedges. There are no hedgerow trees in this stretch of hedge.

**View West from Former A4067 to new Road Embankment**

The steep, artificially uniform slope of the realigned road's embankment can be seen in the background of this shot. It is quickly being incorporated into the local landscape scene with tree and scrub coverage of its bank face.

**Nant Tywynni on East Boundary of Site**

This view illustrates the upland, stoney and shallow nature of this small watercourse. The un-grazed land along its banks have allowed native tree species such as alder and birch to grow. In addition sycamore have spread along its length. The tree growth that follows its route is a quality landscape characteristic that should be retained within the local scene. The Nant Tywynni forms the eastern boundary along the site's whole length.

2.3 Visual Characteristics of Building Proposals

The building is not typical of the locality in terms of scale, height, architectural style or building materials.

The scale of the building, if left unscreened will appear artificial in this predominantly rural scene where individual buildings are smaller such as farms and small groups of cottages.

The building's architectural style is industrial in character which will appear incongruous in the rural landscape if left unscreened. Historically buildings of this size were not built in this rural area of Wales so there are no local architectural style to compare it with.

The proposed building materials are again not traditional in style, however, as stated above there are no historic large-scale local buildings to take a design lead from. It could be argued that the building should be clad in local stone, or have painted render elevations and a welsh slate roof to match local materials. However, the scale of the building means local products would appear inappropriate and wrong on such a large building.

The choice of muted, non-reflective colours for the box-cladding will reduce its visual prominence and assist its blending into the wider landscape. These colours will also match the existing treatment works materials and assist in the visual linking of the extension to the original works. The non-reflective colours, especially the slate grey roof will reduce its noteability on sunny days especially for distant receptors on the surrounding hills.

Of greatest importance is the colour of the proposed building. A slate grey colour (RAL No 7011 – sometimes referred to as Iron Grey) would be used for the roof to give the impression of a traditional slate rook when viewed by distant receptors. The landscape advisors have requested that no translucent panels, skylights or solar energy panels are placed on the roof. Even though all these features would reduce energy consumption at the plant their visual impact would be considered negative compared to a simple roofscape with a uniform local colour.

A number of options exist with the colouring of the cladding and block work that form the vertical slides of the building shell. All the colours proposed are muted and reflective of the local scene and colours experienced in the Brecon Beacons.

- Olive Yellow – RAL 1020
- Reed Green – RAL 6013
- Biege Grey – RAL 7006
- Reseda Green – RAL 6011
- Yellow Olive – RAL 6014

It is proposed the final choice of colours is agreed with Planning Officers after technical consultation with cladding manufacturers.

3 KEY RECEPTORS

There are a number of key visual receptors of the proposed development; these are classified as 'close' and 'distant' receptors. Key views have been identified for these receptors, based on their existing quality and amenity value. Key view point locations and direction can be found on the Viewpoint Locations Plan, Drawing No. CL06330-100-003, which can be found in Appendix B.

3.1 Close Receptors

3.1.1 Road users (Key Viewpoint 1 and 2)

The vehicular traffic travelling along the A4067 will have views looking east across the proposed site. Passengers and drivers in buses, lorries and coaches will have clearer views into the site, as their elevated position (compared to cars/motorbikes/cyclists) will allow them to look over the existing roadside vegetation and hedgerow. Mitigation measures will need to address the views from the varying heights of vehicles. It is worth noting that the site is moderately well screened by deciduous tree stock during the summer months, although it will become more exposed during the winter and spring months. Seasonality will be an important issue to address during the mitigation process.



Key viewpoint 1a
Looking south-east along the
A4067 towards Glyntawe.

Key Viewpoint 1 is from the A4067 looking south-east towards Glyntawe, the impressive range of hills in the background is framed by the trees in the foreground; the road sweeps away and draws the eye towards the valley views. Even on a rainy day (as above) the dramatic landscape remains spectacular. Key viewpoint 1b shows the same view on a fine day with the hill and valley view even more evident. The proposed covered water treatment plant will impinge on this framed view.



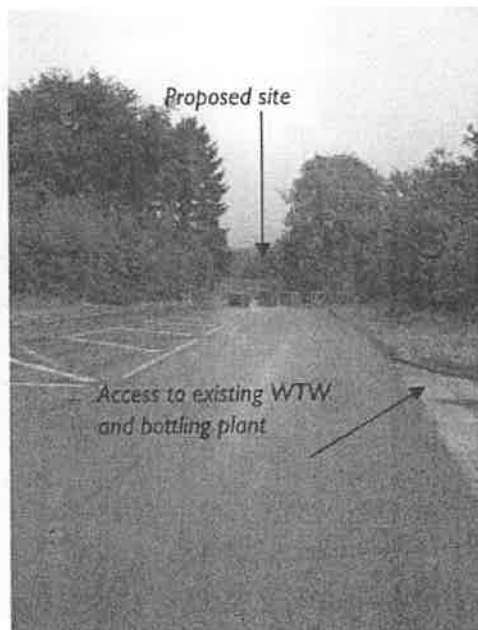
Key Viewpoint 2.
Looking north-east from the
A4067 towards the site.

Key Viewpoint 2 is from the A4067 looking north-east towards one side of the Fan Gyhirych hill.

3.1.2 Public footpath users (Key viewpoint 3)

A Public Footpath emerges (via a stile) just to the south of the site, it meets the old road, which is now a lay-by. The old road also serves as an access into the existing WTW and the Danone bottling plant. Although walkers have limited views toward the proposed site from the stile, views into the site **Key Viewpoint 3** are noticeable as walkers approach the stile from the lay-by. The existing mature vegetation is effective in screening the proposed development during the summer months, however views will be more apparent during the winter and spring months when the deciduous trees are not in leaf.

Close receptors on both the public footpath and the A4067 will be able to see the large, curtain-side lorries that deliver to, and collect from the Danone Bottling Plant. This is especially noticeable to the casual viewer who will not spot the bottling plant or WTW but will seek them out as they try to identify why such a large vehicle is in an otherwise, apparent rural setting.



Key Viewpoint 3.

Looking north-east towards the proposed site.

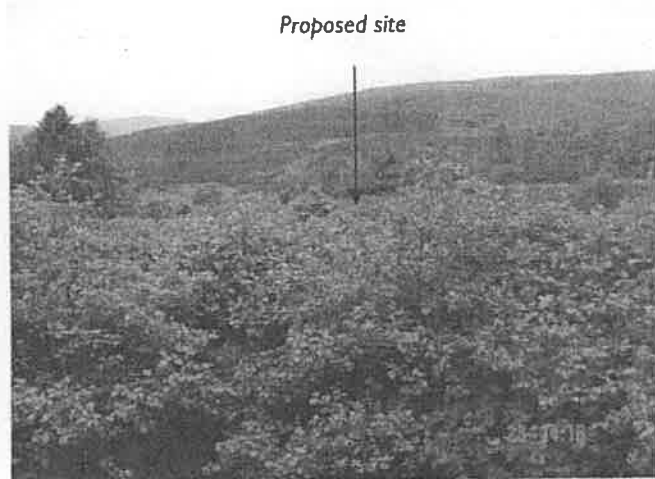
3.1.3 Public bridleway users (Key Viewpoint 4)

A request has been made to the Public Rights of Way Officer by Glan Tywynni farm to re-route the Public Bridleway which currently passes to the north of the proposed site and past Glan Tywynni farm itself. Although the existing Bridleway is marked on the OS Explorer Map OL12, on site there is no signage, and no bridge crossing the Nant Tywynni.

The proposed bridleway route will start at the access road to the existing WTW, and run parallel with the Nant Tywynni until turning east along the boundary between the existing WTW and the bottling plant (it is proposed to run along the bottling plant side of the boundary). The main views into the site from the proposed Public Bridleway are along the access track to the WTW and bottling plant. Increasing the existing streamside vegetation along this short stretch would reduce the views of the proposed building and associated works.

A plan of the existing and proposed routes can be found in Appendix B.

Riverside trees were removed when the original WTW was constructed. The trees were felled to allow a pipeline to be set under the Nant Tywynni. This break in the bankside tree cover is at a lesser state of maturity than either side of it. This is where the least screened view of the proposed extension would be gained from.



Key Viewpoint 4.

Looking west across the Nant Tywynni towards the A4067.

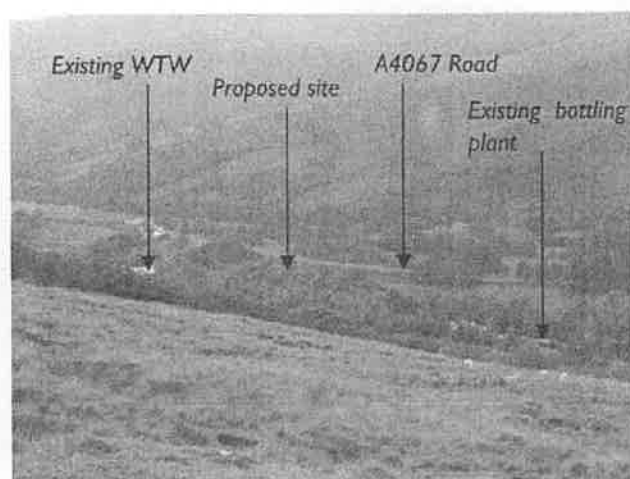
3.1.4 Tafarn-y-Garreg Public House visitors

The Tafarn-y-Garreg Public House can be found 250m south-west of the site, along the A4067. This has been popular with visitors, especially during the warmer months; there is an overspill car park for patrons opposite the pub and a provision of outdoor seating to the front of the pub. There are no views from the pub towards the proposed site due to the landform and existing mature vegetation.

3.2 Distant receptors

3.2.1 Permitted footpath along dismantled quarry railway (Key viewpoint 5)

A permitted footpath travels along the line of the dismantled railway upon the hills to the east of the site (OS Grid Reference SN 2858, 2173). Walkers have a well screened view of the existing site due to the mature trees around the site and along the Nant Tywynni. Views towards the proposed extension are obscured by existing mature vegetation on the hillside (in the foreground) and around the works itself (key view point 4). The Danone bottling plant is visible to walkers from the permitted footpath; although a row of established conifers currently mitigates the negative visual impact of the bottling plant.



Key Viewpoint 5.

From the permitted footpath, looking south west towards the proposed site.

3.2.2 Surrounding hill users

Crai WTW is nestled amongst the hills of Cefn Cul, Fan Gyhrych, Fan Fraith, Allt Fach and Carreg Goch; many of these impressive hills are designated as 'land with rights of access'. This attracts walkers, paragliders and hang gliders to frequent the hill tops – these users have views down towards the existing and proposed sites.

The South East Wales Hang Gliding and Paragliding Club, as well as visiting pilots make use of the flying opportunities the surrounding hills have to offer. It would be virtually impossible, and quite impractical to attempt to mitigate the development for the gliders; the very nature of their sport means they may view the development from directly above it.

From a certain level above the proposed development, typically 340m AOD it is unrealistic to think that the scheme can be totally hidden from view for walkers. This is approximately 120m above the site in the valley bottom. Nonetheless proposed screen planting adjacent to the works will go some way to reduce the negative visual impact of the proposed extension for receptors on the surrounding hillsides.

4 VISUAL IMPACTS

The visual impact of the proposed extension will need careful consideration due to its location within the National Park, and the attractive landscape character of its setting. However the proposals are an extension of the existing WTW and will lie in close proximity to a bottling plant; this demonstrates that the landscape is able to accommodate similar types of buildings and land uses. Nevertheless the bottling plant and existing WTW are set back and down from the road, with different layers of mature vegetation screening the views into the two sites. Whereas the proposed site for the extension works is set adjacent to the road, and on higher ground, between 1.3 and 7m above the ground level of the existing works. Consequently tree screening will play an important role in reducing the adverse visual impact of the proposed extension on the existing views.

Sections 4.2 – 4.6 outline the main visual impacts of the proposals from each of the key view points. Information is given in terms of when the impacts will occur (during construction or operation) and whether the impact is positive or negative, and temporary or permanent. After each impact the suggested mitigation measures are outlined, these are supported by the Detailed Planting Proposals Plan, (Drawing No. 07-011/0001), which can be found in Appendix D.

4.1 General impacts

4.1.1 Construction

Visual impacts

- Temporary loss of visual amenity due to works machinery and vehicles accessing and working on site.

Visual impact: moderate adverse

Duration: temporary for duration of works

Suggested Mitigation:

- Employ best practice methods during construction, for example where possible locate construction compounds and storage areas away from key viewpoint for close receptors and adjacent to suitable vehicle access points.
- Ensure the safety of Public Footpath and Bridleway users is considered as both routes are within close proximity to the site, and will potentially share the lay-by and former A4067 with works vehicles. Liaison with the Public Rights of Way Officer required.

Visual impact:

- Loss of an estimated 60m mature roadside hedge on the west side of the former road to allow construction of the building.

Visual impact: minor adverse as this hedge is only partially visible from the new road.

Suggested mitigation:

- Ensure that vegetation removal is kept to a minimum, attempting to retain as much of the existing mature hedge as is practically possible.
- Replant the cleared area with native species to act as a visual screen to the building and to create habitat value..

4.1.2 Note on Photographic Representations

All the representations have been produced to give an impression of the visual appearance of the proposed scheme when the screen planting has been introduced. The proposed planting is shown as well established, maturing vegetation approximately 15-20 years after planting.

Due to the upland nature of the site the tree growth illustrated on the photo-sketches is conservative. Tree growth rates are discussed under 5.0 – Residual Effects.

4.2 Key Viewpoint 1 – Road Users Travelling South

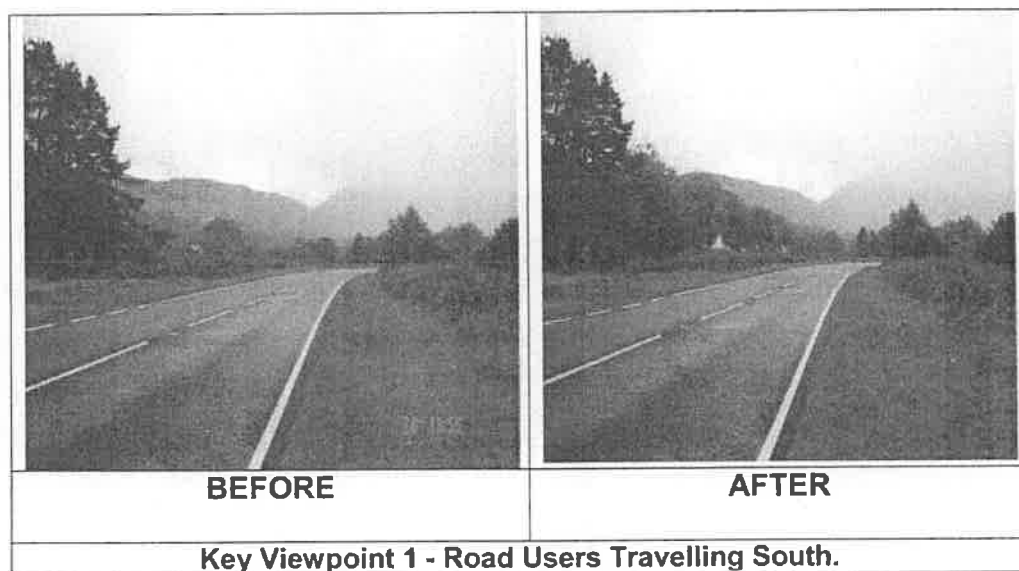
Visual impacts during operation:

- Permanent reduction of the visual amenity for the road users, more so for higher vehicles such as lorries, buses and coaches. The framed view towards the valley will include the proposed building roofline until the planting is 10-12 years old.

Visual impact: moderate adverse

Suggested Mitigation:

- Dense screen planting along the existing embankment between the new road and the disused old road. The planting will be a woodland mix with an upper storey tree layer, an under storey small tree/scrub layer. It would be comprised of the same native deciduous and coniferous species already prospering in the area.
- Proposed tree planting on a lowland immediately adjacent to the disused road; to provide another layer of screen planting. This screen would again comprise an ultimate tree canopy and an under-storey of small trees and scrub species.
- Specify an appropriate building colour. For example the existing WTW building has been finished in a warm orange-brown, with the associated tanks and storage containers in a dark green. Producing a similar colour scheme will blend the proposed works' colours into the existing landscape. Appendix E 'Example Image of Existing Building' illustrates the proposed colour finishes for the extended site.



4.3 Key Viewpoint 2 – Road Users Travelling North

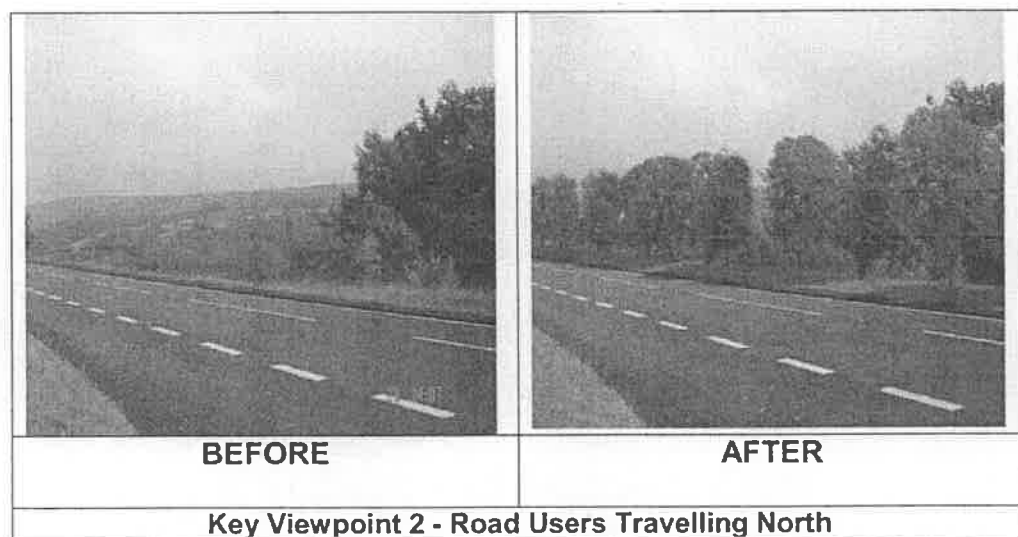
Visual impacts during operation:

- The pleasant open views east towards the Fan Gyhirych hillside will be permanently reduced by the proposed building roofline. The building will reduce the quality of the view for people in vehicles passing on the A4067, particularly for users of higher vehicles such as lorries, coaches and buses.

Visual impact: moderate adverse

Suggested Mitigation

- Dense screen planting along the existing embankment between the new road and the disused old road. The planting will be a woodland mix with an upper storey tree layer, an under storey small tree/scrub layer, to be comprised of native deciduous and coniferous species to match the species already existing in the area.



4.4 Key Viewpoint 3 – Public Footpath Users

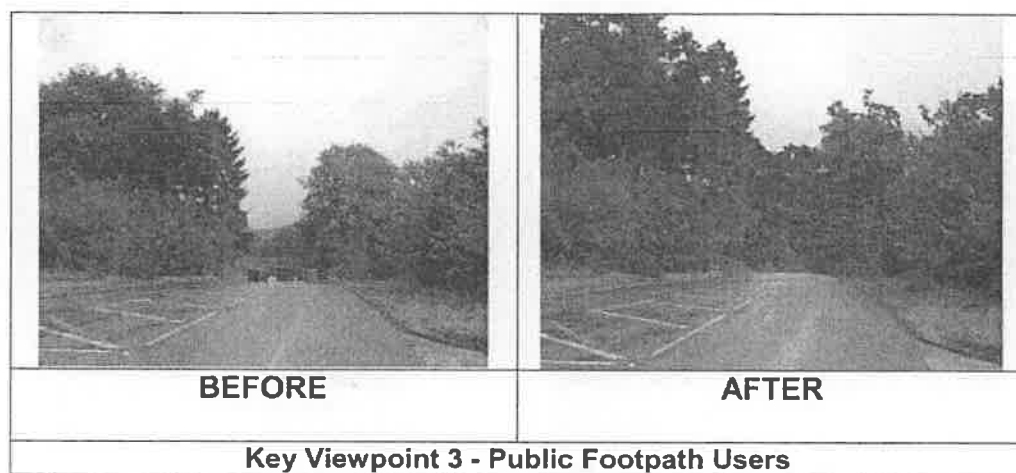
Visual impacts during operation:

- Walkers will have permanent, partially obscured views of the south face of the proposed building, and the ancillary tanks to the south of the site. Pedestrian use of the former A4067 would be restricted as this is to become the access road to the extension. This would also give the landscape benefit of stopping walkers gaining close-up views to the west elevation of the proposed extension from the former highway.

Visual impact: minor adverse

Suggested Mitigation:

- Deciduous and coniferous planting at the southern end of the proposed site, to tie into existing mature planting. This will help to screen the negative views, although the west face of the building will still be partly visible due to land form and the open nature of the access road. The proposed planting will include native coniferous species to take account of seasonality.
- Taking the opportunity to plant wet woodland tree species in the area of the site that is liable to flooding in a 1 in a 1000 year event.



4.5 Key Viewpoint 4 – Public Bridleway Users (assuming the proposed re-route is approved)

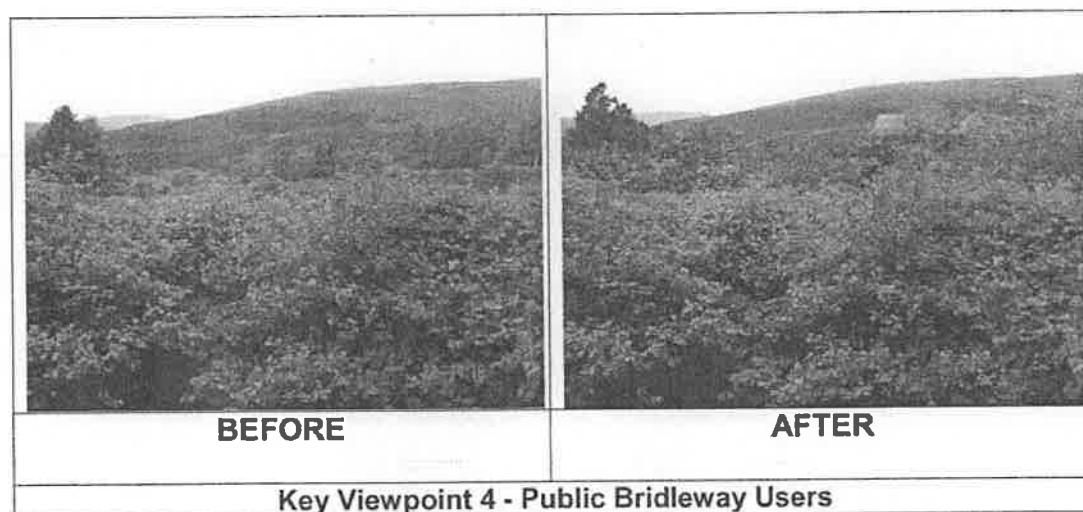
Visual impacts during operation:

- Horse riders will have permanent, negative views over the existing vegetation along the Nant Tywynni into the southern end of the proposed site, the building, chemical storage tanks and access road will be visible from the key view point along the Bridleway.

Visual impact: minor adverse

Suggested Mitigation:

- Proposed hedge planting to tie into existing hedgerow (along access to bottling plant), with similar species and managed to a similar height as existing, of approximately 3.0m.
- Proposed woodland edge planting on the right bank, especially at the existing vegetation break of the Nant Tywynni, to tie into existing species and to incorporate a deciduous/coniferous mix.



4.6 Key Viewpoint 5 – Permitted Path Users (along dismantled quarry railway)

Visual impacts during operation:

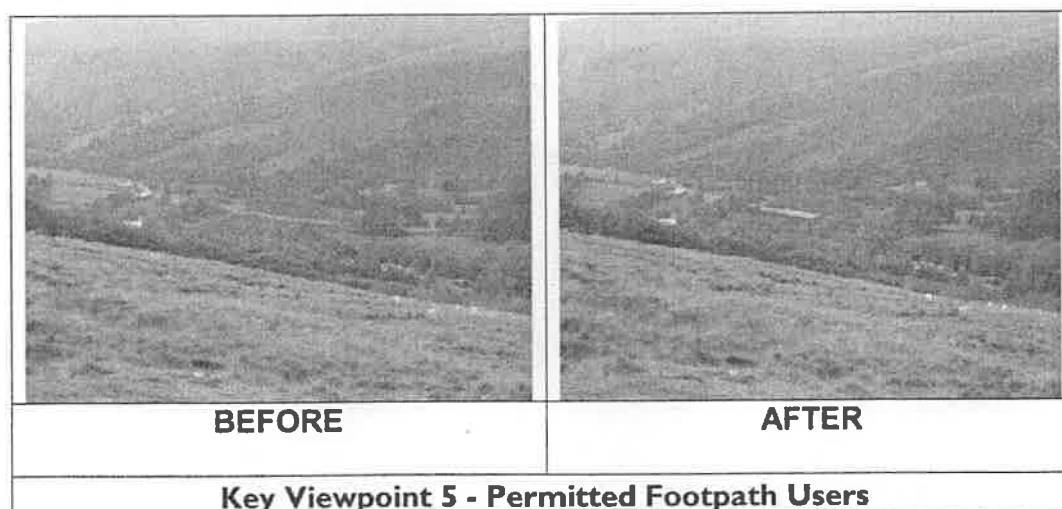
- The roofline of the proposed building will have a negative visual impact for walkers along the permitted footpath. However the current views of the WTW and bottling plant roofs have been limited by the existing mature tree stock, which partially screen sight of the existing works and the proposed extension site.

Visual impact: minor adverse

Suggested mitigation:

The proposed tree and shrub planting suggested for other areas of the site will aid a reduction in the negative visual impact of the proposed works. However, further mitigation measures are suggested:

- To mark the boundary between the proposed works and the remainder of the field which the works are to be located in, a new hedgerow is proposed. This will run across the site from the former A4067 road to the Nant Tywynni. The hedgerow will be comprised of species similar to the existing hedgerow and help to restore an apparent natural field pattern. A timber post and wire stock control fence will be erected no less than 1.0m away from the outside edge of the hedge, to protect the newly planted hedge from grazing animals. The hedge plants would be planted in staked vermin control guards to ensure successful establishment.
- The area between the existing hedge and the proposed site will be planted with clusters of tree species such as *Quercus robur*, *Fraxinus excelsior*, *populus tremula* and *Pinus silvestris* (Oak, Ash, Aspen and Scot's Pine). The trees will be planted into a low maintenance wildflower meadow mix such as EM2 Standard General Purpose Meadow Mix, Emorsgate Wild Seeds to add to the site's ecological and habitat value. The effective screening height of these trees will be increased by planting them on a bund created from site excavations.



5 RESIDUAL EFFECTS

5.1 Operational Effects

It is anticipated there will be a minor increase in the volume of works traffic from the current 6-10 vehicles, to 8-12 vehicles per day during the operation of the proposed works. This increase is not significant in landscape or visual terms. The curtain sided lorries accessing the Danone Bottling Plants will still be visually more noticeable than the WTW and the vehicles servicing the WTW. The form, colour and shape of the building will not change during operation.

We recognise that night-time illumination within the National Park is not encouraged. However, a certain level of safety lighting is required to allow staff to attend to site in an emergency situation, or in the darker winter months. It is suggested that the minimum level permanent lighting is used to allow staff to safely reach controls for floodlights that would be required to tackle an emergency situation at the extension.

5.2 Mitigation Planting

The proposed planting that has been suggested to screen the works follows the existing tree and scrub types found in the area. This suggestion is made for a number of reasons:

- They have a proven establishment success in this upland climate.
- They will match visually the existing tree and scrub stock so as not to introduce a contrasting planting element.
- These native species maximise the habitat value for local wildlife.
- Development of similar highway side plants have been accepted by the local Highway Authority along the side of the A4067. Any planting would be at least 3.5m from the back of highway kerb to allow road maintenance.

The planting mixes are largely deciduous but conifer species are included to give additional screening during winter and early spring months. A summary of plant mixes is given in Appendix D.

The following growth rates are predicted for feathered whip and hedging stock plants in this upland area.

Years After Planting	Deciduous & Coniferous Screening Belt	Native Hedgerow
0 years (planting size)	0.6 – 0.9m	0.45 – 0.60m
1 – 2 years	0.9 – 1.2m	0.6 – 0.75m
2 – 4 years	1.2 – 1.8m	0.75 – 1.00m
4 – 6 years	1.8 – 2.5m	1.00 – 1.25m
6 – 8 years	2.5 – 3.5m	1.25 – 1.50m
8 – 10 years	3.5 – 5.0m	1.50 – 1.90m
10 – 15 years	5.0 – 6.5m	1.90 – 2.4m
15 – 20 years	6.5 – 8.0m	Maintain at 2.4m
20 – 25 years	8.0 – 10.0m	Maintain at 2.4m
25 – 35 years	10.0 – 12.0m	Maintain at 2.4m

5.3 Passage of Time

With the growth of the proposed screen planting, and assuming it is not removed in the future, the site will become less and less visible to the key receptors. The reduction of visual impact is summarised for all the key receptors in the summary table in Section 6.0.

5.4 Demolition of Proposed Extension

Should the works ever require demolition an effective tree screen would have formed around the extension site to allow demolition with the minimum of negative visual impact.

6 SUMMARY AND CONCLUSIONS

6.1 Landscape Character of Wider Area

The landscape character of the greater area is attractive upland scenery of rolling high hills and woodland cover in the more sheltered valleys. It has high scenic value which is typical of the wider Brecon Beacons National Park designation. It's predominant land-use is for upland sheep farming. It is open with sparse built development of occasional farm buildings located in the valley bottoms for shelter.

6.2 Landscape Characteristics of Proposed Site

The landscape characteristic of the proposed site is of a sloping, pasture field. It's features of landscape note are;

- the small watercourse the Nant Tywynni that runs along the site's east boundary,
- the semi-mature tree stock that follows the course of the Nant Tywynni.
- a mature field boundary hedge runs along the field's west boundary where it abuts the former route of the A4067. All these features have a positive quality in the immediate landscape scene.

Also of landscape note, but as negative features, is the dumped material on the former route of the A4067, the presence of Japanese knotweed on the former A4067 and the artificial profile of the new, embanked A4067 on the incised valley land-form. The visual prominence of the new road and embankment is reducing with the establishment of road side tree and scrub planting.

6.3 Key Viewpoints and Visual Impact on Receptors

The key viewpoints for the close and distant receptors are presented in the summary table overleaf along with the proposed mitigation measures and the resulting, long-term visual effect.

6.4 Significance of Visual Impact

In the short-term, during construction the works will be highly visible and intrusive to key receptors on the new B4067 and other close receptors on nearby public rights of way. On completion of construction the extension will be clearly visible, particularly to close receptors on the new A4067 giving a moderate, adverse impact on their enjoyment of the scene.

This moderate, adverse impact will diminish over time with the growth of screen planting. It will, however, take an estimated 15 to 20 years to grow to a state where the visual impact is reduced to a minor adverse impact with the

extension barely visible through the mitigation planting along the new A4067 (as illustrated for Key Viewpoint 1).

Ref	Receptor	Significance of Viewpoint	Impact Without Mitigation Planting	Proposed Mitigation and Time Until Plant-ing is Effective	Residual Impact with Mitigation Planting	Significance of Residual Impact
1	A4067 Road Users travelling south	Most significant of all viewpoints as this is how the greatest number of people would experience the site.	Moderate adverse impact with building roofscape visible and upper part of the building's west elevation.	Screen planting along west boundary of site, embankment between old and new A4067. Muted colours. Screen in 15-20 years.	Minor adverse with some views to roofscape occasionally present but it is anticipated that most receptors would not see extension.	No significance within the landscape scene when the mitigation planting has established to screen views for road users.
2	A4067 Road Users travelling north	Second most significant viewpoint, again based upon the number of road users experiencing the site travelling in this direction.	Moderate adverse impact with building roofscape visible in the foreground of the view east towards the Fan Gyhirych hillside.	Screen planting along west boundary of site and on the embankment between old and new A4067. Muted colours. Screen in 8-10 years.	Minor adverse with some views to roofscape occasionally present but it is anticipated that most receptors would not see extension.	Minor negative significance to the loss of views to Fan Gyhirych when the landscape screen has successfully established
3	Footpath users near entrance to existing WTW	Third most significant viewpoint. The few path users already experience the presence of the existing WTW	Minor adverse impact seeing the south gable end of the building and associated tanks	Screen planting in south part of site effective in 8-10 years.	Neutral impact as the extension works will be totally screened by the tree planting to the south of the site.	No significant visual effect
4	Bridle path users (should it be reinstated)	This is the least significant viewpoint of all the key receptors as the bridle path is currently not in existence.	Minor adverse impact with upper part of the east facade and parts of the roofscape visible.	Screen planting along east boundary and along the Nant Tywynni. Effective in 8-10 years. 10-15 years	Minor adverse impact as the presence of the extension's roof will still be evident in parts to people travelling west along bridleway.	No significant visual effect as the few users of the bridleway, (if it is reinstated), will have sight of the Danone bottling plant and the existing WTW in this partly-industrialised part of the National Park.
5	Permitted footpath users on elevated ground to east of site	Fourth most significant receptor group.	Minor adverse impact with the roofscape visible from these elevated positions. Albeit the views are very distant and notability will depend on climatic conditions.	Muted, non-reflective colour of roof to prevent reflected sunlight catching the receptors' eyes. Planting on site's north and east boundaries effective in 20-25 years.	Minor adverse impact within the wider rural scene with small sections of the roofscape still likely to be visible after trees have attained a height of 8-10m.	There are such extensive views from elevated positions that the extension will never be totally screened. However the residual visual impact on the greater landscape is considered to be negligible.

6.5 Conclusion

The proposed WTW extension can be successfully sited in this location with only minor adverse landscape and visual impacts. Once the planting proposals have established, the proposed development will have a minor negative visual impact for all the key receptors.

The proposed planting will tie into the existing landscape and help to reduce sight of the WTW extension. The planting has been designed to enhance the site's habitat value for local wildlife.

The extension is likely to remain partially visible to the road users of the A4067, horse riders on the bridleway (should it be reinstated) and from the hills to the east of the site. The screen planting and muted cladding colours will make the main building barely noticeable. In visual terms its presence would have to be sought out by the key receptors rather than it dominating views, as it would without screen planting.

For road users the close views to the screen planting along the A4067 would replace the more distant views to the Fan Gyhyrch hillside for an approximate 280m stretch. This will reduce the enjoyment of extensive upland landscape views for road users but there is limited significance because:

- a) in landscape terms a 280m stretch of closed view in a multi-mile journey through upland landscape does not reduce the total enjoyment of the overall route.
- b) the site of the WTW extension without screen planting would have a moderate adverse impact on the view and enjoyment of the road journey.

Appendix A

Black and Veatch (UK) Ltd's Drawings for Water Treatment Works Extension Proposal

This WIA report has considered the visual impacts of the proposals shown on the following drawings:

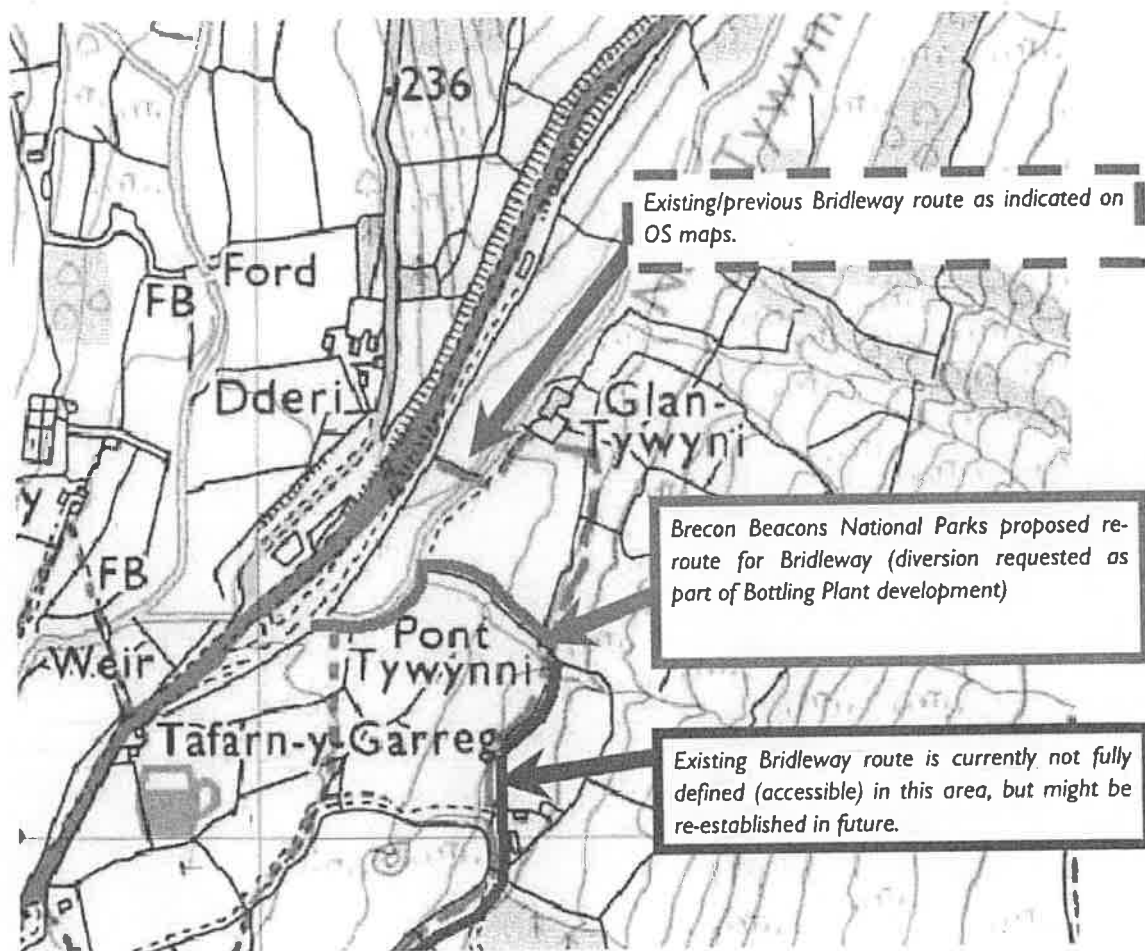
- 141303-00-7587-C – Proposed Water Filtration Building (1 of 2)
- 141303-00-7587-C – Proposed Water Filtration Building (2 of 2)
- 141303-00-7588-D – Proposed Site Long Sections
- 141303-00-7589-D – Proposed Site Layout

Appendix B

Viewpoint Location and Direction Plan, Drawing No. CL06330-100-003
(Former Ferguson McIveen drawing)

Appendix C

Map showing the existing and the proposed route for the Public Bridleway



Appendix D

Detailed Planting Proposals Plan, Drawing No. 07011-0100-0001 and Proposed Planting Mixes

APPENDIX D - PROPOSED PLANTING MIXES

ADVANCED ROADSIDE PLANTING		
<i>Latin Name</i>	<i>Common Name</i>	<i>%</i>
<i>Pinus sylvestris</i>	Scot's Pine	40
<i>Fraxinus excelsior</i>	Ash	20
<i>Quercus petraea</i>	Sessile Oak	20
<i>Sorbus aucuparia</i>	Rowan	10
<i>Salix caprea</i>	Goat Willow	10

WOODLAND EDGE PLANTING		
<i>Latin Name</i>	<i>Common Name</i>	<i>%</i>
<i>Crataegus monogyna</i>	Hawthorn	30
<i>Acer campestre</i>	Field Maple	20
<i>Sorbus aucuparia</i>	Rowan	15
<i>Betula pendula</i>	Silver Birch	10
<i>Ilex aquifolium</i>	Holly	5
<i>Salix caprea</i>	Goat Willow	5
<i>Salix cinerea</i>	Grey Willow	5
<i>Sorbus torminalis</i>	Service Tree	5
<i>Sorbus aria</i>	Whitebeam	5

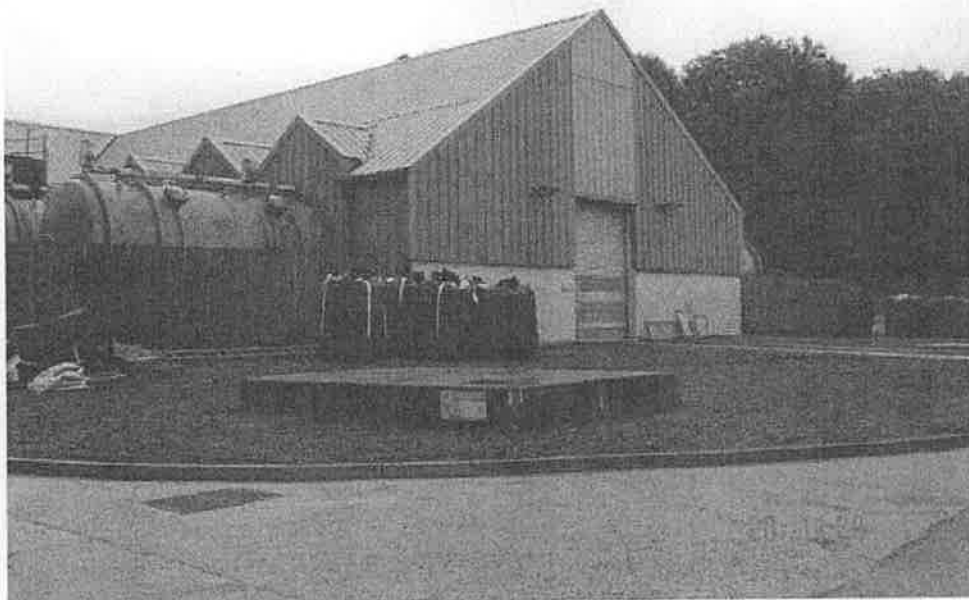
WOODLAND PLANTING		
<i>Latin Name</i>	<i>Common Name</i>	<i>%</i>
<i>Pinus sylvestris</i>	Scot's Pine	40
<i>Quercus robur</i>	Common Oak	20
<i>Populus tremula</i>	Aspen	20
<i>Betula pendula</i>	Silver Birch	10
<i>Sorbus aucuparia</i>	Rowan	10

NATIVE HEDGE		
<i>Latin Name</i>	<i>Common Name</i>	<i>%</i>
<i>Crataegus monogyna</i>	Hawthorn	66
<i>Prunus spinosa</i>	Blackthorn	10
<i>Prunus padus</i>	Bird Cherry	5
<i>Ilex aquifolium</i>	Holly	5
<i>Rosa canina</i>	Dog Rose	5
<i>Viburnum opulus</i>	Gelder Rose	3
<i>Euonymus europaeus</i>	Spindle	3
<i>Viburnum lantana</i>	Wayfaring Tree	3

WET WOODLAND PLANTING		
<i>Latin Name</i>	<i>Common Name</i>	<i>%</i>
Populus nigra	Black Poplar	30
Betula pubescens	Hairy Birch	25
Quercus robur	Common Oak	15
Fraxinus excelsior	Ash	15
Salix caprea	Goat Willow	15

Appendix E

Photographs of existing buildings on current Crai WTW



Example image of existing timber fencing and colour of cladding

