EIA/Sustainable Development

Welsh Water Treatment Plant, Glyntawe





Introduction

- Development is located adjacent to Welsh Water's existing Crai WTW at Nant Tywynni, Glyntawe.
- Crai WTW currently supplies the whole of the Swansea Valley and a large proportion of the city of Swansea.
- Supplies can be diverted to supplement other areas across South Wales such as Port Talbot and Bridgend (100,000 homes)
- The purpose of the new development - to upgrade the Crai Plant to meet the "Water Quality (Water Supply) Regulations 2001." Black & Veatch (B&V) are the designers working on behalf of Welsh Water.
- In particular there is a need to improve turbidity, iron and manganese levels within the water supply.



- Location - one of the most scenic mountainous areas within the Brecon Beacons National Park (BBNP).
- In 2005, this western half of the national park gained UNESCO Global Geopark status.
- Hostility between the local population and developers with many local people classifying this as an "eyesore," (Blot on the Brecon Beacons, 2009).
- BBNP authority responsible for regulating and controlling the planning and development
- One of the authority's statutory aims is to "help the social and economic well being of the people who live in the park".
- Local people feel they are failing in this duty.

UNESCO Global Geopark

Geopark celebrates its geological heritage shaped by ice and changed by man through farming and the industrial revolution. Its communities are diverse, working together to promote sustainable economic development, especially in tourism.



Who Is Involved?

- Welsh Assembly Government
- Brecon Beacons National Park
- Welsh Water
- Black and Veatch
- Local Residents





The view from the top of Pen y Fan



Brecon Beacons National Park

- Planning permission originally refused by the National Park planners, but then overruled by the National Park Committee.

- "The first purpose of the National Park is to ensure that the natural beauty, wildlife and cultural heritage of the protected landscape is conserved."

(Brecon Beacons National Park's Wildlife and Environment statement)

- "....in rural areas it is important to recognise that development in the countryside should embody sustainability principles, benefiting the rural economy and local communities while maintaining and enhancing the environment."

(BBNP Draft Unitary Development Plan, 2007)

(Brecon Beacons National Park, 2009).

Welsh Water

Welsh Water goals –

- Protecting public health
- Safeguarding the environment
- Responding to climate change

(Welsh Water: Our Sustainable Future, 2007)

Community Problems





Black to Green Project

- To conserve and revegetate an eroding upland mire
- Locally generated gorse mulch
- Seedbank of acid grassland species

Waun Fignen Felen

- **Valley Mire**
- **Southern valley end – exposed area of peat – vegetation removed through erosion**
- **Causes?:**
  - **Catastrophic wild fire**
  - **Changes in groundwater and surface drainage patterns**
  - **Changes to rates of subterranean cave formation in underlying limestone**
  - **Climate change**
  - **Acid rain**
  - **Livestock grazing pressures**

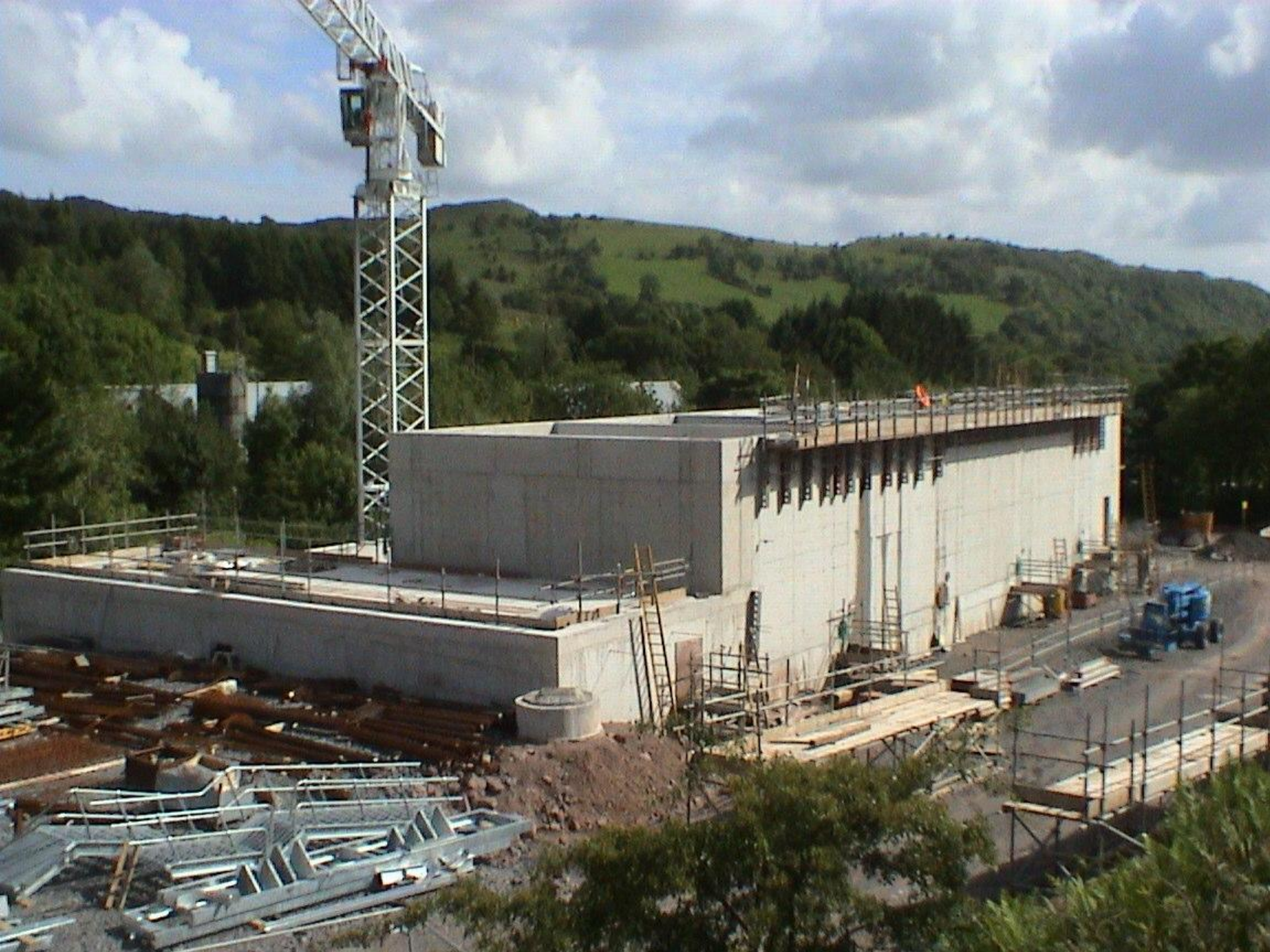

Fire in Borth, Feb 2014
25,000m2 affected

Historical accounts

- Likely fire started process
- Combination events especially wind and rain erosion
- Aerial photographs- erosion present 1940s
- Current rate of change is slow enough to warrant intervention

Case Study: Waun Fignen Felen





First prevent exposed peat being washed away





The main sink at southern part of the bog












Twyn Walter.
Swallow Hole + Stream
to Dan-yr-Ogof.







Gorse spreading











Other peat reserves in the Brecon Beacons now being addressed



Hay Bluff

- 120 brash bales
- 100 tonnes heather
- Repair damage started by fires in 1976
  - “We are very aware that areas of eroding peat bogs and moorland are contributing to greenhouse gas emissions”. (Sinnadurai, 2014: 1)
- Also home to the largest remaining population red grouse *Lagopus lagopus scotica*



- Proposed upgrades include:

- New Counter Current Dissolved Air Floatation and Filtration system (CoCoDaff)
- Ancillary Chemical Dosing Equipment
- Two new concrete flocculation tanks

- Incoming water will be dosed with sulphuric and ferric acid and passed through the new concrete flocculation tanks.

- Water, after undergoing a coagulation & flocculation stage is met by an upward flowing layer of micro bubbles.

- This traps suspended particles and takes them to the surface of the tank for subsequent removal.

- A further filtration stage onto existing filters which will be utilised as secondary filters for manganese removal



Consider the documents provided. Determine whether the development is sustainable and decide whether or not you would have given this project planning permission and why.





Landscape Characterisation

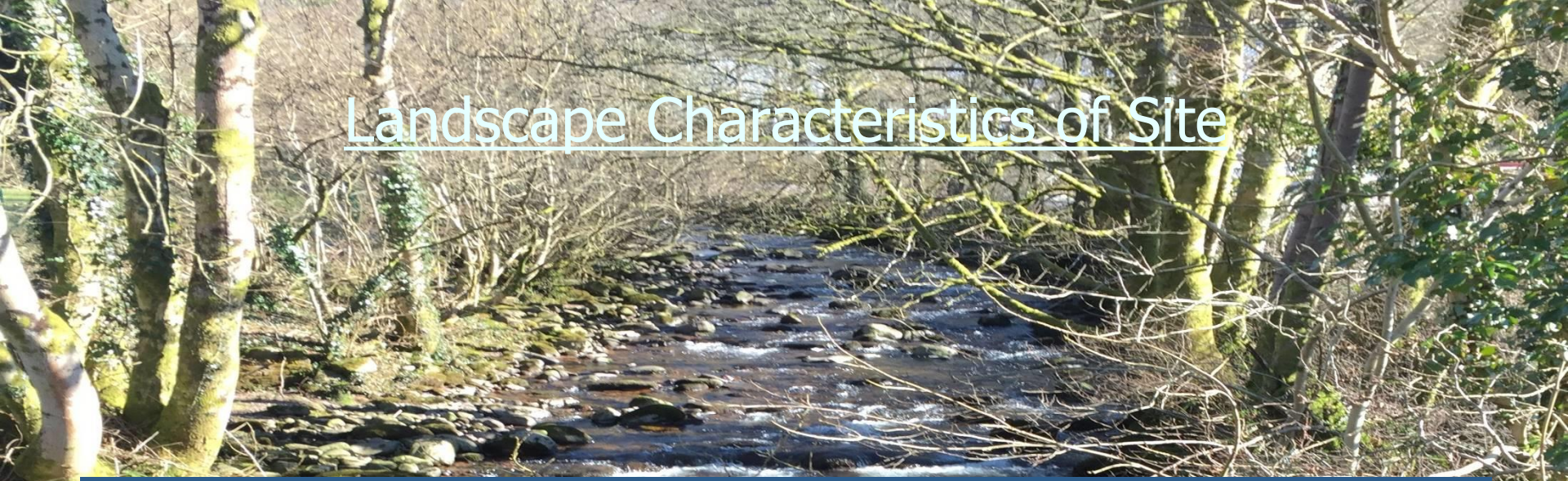
Landscape Characteristics of Wider Area

- Rural Location within BBNP
- Fringes the Black Mountains
- Upland Valley approx.2km north –east of Craig – y – nos Country Park
- Much of surrounding area has been designated with rights of access by CCW
- The main vegetation types within the area include:
  - Semi – natural broadleaf woodland
  - Wet heath/acid grass land
  - Marshy grass land
  - Plantation Coniferous Woodland

(Landscape and Visual Impact Assessment, 2007: *Supporting Documentation*)



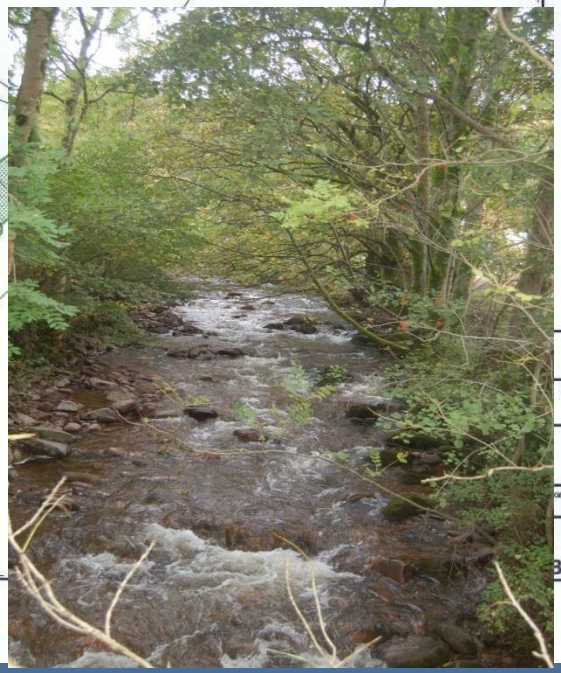
Landscape Characteristics of Site



- Land owned by the adjacent farm (Dderi Farm), who currently access site via underpass under the A4067.
- The A4067 is a new stretch of road, running 25m west of the proposed site. The old disused main road runs parallel to the site and it being used as an access route into the extension
- There a few residential properties near to the site
- Nant Tywynni River flows along the eastern boundary of the site between the extension and old works. Creates an attractive river corridor and is surrounded by a range of existing mature tree and plant species.







CRAI WTW
FLOOD RISK ASSESSMENT

LOCATION PLAN AND CROSS SECTION LOCATIONS

Welsh Water ALLIANCE

Contract no. 141303 | Approved: | Date: MAR 07

Scale: 1:1,250 (at A3)

BLACK & VEATCH

Drawing no. Figure A2.1

(Source: Supporting Documentation: Flood Consequences Assessment, 2007)

Environmental Impacts

According to the Black and Veatch ecologist:

-No environmental designations covering the site / no tree preservation orders.

-Only low quality pasture habitat will be affected.

-Trees that have to be removed will be replaced and will be declared free of nesting birds by an ecologist prior to removal.

-May be a requirement for a river crossing for a new pipeline – this will be carried out using methods that will reduce disturbances to riverine / existing species.

-All chemical spillages will be cleaned up immediately

Recent Planning review of an unauthorised change of use from agricultural land to residential garden

- the application includes development in the open countryside and opportunities to accommodate biodiversity enhancement measures should be provided by the applicant. This could include provision of a bat brick or gaps for bat roosting behind weatherboarding; further guidance on this is provided by the Bat Conservation Trust at: http://www.bats.org.uk/pages/accommodating_bats_in_buildings.html . I recommend that at least two features for bats or nesting birds are specified (type and location) by the applicants. 4. There is also scope for native-species hedgerow planting to the western boundary of the development. 5. It will be important to ensure that any external lighting avoids light-spill towards the watercourse, is downward-pointing and is on a timer to reduce impacts

No signs of badger (a badger latrine had been previously recorded along with sightings).



-Setts south of existing plant. It is likely that the proposed site forms a small part of a wider territory.

-No signs of Water Vole were found.

-An otter spraint was found during survey near site entrance, but no holts found.

-The Nant Tywynni flows into the River Tawe 100m downstream. CCW have reported both otter and water vole on this river, therefore pollution from the development must be controlled to ensure no impact on water quality.



-No Great crested newt (GCN) records have been found for the local area

GREAT CRESTED NEWT *Triturus cristatus*



- Previous mitigation measures for plant extension
- Found throughout the Brecon Beacons

- There are records of a red kite nesting near to the site and barn owl sightings. However, no suitable nest sites were discovered during the survey.
- During the construction phase there is likely to be increased amounts of both noise and air pollution.
- A flood consequence assessment was also carried out which involved Hydraulic Modelling and a Hydrology Study.
- Models showed, that the development is not at risk from flooding in a 1 in 100 year event.
- Area up stream to access road is susceptible to flooding in a 1 in 1000 year event.

(Welsh Water, Flood Consequence Assessment,2007).



- Welsh Water has given £50,000 to the National Park to restore and stop eroding of the peat bogs (as a part of the planning permission agreement)

(Environmental Risk Assessment, 2006: *Supporting Documentation)*

Visual Impact Assessment



Visual Impact Assessment

- Visual impacts along with suitable mitigation procedures will need to be carefully considered due to the location of the development.
- The visual characteristics of the building are not typical of the locality in terms of scale, height, architectural style and building materials.
- This development has an industrial style, if left unscreened it is likely to appear unnatural and artificial in its predominately rural setting.
- Buildings located near to the development are much smaller consisting of small cottages and farms.
- Local residents in particular have argued that building should be clad in local stone and materials to fit in with its surroundings.
- However due to the size and scale of the structure (12m high and 24m long), it is possible that even local materials may appear inappropriate.





- During construction it is inevitable that the works will appear highly visible and intrusive particularly to key receptors in vehicles and on near by public rights of way.

- Vehicles travelling along the road adjacent to the site (A4067) will have views looking east across the site. Elevated vehicles will have clearer views into the site.

- There is a public footpath and bridal way on south side of the site and upon hills to the east of the site. Surrounding hill users also include walkers, Paragilders & Hangliders. These users will have views onto the development (Landscape and Visual Impact Assessment, 2007).



(Landscape and Visual Impact Assessment, 2007: *Supporting Documentation*)

Mitigation Procedures

- Where possible locate construction materials & storage areas away from key viewpoint for close receptors.
- Replant cleared area with native species to act as a visual screen, this will also be of a wildlife benefit.
- Ensure vegetation removal is kept to a minimum.
- Dense screen planting using native species along existing embankment between the new road and disused old road.
- Plant wet woodland tree species in the area that is liable to flooding
- Where hedgerow has to be removed, replant with similar species and manage to a similar height to restore a natural field pattern.
- Ensure the building is finished in an appropriate material and colour.
- Clad in natural local materials.
- Choose non-reflective roof materials
- Use similar colour schemes as the existing works.
- Ensure that no unnecessary signage, lighting & fencing is built.

- Try not to create too much of a solid barrier that would itself appear unnatural.
- Start planting vegetation in advance to the construction.
- Do no use any ornamental plant species that may seem unnatural.
- Use spare material to make a higher level to give effective screening quicker.
- Ensure screen planting is actively managed.

















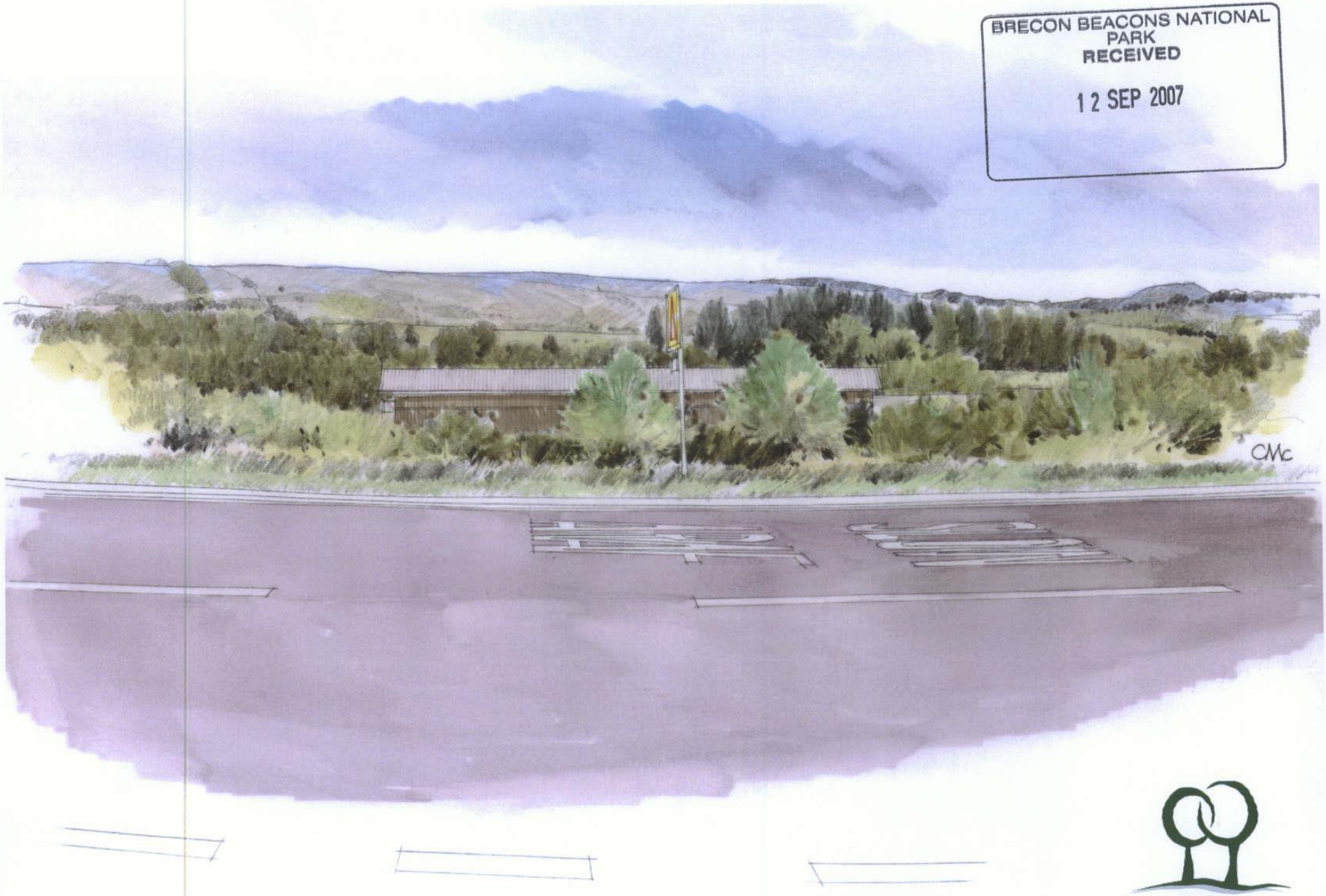

5


RHYBUDD
I LADRON
THIEVES
BEWARE
P.P.E.


PHYLLOID
TLADIRON
THIEVES
BEWARE
P.P.E.
must be



BRECON BEACONS NATIONAL PARK
RECEIVED
12 SEP 2007



07-011-0100-0020 VIEW EAST TO UNSCREENED SITE WITH NO ADDITIONAL LANDSCAE PLANTING

Ryder
Landscape Consultants



BRECON BEACONS NATIONAL PARK
RECEIVED
12 SEP 2007

07-011-0100-0021 VIEW EASTTO SCREENED SITE WITH ADDITIONAL LANDSCAE PLANTING, SHOWN 10-12 YEARS AFTER PLANTING

Ryder
Landscape Consultants

10 years on the building isn’t screened but the photo was taken in February when many of the trees and plants are dormant.



Social Impacts?



Social Impacts

- Slate roof will be sourced from a local source
- Plan to include hydro turbine which will lessen the carbon footprint of works
- Monthly updates sent to local council and community
- Jobs will be created during the construction stage
- Chlorine will be generated on site, lessening transport emissions and traffic increase due to lorries delivering chlorine tablets
- Rural area mainly farmland and heavily reliant on tourism from National Park
- New treatment works will remove sediment from the water source

- Construction period lasted from September 2008 – March 2010
- Construction period means an increase in traffic flow, energy usage, noise and visual pollution
- Many opposing views on works from local people
- New works will remove the need for many other smaller plants along valley







Economic Impacts

- Total cost of project is £15.8 million (£1.4 million for filter refurbishment)
- Welsh Water is spending £1.3 billion on replacing 8 works in South Wales
- Project brings in jobs at the construction stage – from Bristol!
- Building of new works means that the 5 existing employees, manning the existing works will continue to have full time work, manning the new works
- Essentially the plant is automated.

So how was the consultation process delivered?



Consultation – inadequate!



- Maes yr Eglwys Farm
- Tafarn-y-Garreg
- Danone Bottling Plant
- A planning notice on a lamppost/telephone pole along an unused highway
- Notice placed in the Brecon & Radnorshire
- Wrong Community Council was contacted
- Llywel Council – passed it back

Germane to its draft development policy, the Brecon Beacons National Park Authority claim they encourage:

"high quality development that makes a positive contribution to the protection and enhancement of the outstanding natural environment of the National Park" (BBNPA, n.d:1)





Insufficient scrutiny of the impacts reports



- Landscape assessment focuses on the A4067
- Gateway to the Beacons disputed
- Buildings cannot be seen when 'travelling at speed'
- Contradictions – main receptors bridleway and road users. Also those recreating in the Beacons
- the locality has no significant tourist trails nearby

Local Attractions within 2 miles of the development





Other attractions









The Beacons Way walk offers some of the best views the National Park has to offer.
3.8 million visitors pa. (BBNPA, 2016)



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

"….the scale, if left unscreened, will appear artificial in the predominantly rural scene"

"..the building's architectural style is industrial in character and will appear incongruous in the rural landscape….there are no local architectural styles to compare with"

Stone cladding rejected due to :

"the scale of the development, local stone products would appear wrong and inappropriate on this building".

Disconnect of planning constraints

- No mention of residents
- Planning constraints appear to ignore those that apply to residential of farm properties nearby.



Mitigation

- Tree planting cannot be the only concession
- Cladding – cedar timber
- Roof – Slate composite
- Planted embankment
- Artificial lighting remains an issue



Lessons Learned?

- Community engagement
- Consultation
- Challenge documentation
- Play by the rules
- Compromise usually brings community benefits.

For Next Week

- Consider how Health Impact Assessment can be used to improve the health of a local community.
- Identify some case study examples