



## Appendix 3.14

### Flood Risk and Drainage Technical Note (July, 2022)

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# BARRY BIOMASS PLANT

**Technical Note: Flood Risk and Drainage**  
Prepared for: Biomass UK No.2 Limited

SLR Ref: 407.13039.00002  
Version No: Issue 4  
July 2022



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## 1.0 Introduction

SLR has been retained by Biomass UK No.2 Limited to review the available information on Flood Risk and Drainage matters in relation to the Barry Biomass Facility (the Facility) located in Barry, South Wales. The aim of the review is to identify and address potential issues and/or gaps in the information that in our professional opinion would be required to support the submission of the Environmental Statement (ES) prepared as part of an Appeal against the Enforcement Notice issued by Vale of Glamorgan Council.

Specifically, our review provides the justification to scope out flood risk and drainage issues from the ES.

### 1.1 Description of Development

The development is a renewable energy generation facility (Barry Biomass Facility) which has been designed to recover energy from pre-prepared mixed waste wood feedstocks using gasification. The gasification facility is an Advanced Thermal Treatment process that produces a combustible synthesis gas, which is then used to raise steam and generate electricity through a steam cycle turbine generation.

### 1.2 Location and Surrounding Area

The Barry Biomass Facility ('Development') is located off Woodham Road, Barry, Vale of Glamorgan at NGR ST 12605 67691 (the 'Site'). The Site location is shown by Drawing BARRY-01-DWG-01-20000.

The Development is located within the docks area of Barry on brownfield land immediately adjacent to industrial units on Woodham Road to the south west and Viaduct Road to the north east. The Site is roughly rectangular, averaging approximately 60m in width, by 195m in length and the Site boundary encloses an area of 1.07 hectares (ha). The Site is oriented roughly north-west/south-east. The land is flat, and prior to development was surfaced with a mixture of hardcore and compacted earth, with some areas of concrete with little vegetation evident on the site.

The Site is bound by David Davies Road to the south and Ffordd-y-Mileniwm to the north. The eastern extent of the Barry Waterfront development is located approximately 200m to the west of the Site and Dow Corning Chemical Works complex is located approximately 1km to the north east.

The Site has one entrance off David Davies Road. Access on to the surrounding road network is gained via Cory Way onto Ffordd Y Mileniwm. The Site is fully developed, with the construction of the Barry Biomass Facility having taken place between February 2016 to Q1 2018.

The original application boundary excluded the area of hardstanding at the northern end of the Site denoted as '12 - Vehicle Turning Area' on Drawing BARRY-01-DWG-01-20000. This assessment considers the impact on flood risk and drainage issues of both parcels of land, i.e. the whole Development Site.

## 2.0 Reports Reviewed

In completing this Technical Note, the following documents have been reviewed:

- Flood Risk, Barry Sunrise Chp Plant, Barry Docks. *RSK Environment Ltd, 2008*
- Barry Biomass Facility, Environmental Statement Adequacy Report. *WSP, 2019*
- Decision Notice 2015/00031/OUT. *The Vale of Glamorgan Council, 2015*
- Operational Manager Environment and Engineering internal memorandum reference EE/SP/GTD/L5/1. *The Vale of Glamorgan Council, 2020*
- Email from Ian Robinson date 3 December 2020 regarding discharge of condition. *The Vale of Glamorgan Council, 2020*
- 'As-built' survey of the drainage drawing reference N9334/1 Rev 0. *Laser Surveys, 2019*
- Sol Environment email of 23 November 2020. *Sol Environmental, 2020*
- Drawing BARRY\_01\_DWG\_15\_21110\_D. *GHD, 2018*
- Drawing BARRY\_01\_DWG\_15\_21111\_C. *GHD, 2018*
- Drawing BARRY\_19\_DWG\_01\_40104 Rev A. *GHD, 2017*
- Technical Memorandum, Barry Biomass Drainage As Built Review. *GHD, 2022*
- Topographic Survey, *SLR, March 2022*

## 3.0 Flood Risk

### 3.1 Introduction

The flood risk to the Facility was assessed by Messrs RSK Environment Limited in 2008 as part of the 2010 Permission (2008/01203/FUL) granted on appeal in June 2020 (APP/Z6950/A/2114605). A copy of the assessment is enclosed at Appendix 01. It is understood that Environment Agency Wales (the predecessor to Natural Resources Wales (NRW)) raised no objection to the proposed development on flood risk grounds.

### 3.2 Review against current guidance

The flood risk to the development was assessed against Technical Advice Note 15: Development and Flood Risk (TAN15)<sup>1</sup> and the accompanying Development Advice Maps (DAM).

Neither the TAN15, nor the DAM, have been revised since publication in 2004 and the Facility is currently shown to lie within Zone B defined as 'Areas known to have been flooded in the past evidenced by sedimentary deposits'. The policy response to development in Zone B is that it should be:

*'Used as part of a precautionary approach to indicate where site levels should be checked against the extreme (0.1%) flood level. If site levels are greater than the flood levels used to define adjacent extreme flood outline there is no need to consider flood risk further.'*

At the time there was no tidal level data for Barry and in interpolation between tide levels for Cardiff and Porthcawl concluded that the Facility would be above the 0.1% AEP<sup>2</sup> tidal flood level and as such there was no need to consider flood risk further.

However, extreme sea levels for a range of AEPs around the coastline of the UK is now provided by the Coastal Flood Boundary (CFB) dataset, as published June 2021<sup>3</sup>. Extreme sea levels are provided at a series of locations along the coastline, with each location assigned a chainage. As shown on Figure 3-1, the closest data point to the Facility is Chainage 424 and the estimated 'present day' extreme sea levels are summarised in Table 3-1.

**Table 3-1: Present Day Tidal Flood Levels**

Annual Exceedance Probability	Tidal Level (m Above Ordnance Datum (AOD))
0.5% (1 in 200)	7.49
0.1% (1 in 1,000)	8.56

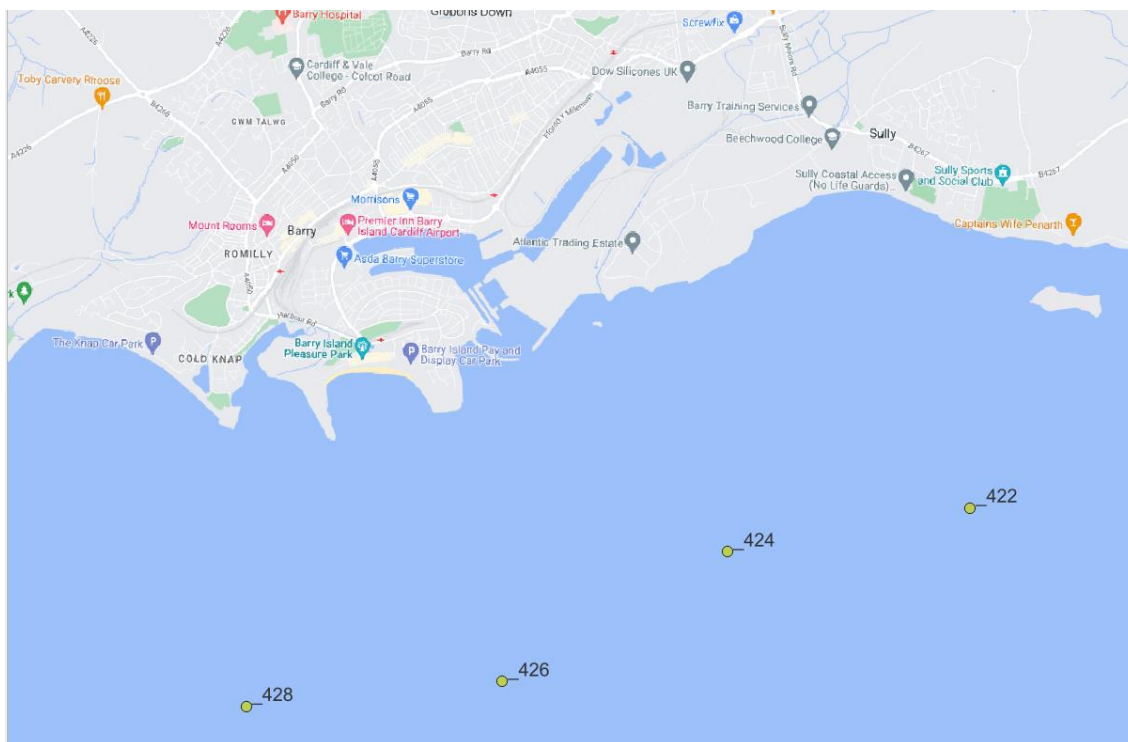
With reference to the recently completed topographic survey of the Facility enclosed at Appendix 02, site levels vary from a low point of circa 7.9mAOD at the site entrance to 9.5mAOD at the northern Site boundary. Therefore, from the site entrance to the northern end of the Main Process Building would be at risk of flooding in response to a 0.1% AEP flood event and as such the flood risk to the facility should be considered in line with the advice in TAN15.

<sup>1</sup> Welsh Assembly Government, 2004

<sup>2</sup> Annual Exceedance Probability

<sup>3</sup> Environment Agency, June 2021. Coastal Design Sea Levels - Coastal Flood Boundary Extreme Sea Levels (2018) (available at <https://data.gov.uk/dataset/73834283-7dc4-488a-9583-a920072d9a9d/coastal-design-sea-levels-coastal-flood-boundary-extreme-sea-levels-2018>)

Figure 3-1: Extract of the Coastal Flood Boundary dataset for Barry



The Facility would be considered a ‘less vulnerable development’ and as such with reference to Section 9 of TAN15, the acceptability criteria requires that the ‘occupiers are aware of the flood risk’ and that ‘there would be no increase in the flood risk elsewhere’.

The Operator of the Facility is aware of the flood risk and if they have not already done so, they should subscribe to the Flood Warning Service provided by NRW and prepare a formal Flood Emergency Plan to document the actions to take should a flood warning be issued. These could form part of a future planning condition or varied conditions as deemed appropriate.

As the Facility is at risk of tidal flooding, any minor displacement of floodwaters would be dissipated over a very wide area and therefore would not increase the flood risk beyond the Site boundary.

The Development Advice in Section 9 of TAN15 indicates that Zone B is:

*‘Generally suitable for most forms of development. Assessments, where required, are unlikely to identify consequences that cannot be overcome or managed to an acceptable level. It is unlikely, therefore, that these would result in a refusal of planning consent on the grounds of flooding.’*

On this basis, it is anticipated that flood risk would not be a material consideration in the EIA as no significant effects are likely. As such it is reasonable for it to be scoped out of the ES.

### 3.3 Review of the 2010 and 2019 VES and Climate Change

On behalf of the Welsh Government, WSP undertook an independent review of the adequacy of the 2010 VES and 2019 VES. Paragraphs 4.2.27 and 4.2.38 of the review report make reference to the lack of an appropriate assessment of the potential impact of climate change on the flood risk to the Facility in the 2010 VES and 2019 VES respectively:

### “Flood Risk & Water

4.2.27. *In addition, although the Environment Agency Wales did state that the site was not at risk off flooding, the accompanying FRA did not assess climatic factors to determine if the site is resilient over its 25-year operational life span. The FRA was based on the 2009 report which does not have site specific data and extrapolates from surrounding areas. In addition, there appears to have no Water Framework Directive screening or assessment undertaken on water resources or quality in the ES.*

### Flood Risk

4.2.38. *The Flood Risk Assessment identified gaps in the data on climate change and future resilience (also identified in the 2010 proposal) and therefore does not align with the Well-being and Future Generations Act (Wales).”*

In their letter to the Appellant (dated 28<sup>th</sup> January 2022) in relation to the scope of the Appeal ES, PEDW stated “PEDW is aware that NRW have adopted the stance that their ‘Flood Map for Planning’ may be used by them as the data which provides the ‘best available information’ on flood risk to inform their consultation responses”.

The impact of climate change over the lifetime of the Facility up until 2049 assuming a starting operational year of 2022 and an assumed operational lifetime of 25 years, is discussed below.

It was the Welsh Government’s intention to revise TAN15 in December 2021, but the implementation has now been postponed until June 2023. However, to support the revised TAN15, the DAM were to be replaced by the ‘Flood Maps for Planning’ published on NRW’s website<sup>4</sup> and have not been withdrawn with the postponement of the update to TAN15. An advisory note on NRW’s website now states:

*‘The Flood Map for Planning has no official status for planning purposes until June 2023, however we may use the data as the ‘best available information’ on flood risk to inform our planning advice’*

An extract of the *Flood Mapping for Planning* enclosed at Appendix 03 indicates that the Site lies within Flood Zones 2 and 3.

Flood Zones 2 and 3 defined by the draft version of the revised TAN15 published for information only in December 2021 are summarised in Table 3-2.

**Table 3-2: TAN15 (2021 Draft) Flood Zone Definitions**

Zone	Flooding from the Sea
2	Less than 1 in 200 (0.5%) but greater than 1 in 1000 (0.1%) chance of flooding in a given year, including climate change.
3	A greater than 1 in 200 (0.5%) chance of flooding in a given year, including climate change.

It is notable that the Flood Zones in the draft TAN15 are defined by the flood risk including an allowance for climate change over the lifetime of a Development (assumed to be to 2120).

<sup>4</sup> <https://flood-map-for-planning.naturalresources.wales/>

The impact of climate change over the lifetime of the Facility has therefore been evaluated and considered in this Technical Note.

### 3.3.1 Welsh Government Climate Change Allowances

Climate change allowances are provided by the Flood Consequences Assessments: Climate change allowances published by the Welsh Government<sup>5</sup>. Table 3 of this guidance, *Estimated mean sea level rise (in metres) for relevant local authority areas by 2100 and 2120* provides the sea level rise allowances for each local authority area in Wales based on RCP8.5 70th and 95th percentiles.

The Facility lies within the Vale of Glamorgan and the sea level rise allowances as summarised in Table 3-3.

**Table 3-3: Vale of Glamorgan sea level rise allowances**

Local Authority Area	Percentile	Mean sea level rise (m) by 2100	Mean sea level rise (m) by 2120
Vale of Glamorgan	70 <sup>th</sup> percentile (higher central allowance)	0.85	1.01
	95 <sup>th</sup> percentile (upper end allowance)	1.11	1.33

Table 3-4 shows the application of these allowances to the 'present day' extreme sea level summarised in Table 3-1.

**Table 3-4: Welsh Government extreme sea levels**

AEP (%)	Extreme Sea Level (m AOD)			
	70 <sup>th</sup> percentile		95 <sup>th</sup> percentile	
	2100	2120	2100	2120
0.5	8.34	8.50	8.60	8.82
0.1	9.41	9.57	9.67	9.89

As discussed, the lifetime of the Development is assumed as 25 years and therefore the impact of climate change on extreme sea levels should be considered to 2049. The Welsh Government advice on climate change allowances does not provide any information other than for the 2010 and 2021 horizons and therefore reference has been made to Environment Agency guidance.

<sup>5</sup> Welsh Government, September 2021. Flood Consequences Assessments: Climate change allowances (available at [https://gov.wales/sites/default/files/publications/2021-09/climate-change-allowances-and-flood-consequence-assessments\\_0.pdf](https://gov.wales/sites/default/files/publications/2021-09/climate-change-allowances-and-flood-consequence-assessments_0.pdf))

### 3.3.2 Environment Agency Climate Change Allowances

Sea level allowances for England are provided by the Environment Agency<sup>6</sup> for each river basin district in ‘Table 2: sea level allowances by river basin district for each epoch in mm for each year (based on a 1981 to 2000 baseline) – the total sea level rise for each epoch is in brackets’. The closest river basin district to the Site is the south west and the sea level rise allowances are summarised in Table 3-5.

**Table 3-5: Environment Agency Climate Change Allowances**

River Basin	Percentile	Sea level Rise (mm year <sup>-1</sup> ). Figures in brackets total sea level rise over Epoch				Cumulative rise 2000 to 2125 (metres)
		2000 to 2035 (mm)	2036 to 2065 (mm)	2066 to 2095 (mm)	2096 to 2125 (mm)	
South west	70 <sup>th</sup> percentile (higher central allowance)	5.8 (203)	8.8 (264)	11.7 (351)	13.1 (393)	1.21
	95 <sup>th</sup> percentile (upper end allowance)	7.0 (245)	11.4 (342)	16.0 (480)	18.4 (552)	1.62

Table 3-6 provides a summary of the extreme sea level at the Facility estimated based on the climate change allowances provided by the Environment Agency.

**Table 3-6: Environment Agency extreme sea level**

AEP (%)	Extreme Sea Level (m AOD)			
	70 <sup>th</sup> percentile		95 <sup>th</sup> percentile	
	2049	2100	2049	2100
0.5	7.85	8.61	7.88	8.63
0.1	8.92	9.68	8.95	9.70

### 3.3.3 Adopted Climate Change Allowances

A comparison of the extreme sea level estimate to 2100 based on the climate change allowances published by the Welsh Government and the Environment Agency is provided in Table 3-7 and indicates a reasonable agreement between the two methodologies for the 95<sup>th</sup> percentile, with the latter providing a slightly more conservative (higher) extreme sea level.

<sup>6</sup> Environment Agency, October 2021. Flood risk assessments: climate change allowances (available at <https://www.gov.uk/guidance/flood-risk-assessments-climate-change-allowances#table-1>)



**Table 3-7: Comparison of extreme sea level to 2100**

AEP (%)	Extreme Sea Level (m AOD)			
	Welsh Government		Environment Agency	
	70 <sup>th</sup> percentile	95 <sup>th</sup> percentile	70 <sup>th</sup> percentile	95 <sup>th</sup> percentile
0.5	8.34	8.60	8.61	<b>8.63</b>
0.1	9.41	9.67	9.68	<b>9.70</b>

It should be noted that the Flood Consequences Assessments: Climate change allowances recommends that:

*‘As a minimum, development proposals should be assessed against the relevant regional 70th percentile presented in Table 3 to inform design levels. An assessment should also be made against the 95th percentile to inform mitigation measures, access and egress routes and emergency evacuation plans.’*

However, as the climate change allowance for the 95<sup>th</sup> percentile provide a good fit between the Welsh Government and Environment Agency advice, as a conservative approach, these have been adopted as shown in Red in Table 3-6.

### 3.4 Assessment of the impact of climate change

With reference to the recently completed topographic survey of the Facility enclosed at Appendix 02, it is clear that the Facility would remain free from flooding for the 0.5% AEP tidal flood event allowing for the impact of climate change to 2049.

In response a to 0.1% AEP flood occurring in 2049, flood levels would reach 8.95mAOD. This would inundate the Main Process Building and Turbine Hall which have been constructed with a finished floor level of 8.71mAOD to a depth approaching 0.25m. The Operator has advised that a flood depth of this magnitude would have no significant impact on the plant and equipment within the building although the Facility would have to be shut down for inspection and cleaning for a short period following a flood (actions to be set out in the formal Flood Emergency Plan). The Wood Processing Warehouse is set at a level of 9.27mAOD and therefore would not be affected by the 0.1% AEP flood in 2049.

It should also be noted the likelihood of a 0.1% AEP flood occurring within a 25 year period is approximately 2.5%.

In summary, the impact of climate change on sea levels over the lifetime of the Facility is unlikely to be significant with a flooding to a depth of circa 0.25m for the 0.1% AEP 2049 flood event.

## 4.0 Surface Water Drainage

### 4.1 Discharge of Conditions 13 and 14

The 2010 Permission granted on appeal in June 2010 was superseded through a new outline application with a revised scheme which was granted in July 2015 (2015/00031/OUT). This 2015 Permission contained a number of conditions, two of which, Conditions 13 and 14, related to drainage and SuDS:

**Condition 13:** *The building hereby permitted shall not be occupied until surface water drainage works have been implemented in accordance with details that have been submitted to and approved in writing by the Local Planning Authority. Before these details are submitted an assessment shall be carried out of the potential for disposing of surface water by means of a sustainable drainage system and the results of the assessment provided to the Local Planning Authority. Where a sustainable drainage scheme is to be provided, the submitted details shall:*

- i) *provide information about the design storm period and intensity, the method employed to delay and control the surface water discharged from the site and the measures taken to prevent pollution of the receiving groundwater and/or surface waters;*
- ii) *include a timetable for its implementation; and provide a management and maintenance plan for the lifetime of the development which shall include the arrangements for adoption by any public authority or statutory undertaker and any other arrangements to secure the operation of the scheme throughout its lifetime.*

**Condition 14:** *The building hereby permitted shall not be occupied until the sustainable drainage scheme for the site has been completed in accordance with the submitted details. The sustainable drainage scheme shall be managed and maintained thereafter in accordance with the agreed management and maintenance plan.*

A copy of the Decision Notice 2015/00031/OUT is enclosed at Appendix 04.

It should be noted that there is no requirement to discharge Condition 14.

The submission to discharge Conditions 13 was acknowledged by the Vale of Glamorgan Council (the Council) on 2 November 2017. On 9 October 2020 the Council's Operational Manager Environment and Engineering responded in an internal memorandum reference EE/SP/GTD/L5/1 requesting that a plan showing the final point of connection from the surface water drainage serving the Facility should be provided to enable them to remove their objection to the discharge of the condition. The 'As-built' survey of the drainage drawing reference N9334/1 Rev 0 prepared by Messrs Laser Surveys that was submitted to the Council to discharge Condition 13 did not however include the final connection.

It is noted that no other matters were raised in the memorandum and therefore it is reasonable to assume that the Council's Operational Manager Environment and Engineering was satisfied with the design of the drainage system serving the Facility.

Sol Environment subsequently submitted copies of drawings BARRY\_01\_DWG\_15\_21110\_D and BARRY\_01\_DWG\_15\_21111\_C to the Council under cover of their email of 23 November 2020, however, these drawings relate to the foul and not the surface water drainage and so the additional information requested was not submitted.

We understand that there has been no response to Sol Environment's email in respect of Condition 13.

Copies of the correspondence and drawings referred to above are enclosed at Appendix 05.

The final connection to an existing surface water manhole is shown on drawing BARRY\_19\_DWG\_01\_40104 Rev A and it is reasonable to assume that this connection was installed as otherwise there would be no outlet for the on-site drainage system, however, this has not been verified with an as built survey.

## 4.2 Review of the drainage design

SLR has not reviewed in detail the drainage design for the Facility other than to confirm that discharge is controlled by a pump discharging at a rate of  $3\text{ls}^{-1}$  for all storm events up to and including the 1% AEP storm event with an allowance for climate change (20% increase in rainfall) and sufficient attenuation storage has been provided to prevent runoff from the Site during this event. As discussed above, the Council made no comment on the general design of the scheme other than to request details of the final connection.

From a site visit in March 2022 it was clear that the Vehicle Turning Area at the northern end of the Site has been formally surfaced and drains into the head of the drainage system serving the Facility. The original designer of the scheme, Messrs GHD, have confirmed that this area was not considered in the analysis. In addition, current guidance requires that a 40% allowance should be made for the impact of climate change rather than the 20% included in the original design.

GHD have therefore rerun their analysis to include the runoff from the Vehicle Turning Area and increase the allowance for climate change to 40%. They have also taken the opportunity to update the drainage model with the 'As-built' drainage system Drawing No. N9334/1 Rev 0 prepared by Messrs Laser Surveys.

GHD has concluded that based on this updated analysis, the system as constructed is able to retain the 1% AEP storm event allowing for a 40% increase in rainfall intensity within the Facility including the runoff from Vehicle Turning Area. A copy of the GHD's Technical Note is enclosed at Appendix 06.

We therefore conclude that there is no reason that the Council would not be in a position to discharge the outstanding Condition 13.

---

## 5.0 Conclusions

### 5.1 Flood Risk

Analysis concludes that there is a relatively low risk of flooding from a 0.1% AEP tidal flood over the lifetime of the Facility and if a flood were to occur it would be to a depth of no more than 0.25m.

The Operator has advised that a flood depth of this magnitude would have no significant impact on the plant and equipment within the buildings.

The minor displacement of floodwaters during a flood arising from the construction of the Facility would have no material impact on the flood risk beyond the Site boundary.

Therefore, the construction of the Facility will have no significant flood impacts and therefore it is appropriate to scope flood risk out of the ES.

### 5.2 Drainage

The drainage system serving the Facility has been constructed to a design that did not account for the latest advice on the impact of climate change, or the runoff from the Vehicle Turning Area at the northern end of the Site.

The analysis of the system has been re-run to consider both these issues and confirms that the attenuation storage provided by the existing system can cater for the additional runoff.

Whilst the drainage condition relating to drainage has not been discharged by the Council, there appears no impediment to them doing so.

The construction of the facility will have no significant drainage impacts and therefore it is appropriate to scope drainage out of the ES.

# DRAWINGS





NOTES

- 1. DO NOT SCALE FROM THIS DRAWING.
- 2. THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH ALL RELEVANT PROJECT STANDARDS AND SPECIFICATIONS.

LEGEND

- 01 RECEPTION BUILDING / FUEL STORAGE AND FEED BUILDING
- 02 MAIN PROCESS BUILDING
- 03 TURBINE AND WELFARE BUILDING
- 04 ACC STRUCTURE
- 05 FGT SLAB, VARIOUS EXTERNAL EQUIPMENT (INC CHIMNEY STACK) AND FLUE GAS CLEANING EQUIPMENT
- 06 ASH SILOS
- 07 FIRE WATER TANK AND PUMPHOUSE
- 08 EMERGENCY DIESEL GENERATOR AND DIESEL STORAGE TANK
- 09 WEIGHBRIDGE
- 10 AUXILIARY COOLERS
- 11 EXPORT TRANSFORMERS
- 12 VEHICLE TURNING AREA



Revision	By	CHK'd By	Date	Comments
0	CR	IW	04/22	

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Site: BARRY BIOMASS FACILITY

Project:

Drawing Title: **SITE LOCATION PLAN**

Scale: 1:400 @ A1 Date: APRIL 2022

Drawing Number: <b>BARRY-01-DWG-01-20000</b>	Revision: <b>0</b>
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## APPENDIX 01

### 2008 RSK Flood Risk Assessment



RSK Environment Ltd  
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Nash  
Newport  
NP18 2BZ

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[www.rsk.co.uk](http://www.rsk.co.uk)

Document  
SRB-J

30 June 2008

**Marco Muia**  
**Oaktree Environmental Ltd**

Our Ref: RSK/MA/P660003/01/01

Dear Marco,

### **RE: FLOOD RISK, BARRY SUNRISE CHP PLANT, BARRY DOCKS**

As a part of the planning application for the Barry site, RSK Environment Ltd has been commissioned to provide an assessment of flood risk. The following paragraphs explain the work undertaken.

The proposed development is located within Zone B but outside Zone C2, as identified by Technical Advice Note 15: Development & Flood Risk (July 2004) (TAN15). Zone B can be defined as “*areas known to have been flooded in the past evidenced by sedimentary deposits*” and Zone C2 as “*areas of floodplain without significant flood defence infrastructure*”. Any development within Zone C would require a full Flood Consequences Assessment (FCA).

The proposed development is also located outside the Environment Agency Wales (EAW) extreme (0.1%) Flood Map, which would normally underlay Zone B. Although a full FCA is not required, the EAW promote a precautionary approach where site levels should be compared against the adjacent extreme outline to determine if the site is at risk of flooding.

We therefore undertook a topographic survey of the site and produced three cross sections from north of the site through to the direction of the dock to confirm that the development is above the adjacent extreme flood outline and corresponding Zone C2. These are attached as Annex A. When flood level data was requested from the EAW, we were notified that the only available data was over 10 years old and not for the location requested. The data would have to be extrapolated from levels in Cardiff and Porthcawl.

This information was submitted via email to the EAW as a pre-planning enquiry on the 25 June 2008 (E-mail to EA attached as Annex B together with previous correspondence). In a subsequent conversation with Matthew Parry, Development Control Officer (and Acting Team Leader) of the EAW on the 26 June 2008, he confirmed that the site was not at risk of flooding and the cross sections were acceptable. A recent policy change within the EAW meant that applications in Zone B were taken on a risk-based approach and if the zone is outside the Q1000 Flood Map, then there is no perceived risk to the development.

A formal response from the Planning Liaison to the pre-planning enquiry is awaited, although Matthew has indicated that there is no objection to the proposed development from the information submitted.

I trust this information is sufficient for the purposes of the planning application and please do not hesitate to contact me should you have any further questions or queries.

We will submit the expected further correspondence from the EA to you when available.



INVESTOR IN PEOPLE

**RSK Environment Ltd**  
Registered office  
34 Albyn Place • Aberdeen • Aberdeenshire • AB10 1FW • UK  
Registered in Scotland No. 115530  
[www.rsk.co.uk](http://www.rsk.co.uk)



Yours Sincerely,

**Catherine Anderson MSc**  
Environmental Consultant  
RSK Environment Ltd  
Part of the **RSK** Group plc  
<mailto:canderson@rsk.co.uk>  
Direct Line: 01454 227575

Enc.

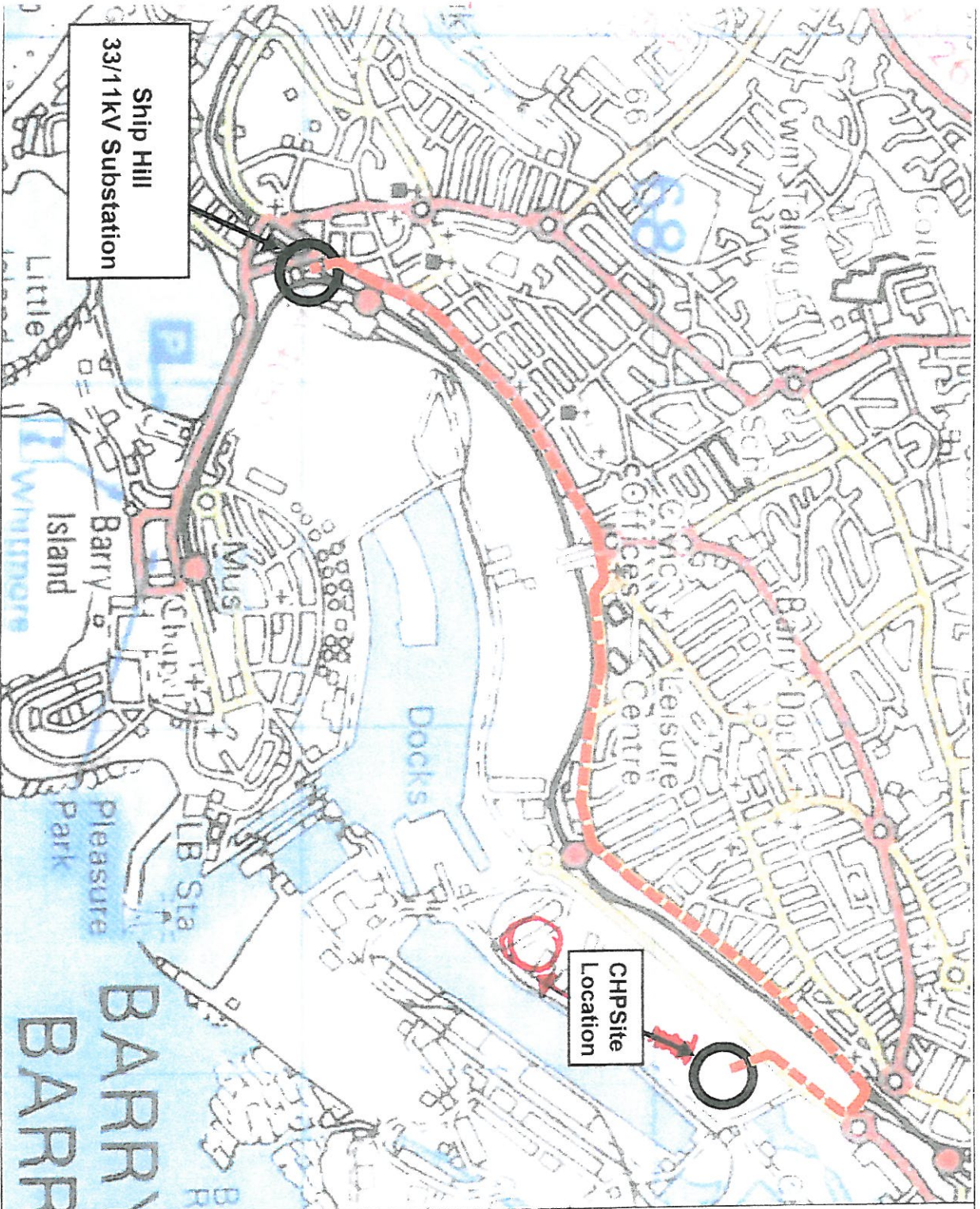
**Annex A:** Topographic Survey and Cross Sections

**Annex B:** EA Correspondence, including EAW Flood Data and Welsh Assembly Government Development Advice Map (DAM) of TAN15 zones



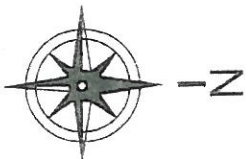
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516



**LEGEND:**

— UNDERGROUND CABLE ROUTE



Scale: not to scale

Drawn: J. Davies    Date: 09/01/08

Drawing No.: 2007-271107-03

Cell Site number: \*

Title:  
**PROPOSED  
CABLE ROUTE**

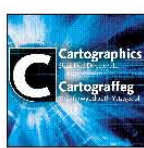
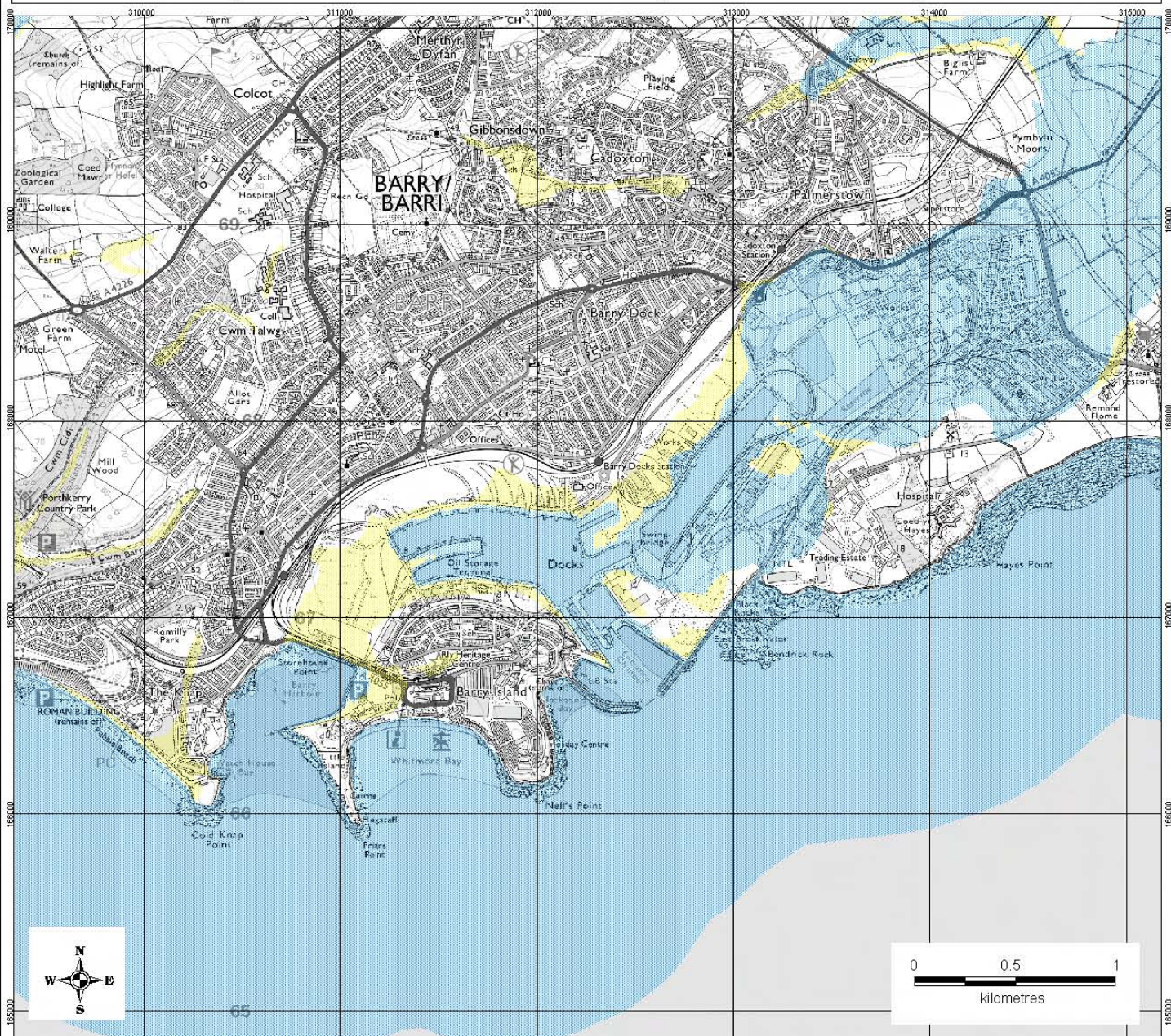
Site Name and Address  
**Barry  
South Wales**

**DNO  
CONSULTING  
LTD.**

2 Charlwood Court  
Newport Street  
Swindon  
tel 0870 770 7728



# TAN15 Development and Flood Risk: Development Advice Map ST16NW



- Zone A: Considered to be at little or no risk of fluvial or tidal/coastal flooding
  - Zone B: Areas known to have been flooded in the past
  - Zone C1: Served by significant infrastructure, including flood defences
  - Zone C2: Without significant flood defence infrastructure
- Zones C1 & C2 based on Environment Agency's Extreme Flood Outline ( $\geq 0.1\%$  - River, Tidal or Coastal)

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**Rob Domeney**

---

**From:** Catherine Anderson  
**Sent:** 24 June 2008 10:30  
**To:** Parry, Matthew; mike.walsh@environment-agency.gov.uk  
**Subject:** Barry Sunrise CHP Plant  
**Attachments:** EA response.pdf; P1580.dwg; P1580\_Sections.dwg; barry location.pdf; Barry\_ST16NW.jpg

Matthew/Mike

Please find attached the following:

- \* Location plan
- \* DAM map;
- \* Topographic survey and cross sections; and
- \* EAW flood level data.

The application is for a CHP plant in Barry Docks and from the DAM is located within a zone B. However from the EAW flood map there is no underlying Q200 or Q1000. In addition, a letter from Kayna we found on the planning register states that there has been no history of flooding to an adjacent development and the EAW had no objection to the development in relation to flood risk.

We have undertaken a topographic survey of the area which shows levels to be 7.83m AOD nearest the dock rising to 9.4m AOD to the north of the site. Looking at the EAW level data, it is stated that no levels are available for the Barry area, but extrapolating the levels from the Cardiff and Porthcawl data provided would put the Q200 at approximately 7.55m AOD and Q1000 at 7.85m AOD. However this data is now over 10 years old.

This is not an exact science and I would appreciate your view on this especially when other adjacent sites have been identified as being not at risk from flooding. The intention is to raise the site approximately 300-600m to make it more level with the north of the site anyway so would this be adequate mitigation for a site in zone B?

Your comments would be most beneficial to this project so that we can progress the site appraisal.

Kind Regards  
Catherine

**Catherine Anderson**  
**Environmental Consultant**

RSK Environment Ltd  
West Nash Road, Nash, Newport, NP18 2BZ.

A member of the **RSK Group plc**

Office: 01633 276051. Mobile: 07917 425260; email: [canderson@rsk.co.uk](mailto:canderson@rsk.co.uk)

<http://www.rsk.co.uk>

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04/07/2008

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creating a better place



Asiantaeth yr  
Amgylchedd Cymru  
Environment  
Agency Wales

Ms Katarzyna Nowak  
RSK Ltd  
18 Frogmore Road  
Hemel Hempstead  
Hertfordshire  
HP3 9RT

Ein cyf/Our ref: SAF12782

Eich cyf/Your ref: 080506CB027

Dyddiad/Date: 22<sup>nd</sup> May 2008

Dear Ms Nowak

**Re: Flood Risk and Drainage Assessment - Barry, Viaduct Road CF63 4AB**

Thank you for your enquiry with regards to obtaining flood level information for a site in Barry. Please find attached and below information that has been provided by our Flood Risk Mapping Team that should answer your enquiry in full.

The Flood Map consists of a combination of detailed localised flood risk mapping studies, supplemented with national generalised modelling. In the absence of any localised study for the area, the flood extents shown in **Figure 1** are from generalised modelling only. These have been derived from two components; a 3D ground level map of England and Wales (referred to as the Digital Terrain Map or 'DTM') and a 2D flow / tidal modelling component.

In **Figure 1**, the risk from flooding is predominantly tidal. These tidal extents have been produced using stillwater tide levels that are based upon Dixon, M.J. and Tawn, J.A. (1997) "Extreme Sea Levels at the UK A Class Sites: Optimal Site by Site Analyses and Spatial Analyses" - Proudman Oceanographic Laboratory, Internal Document No. 112. They do not take into account any wave action or climate change, and are based for the year 1997.

Tide levels are available for Cardiff (approx NGR ST 18030, 74612) and Porthcawl (approx NGR SS 78544, 79401). The predicted levels are as follows:

**CARDIFF**

0.5% (YEAR 1997) = 8.17mAOD

0.1% (YEAR 1997) = 8.40mAOD

**PORTHCAWL**

0.5% (YEAR 1997) = 7.03mAOD

0.1% (YEAR 1997) = 7.25mAOD

We are not aware of any historic flooding to the site.

I hope that this information is of use to you. Please feel free to contact me on 029 2024 5236 if you require further information.

Kindest Regards

Darren Jones  
External Relations Officer

Asiantaeth yr Amgylchedd Cymru  
Plas-yr-Afon, Parc Busnes Llanelirwg, Llanelirwg, Caerdydd,  
CF3 0EY  
Llinell gwasanaethau cwsmeriaid: 08708 506 506  
Ebost: [enquiries@environment-agency.gov.uk](mailto:enquiries@environment-agency.gov.uk)  
[www.asiantaeth-amgylchedd.cymru.gov.uk](http://www.asiantaeth-amgylchedd.cymru.gov.uk)

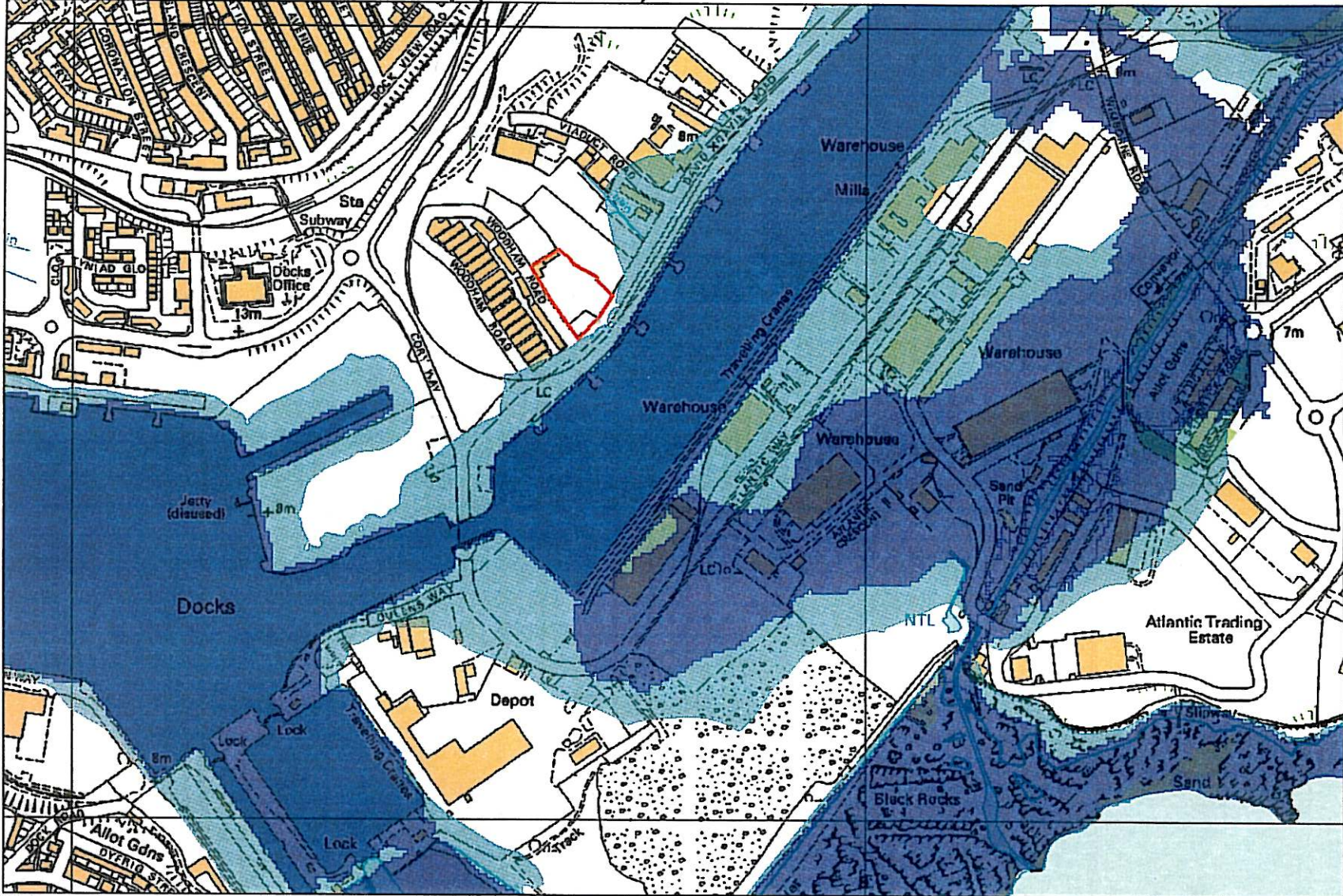
Environment Agency Wales  
Rivers House, St Mellons Business Park, St Mellons, Cardiff,  
CF3 0EY  
Customer services line: 08708 506 506  
Email: [enquiries@environment-agency.gov.uk](mailto:enquiries@environment-agency.gov.uk)  
[www.environment-agency.wales.gov.uk](http://www.environment-agency.wales.gov.uk)



BUDDSODDWR Mewn Pobl  
INVESTOR IN PEOPLE



**Figure 1: The Current Flood Map (version 3.8)**



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**Key:**

Dark Blue area : Flooding from rivers or sea without defences

Light Blue area : Extent of extreme flood

Red Boundary : Site of interest (as marked in pen on attached 'Streetmap' printout - dated 6<sup>th</sup> May 2008)





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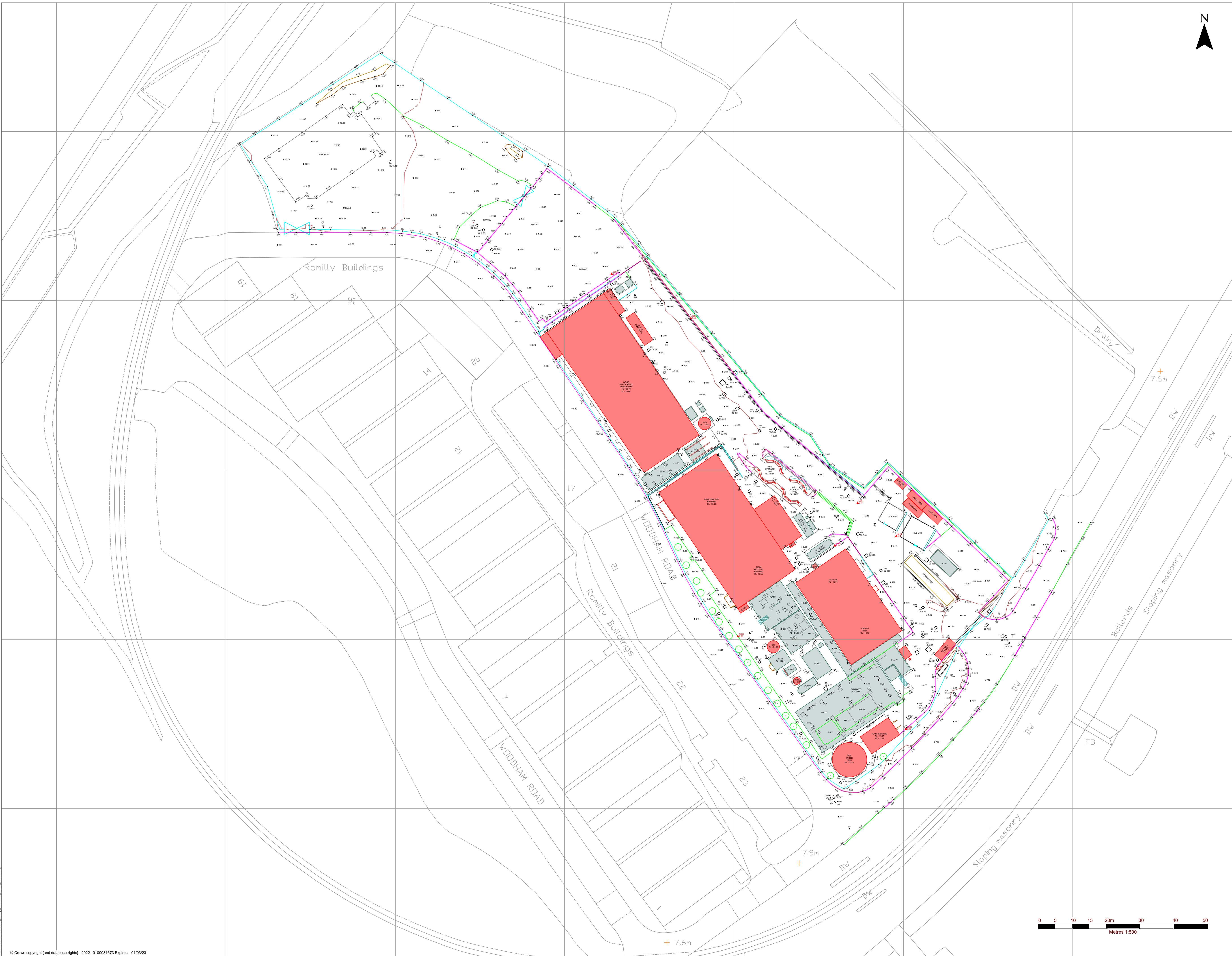
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## APPENDIX 02

### 2022 Topographic Survey





- NOTES**
1. SURVEY CARRIED OUT BY SLR CONSULTING LTD ON THE 1st-3rd MARCH 2022
  2. THIS PLAN IS ORIENTATED TO ORDNANCE SURVEY NATIONAL GRID AND NEWLYN DATUM DERIVED FROM ORDNANCE SURVEY ACTIVE NETWORK (OSTN15.OSGB36).
  3. THE TOPOGRAPHICAL SURVEY HAS NO ORDNANCE SURVEY LOCAL SCALE FACTOR APPLIED. THE ORIGIN OF THE SITE SURVEY GRID IS SLR1
  4. ALL FEATURES SHOWN WERE CURRENT AT THE TIME OF THE SURVEY. THERE MAY BE FEATURES MISSING DURING THE SURVEY DUE TO OBSTRUCTIONS OR LACK OF ACCESS.
  5. BOUNDARIES SHOWN ARE PHYSICAL FEATURES ON SITE AND DO NOT NECESSARILY REPRESENT THE LEGAL EXTENTS OF OWNERSHIP.
  6. THE ACCURACY OF THIS SURVEY IS COMMENSURATE WITH THE DRAWING SCALE SPECIFIED WITHIN THE TITLE BLOCK. ALL CRUCIAL DIMENSIONS SHOULD BE CHECKED ON SITE.
  7. OS DATA IS SHOWN IN GREY.

- LEGEND**
- BANK BOTTOM
  - BANK TOP
  - FENCE
  - EDGE OF VEGETATION
  - DROP KERB
  - KERB BOTTOM
  - KERB TOP
  - VERGE
  - WALL BOTTOM
  - WALL TOP
  - TREE
  - SPOT LEVEL
  - SURVEY CONTROL
  - BUILDING

**Abbreviations**  
(where applicable)

BB	Bolsha Beacon	MH	Manhole
BC	Building Canopy	MKR	Marker
BH	Borehole	PO	Post
BM	Bench Mark	PK	Parking Meter
BOV	Boundary	PIV	Pipe Invert
BOL	Bollard	RL	Ridge Level
BT	British Telecom Manhole	RNP	Road Name Plate
CCTV	Closed Circuit Television	RS	Sign Post
CTV	Cable Television Manhole	SC	Soft Level
CUL	Culvert	ST	Stop Tap
DK	Drop Kerb	ST	Stump (Tree)
DP	Drain Pipe	SV	Stop Valve
DPC	Damp Proof Course	SVP	Soil Vent Pipe
DWB	Dog Waste Bin	SW	Storm Water
EB	Electricity Box	SY	Stay (e.g. Pylon, T/P)
EL	Eaves Level	TAP	Tap
EP	Electricity Pole	TCS	Telephone Call Box
ER	Earthing Rod	TCL	Table
IFL	Internal Floor Level	THL	Threshold Level
INV	Invert	TL	Traffic Light
FE	Fire Point	TW	Top of Wall
GB	Gas Box	TP	Telegraph Pole
GV	Gas Valve	TPT	Trail Pit
GP	Gate Post	UB	Under Beam
G	Gully	UTL	Unable To LR
PH	Hydrant	VP	Vent Pipe
IC	Inspection Chamber	WSL	Window Sill Level
IT	Intercom	WHL	Window Head Level
KD	Kerb Duct	WL	Water Level
LB	Life Buoy	WM	Water Meter
LP	Lamp Post		

**SURVEY CONTROL**

STATION	DESCRIPTION	EASTING	NORTHING	HEIGHT
SLR1	PK NAIL	312636.518	167690.278	8.414
SLR2	PK NAIL	312587.227	167744.857	8.996
SLR3	PK NAIL	312563.892	167757.903	9.160
SLR4	PK NAIL	312550.746	167823.531	8.430
SLR5	PK NAIL	312559.790	167641.343	8.189
SLR6	PK NAIL	312647.911	167680.417	8.152
SLR7	PK NAIL	312629.768	167677.672	8.738
SLR8	PK NAIL	312601.147	167650.907	8.682

Revision	By	CHK'd By	Date	Comments
0	NS	AS	03/22	TOPOGRAPHIC SURVEY

**SLR** CONSULTING LTD  
 7 WORNAL PARK  
 MENMARSH ROAD  
 WORMINGHALL, AYLESBURY  
 BEDFORDSHIRE, MK45 1JH  
 T: 01844 337380  
 F: 01844 337381  
 www.slrconsulting.com

Site: **BARRY BIOMASS**

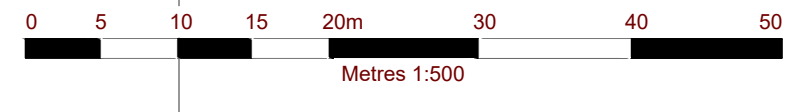
Project: **SITE SURVEY**

Drawing Title: **TOPOGRAPHIC SURVEY  
1st MARCH 2022**

Scale: 1:500 @ A1 Date: MARCH 2022

Drawing Number: **001** Revision: **0**

**OVERVIEW**





## APPENDIX 03


### Extract of the Flood Map for Planning


**Flood Map for Planning**  
**Barry Biomass**

Legend

Sea

Sea

 Flood Zone 3 Flood Zone 3

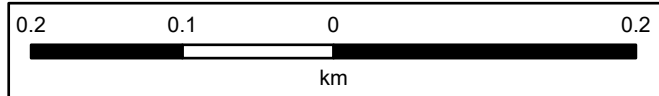
 Flood Zone 2 Flood Zone 2



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Scale: 1:5,000

Date: 22/03/2022



British National Grid

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## APPENDIX 04

### Planning permission 2015/00031/OUT

**THE VALE OF GLAMORGAN COUNCIL**

Town and Country Planning Act 1990  
Planning and Compulsory Purchase Act 2004  
The Town and Country Planning (Development Management Procedure) (Wales)  
Order 2012

**OUTLINE PLANNING PERMISSION**

Agent:  
Sunrise Renewables (Barry) Ltd,  
Gilbert Wakefield House,  
Bewsey Street,  
Warrington  
WA2 7JQ

Applicant:  
Sunrise Renewables (Barry) Ltd,  
Gilbert Wakefield House,  
Bewsey Street,  
Warrington  
WA2 7JQ

**Outline application for a wood fired renewable energy plant at David Davies Road, Woodham Road, Barry**

The Council in pursuance of its powers under the above mentioned Act and Order hereby **GRANTS OUTLINE PERMISSION** for the carrying out of the proposed development as described above and in accordance with the application and plans registered by the Council on 5 February 2015 subject to the following condition(s):

1. Approval of the landscaping of the development (hereinafter called `the reserved matters`) shall be submitted to and approved by the Local Planning Authority before any development is commenced.

Reason:

To comply with the requirements of Section 92 of the Town and Country Planning Act 1990.

2. Application for approval of the reserved matters hereinbefore referred to must be made not later than the expiration of three years beginning with the date of this permission.

Reason:

To comply with the requirements of Section 92 of the Town and Country Planning Act 1990.

3. Plans and particulars of the reserved matters referred to in condition 1 above shall be submitted in writing to the Local Planning Authority and shall be carried out as approved.

Reason:

The application was made for outline planning permission and to comply with the requirements of Section 92 of the Town and Country Planning Act 1990.

4. The development to which this permission relates must be begun not later than whichever is the later of the following dates:
  - (a) The expiration of five years from the date of this permission.
  - (b) The expiration of two years from the date of the final approval of the reserved matters or, in the case of approval on different dates the final approval of the last such matters to be approved.

Reason:

To comply with the requirements of Section 92 of the Town and Country Planning Act 1990.

5. This consent shall relate to the plans registered on 5 February 2015 other than where amended by plans reference E1627- 2101 Rev A, E1627- 2102 Rev A, E1627- 2103 Rev A, E1627- 2104 Rev A, E1627- 2105 Rev A, dated 16 April 2015 and E1627- 2116 Rev B, E1627- 2117 Rev B, E1627- 2118 Rev B, E1627- 2119 Rev B, E1627- 2120 Rev B received on 22 July 2015 as well as the updated Air Quality Assessment submitted on 12 June 2015 and the Waste Planning Assessment received on 17 June 2015.

Reason:

To ensure a satisfactory form of development and for the avoidance of doubt as to the approved plans.

6. No development shall take place until details of a scheme for the management of fly ash and bottom ash waste emanating from the site has been submitted to and approved in writing by the Local Planning Authority. The disposal of waste shall be carried in accordance with the approved scheme.

Reason:

In order to ensure the disposal of waste from the site without harm to local amenity, and to ensure compliance with Policies WAST2, EMP2, EMP3, ENV27 and ENV29 of the Unitary Development Plan.

7. No development shall take place until full details, inc samples of the external facing materials to be used in the development, to include colour of the building and stack and shall be submitted to and approved in writing by the Local Planning Authority and the development shall thereafter be carried out and retained in accordance with the approved details, unless otherwise approved in writing by the Local Planning Authority.

Reason:

In the interests of local visual and residential amenity, and to ensure compliance with Policies WAST2, EMP2, EMP3, ENV27 and ENV29 of the Unitary Development Plan.

8. No development approved by this permission shall be commenced until a contaminated land assessment and associated remedial strategy have been submitted to and approved by the Local Planning Authority. The assessment shall contain the following elements and follow the guidance contained in 'Contaminated Land: A Guide for Developers' available from the Local Planning Authority:
  - a) A Phase I Preliminary Risk Assessment (Desk Study) to be submitted to the Local Planning Authority for approval. The desk study shall detail the history of the site uses and identify and evaluate all potential sources and impacts of land and/or groundwater contamination.
  - b) Where the preliminary risk assessment identifies potentially unacceptable risks at the site, a suitably qualified and accredited person shall carry out a site investigation, including relevant soil, soil-gas, surface and groundwater sampling in accordance with a quality assured sampling and analysis methodology. The requirements of the Local Planning Authority shall be fully established before any site surveys are commenced.
  - c) A site investigation report detailing all investigative works and sampling on site, together with the results of any analysis, risk assessment to any receptors and a proposed remediation strategy shall be submitted to the Local Planning Authority. The Local Planning Authority shall approve any such remedial works as required, prior to any remediation commencing on site. The works shall be of such a nature as to render harmless the identified contamination given the proposed end-use of the site and surrounding environment including any controlled waters.

- d) The approved remediation works shall be carried out in full on site under a quality assurance scheme to demonstrate compliance with the proposed methodology and best practice guidance. If during the works contamination is encountered which has not previously been identified then the additional contamination shall be fully assessed and an appropriate remediation scheme agreed with the Local Planning Authority.
- e) Upon completion of the works, this condition shall not be discharged until a verification report has been submitted to and approved by the Local Planning Authority. The verification report shall include details of the completed remediation works and include quality assurance certificates to show that the works have been carried out in full and in accordance with the approved methodology. Details of any post-remedial sampling and analysis to show the site has reached the required clean-up criteria shall be included in the verification report together with the necessary documentation detailing what waste materials have been removed from the site.

Reason:

In the interests of public safety, and to ensure compliance with Policy ENV7 of the Unitary Development Plan.

- 9. Should contamination not previously identified be found through the course of development it must be reported immediately in writing to the Local Planning Authority. An investigation shall be carried out to assess the nature and extent of any contamination and the contamination shall be dealt with in accordance with a scheme to be submitted to and approved in writing by the Local Planning Authority before the building hereby permitted is occupied.

Reason:

In the interests of public safety, and to ensure compliance with Policy ENV7 of the Unitary Development Plan.

- 10. All means of enclosure associated with the development hereby approved shall be in accordance with a scheme to be submitted to and agreed in writing by the Local Planning Authority prior to the commencement of development, and the means of enclosure shall be implemented in accordance with the approved details prior to the development being put into beneficial use.

Reason:

To safeguard local visual amenities, and to ensure compliance with the terms of Policy ENV27 of the Unitary Development Plan.



11. Prior to the facility being brought into beneficial use, details of a scheme to control dust within the site and locality shall be submitted to and approved in writing by the Local Planning Authority. The operation of the plant shall thereafter be in accordance with the approved details unless otherwise approved in writing by the Local Planning Authority.

Reason:

In the interests of local amenity, and to ensure compliance with the terms of Policy ENV27 of the Unitary Development Plan.

12. Prior to their construction / installation / use on site, details of all external lighting of the building and site, to include specification, means of operation (whether permanent or sensor/security lights, and hours of operation), and lux plots to prevent / minimise light spillage outside of the site (including atmospheric light pollution) shall be submitted to and approved in writing by the Local Planning Authority. All lighting shall be implemented in accordance with such approved scheme and thereafter retained as approved, unless otherwise approved in writing by the Local Planning Authority.

Reason:

In the interests of residential and visual amenity, and to ensure compliance with Policies WAST2, EMP2, EMP3, ENV27 and ENV29 of the Unitary Development Plan.

13. The building hereby permitted shall not be occupied until surface water drainage works have been implemented in accordance with details that have been submitted to and approved in writing by the Local Planning Authority. Before these details are submitted an assessment shall be carried out of the potential for disposing of surface water by means of a sustainable drainage system and the results of the assessment provided to the Local Planning Authority. Where a sustainable drainage scheme is to be provided, the submitted details shall:

- i) provide information about the design storm period and intensity, the method employed to delay and control the surface water discharged from the site and the measures taken to prevent pollution of the receiving groundwater and/or surface waters;
- ii) include a timetable for its implementation; and provide a management and maintenance plan for the lifetime of the development which shall include the arrangements for adoption by any public authority or statutory undertaker and any other arrangements to secure the operation of the scheme throughout its lifetime.

Reason:

To ensure that the development is serviced by an appropriate Sustainable Urban Drainage Scheme, and to ensure compliance with the terms of Policies ENV7 and ENV27 of the Unitary Development Plan.

14. The building hereby permitted shall not be occupied until the sustainable drainage scheme for the site has been completed in accordance with the submitted details. The sustainable drainage scheme shall be managed and maintained thereafter in accordance with the agreed management and maintenance plan.

Reason:

To ensure that the development is serviced by an appropriate Sustainable Urban Drainage Scheme, and to ensure compliance with the terms of Policies ENV7 and ENV27 of the Unitary Development Plan.

15. All planting, seeding or turfing comprised in the approved details of landscaping shall be carried out in the first planting and seeding seasons following the occupation of the buildings or the completion of the development, whichever is the sooner; and any trees or plants which within a period of five years from the completion of the development die, are removed or become seriously damaged or diseased shall be replaced in the next planting season with others of similar size and species, unless the Local Planning Authority gives written consent to any variation.

Reason:

To ensure satisfactory maintenance of the landscaped area to ensure compliance with Policies ENV11 and ENV27 of the Unitary Development Plan.

16. The access and visibility splays (4.5m x 48m ) to the site are approved in accordance with the amended site layout plan draw ref E1627-2104 Rev A received on 16 April 2015 and shall be constructed from a bound material for a minimum distance of 20.0m from the carriageway boundary. The development should be carried out in accordance with these details unless otherwise agreed in writing by the Local Planning Authority.

Reason

In the interest of Highway Safety and in accordance with WAST2, COMM8 of the Unitary Development Plan.

17. Notwithstanding the approved access and site layout plan, an amended plan with full details of the means of enclosure to the front boundary with Woodham Road, and forecourt area, shall be submitted to satisfy the following highway requirements: -
- i) The boundary fence shall be set back a minimum of 4.0m from the carriageway edge to allow for adequate visibility splays from the proposed access and to maintain visibility from the existing Woodham Road junction.
  - ii) Visibility splays of 4.5m x 48m in both directions, measured from the centre line of the proposed access shall be provided.
  - iii) Provision of a hard surface of concrete or bituminous material for a minimum distance of 6.0m from the highway boundary.
  - v) A manoeuvring area, to enable all vehicles to enter and leave in a forward gear at all times, which shall be kept free of obstruction at all times.
  - vi) Gates, if provided, that shall not open outwards and shall be set back a minimum of 6.0m from the carriageway edge.

The development shall be undertaken and thereafter retained in full accordance with such approved details unless otherwise approved in writing by the Local Planning Authority.

Reason:

In the interests of highway safety, and to ensure compliance with the terms of Policy ENV27 of the Unitary Development Plan.

Reasons

In the interests of highway safety

18. The proposed energy recovery plant shall not be brought into beneficial use until the approved access has been constructed in accordance with the approved plans and the access shall thereafter be so retained to serve the development hereby approved.

Reason:

In the interest of highway safety and to ensure a satisfactory form of access to serve the development, and to ensure compliance with the terms of Policy ENV27 of the Unitary Development Plan.

19. No part of the development hereby approved shall be brought into beneficial use until such time as the parking areas, including all associated access and turning areas, have been laid out in full accordance with the details to be submitted and approved by the Local Planning Authority and the parking, access and turning areas shall thereafter be so retained at all times to serve the development hereby approved.

Reason:

To ensure the provision on site of parking and turning facilities to serve the development in the interests of highway safety, and to ensure compliance with the terms of Policy ENV27 of the Unitary Development Plan.

20. Details of secure parking on site for cycles shall be submitted to and approved in writing by the Local Planning Authority and the approved scheme of cycle parking shall be fully implemented on site prior to the first beneficial occupation of the development hereby approved and shall thereafter be so retained at all times.

Reason:

To ensure that satisfactory parking for cycles is provided on site to serve the development, and to ensure compliance with the terms of Policy ENV27 of the Unitary Development Plan.

21. A noise survey post installation at the nearest residential premises, 57 Dock View Road, Cory Way and Estrella House, Cei Dafydd, shall be undertaken when the plant is initially commissioned and again after six months. The noise survey is to be provided in the same format as in the developer's submitted noise statement. The results of the first noise assessments shall be submitted to the Local Planning Authority, within two months of the date of commissioning the plant and, should either of the surveys indicate that the noise levels exceed those stated in the application documents, the use of the plant shall cease until such time as a scheme of noise mitigation has been submitted to and approved in writing by the Local Planning Authority, and those measures implemented. The development shall at all times be carried out in accordance with any mitigation measures that are identified as being necessary.

Reason:

In the interests of residential amenity and to ensure compliance with Policies ENV27 and COMM7 of the Unitary Development Plan.

22. The total tonnage of wood waste treated at the plant hereby approved shall not exceed 72,000 dry tonnes per annum, unless otherwise agreed in writing with the Local Planning Authority beforehand, and records of the amount of fuel processed shall be retained and made available to the Local Planning Authority on request.

Reason:

To ensure accordance with the terms of the application, to limit the impact of activities on the immediate area, and to ensure compliance with Policies WAST2, EMP2, EMP3, ENV27 and ENV29 of the Unitary Development Plan.

23. The plant hereby permitted shall only process waste wood.

Reason:

In the interests of local amenity, given that the technical equipment is capable of processing alternative fuels, the impact of which has not been considered through the environmental submission accompanying this application, and to ensure compliance with Policies WAST2, EMP2, EMP3, ENV27 and ENV29 of the Unitary Development Plan.

24. Deliveries to the site, and all other external operations, shall be restricted to the following hours: - Monday to Saturday : 07:00 - 19:00; and Sunday /Bank/Public holidays 08:00 - 16:00.

Reason:

In the interests of local residential amenity, and to ensure compliance with Policies WAST2, EMP2, EMP3, ENV27 and ENV29 of the Unitary Development Plan.

25. The internal plant noise shall be restricted to a maximum of 85 dBA to include a 5 dBA tonal penalty (with every opportunity to reduce this level explored and demonstrated prior to final construction) and a noise survey, post installation, shall be undertaken when the plant is initially commissioned and again after six months. The noise survey is to be provided in the same format as in the developer's submitted noise statement. The results of the first noise assessments shall be submitted to the Local Planning Authority, within two months of the date of commissioning the plant and, should either of the surveys indicate that the noise levels exceed those stated in the application documents, the use of the plant shall cease until such time as a scheme of noise mitigation has been submitted to and approved in writing by the Local Planning Authority, and those measures implemented. The development shall at all times be carried out in accordance with any mitigation measures that are identified as being necessary.

Reason:

In the interests of local residential amenity, and to ensure compliance with Policies ENV27 and COMM7 of the Unitary Development Plan.

26. There shall be no open storage of materials of any kind outside any approved buildings on the site unless otherwise agreed in writing by the Local Planning Authority.

Reason:

In the interests of local visual amenity, and to ensure compliance with the terms of Policy ENV27 of the Unitary Development Plan.

27. Foul water and surface water discharges shall be drained separately from the site, with no surface water or land drainage run-off allowed to connect (either directly or indirectly) into the public sewerage system.

Reason:

To protect the integrity, and prevent hydraulic overloading, of the Public Sewerage System, and to ensure compliance with the terms of Policy ENV27 of the Unitary Development Plan.

28. No Development shall take place until there has been submitted to, approved in writing by the Local Planning Authority a Construction Environmental Management Plan (CEMP). The CEMP shall include details of how noise, lighting, dust and other airborne pollutants, vibration, smoke, and odour from construction work will be controlled and mitigated. The CEMP will utilise the Considerate Constructors Scheme ([www.considerateconstructorsscheme.org.uk](http://www.considerateconstructorsscheme.org.uk)). The CEMP will include a system for the management of complaints from local residents which will incorporate a reporting system. The construction of the Development shall be completed in accordance with the approved Plan unless otherwise agreed in writing with the Local Planning Authority.

Reason:

To ensure that the construction of the development is undertaken in a neighbourly manner and in the interests of the protection of amenity and the environment and to ensure compliance with the terms of Policy ENV27 of the Unitary Development Plan.

29. Prior to the first beneficial use of the development hereby approved, a Green Travel Plan (which will include details relating to proposals for minimising the use of staff car journeys to and from the site) and measure to control the plan along with agreed haul routes for the delivery of waste wood feed stock and the removal of ash from the site shall be submitted to and agreed in writing by the Local Planning Authority and the development shall be operated in accordance with the agreed details.

Reason:

In the interest of minimising vehicular movements and sustainability in compliance with Policy ENV27 'Design of New Developments' of the Unitary Development Plan.

30. The roller shutter doors in the feedstock building shall be kept closed at all times other than when deliveries are being received.

Reason:

To protect residential amenity, complying with the requirements of ENV27 and COMM 8 of the Adopted UDP 1996-2011

31. Within nine months of the energy plant hereby approved being fully operational, the applicant shall carry out a further Air Quality Assessment through monitoring at the nearest residential property locations, 57 Dock View Road, Cory Way and Estrella House, Cei Dafydd . The new assessment should be completed and submitted to the Local Planning Authority within 3 months of being commenced and, should the assessment indicate that the air quality levels fail to comply with predicted process concentrations as set out in the updated Air Quality Assessment document submitted on 12 June 2015, the use of the plant shall cease until such time as a scheme of mitigation has been submitted to and approved in writing by the Local Planning Authority, and those measures identified in the scheme, implemented. The development shall at all times be carried out in accordance with any mitigation measures that are identified as being necessary.

Reason:

In the interests of residential amenity and to ensure compliance with Policies ENV27 and COMM7 of the Unitary Development Plan.

#### Reason for Granting Planning Permission

The decision to recommend planning permission has been taken in accordance with Section 38 of The Planning and Compulsory Purchase Act 2004, which requires that, in determining a planning application the determination must be in accordance with the Development Plan unless material considerations indicate otherwise. The Development Plan comprises the Vale of Glamorgan Adopted Unitary Development Plan 1996-2011.

Having regard to National and Regional Policies on Waste and Renewable Energy, and Policies 13, WAST1 – Provision of Waste Management Facilities, WAST2 – Criteria for Assessing Waste Management Facilities, COMM8 – Other Renewable Energy Scheme, ENV6 – East Vale Coast, ENV7 – Water Resources, ENV16 – Protected Species, ENV18 – Archaeological Field Evaluation, ENV26 – Contaminated Land and Unstable Land, ENV27 – Design of New Developments, ENV29 – Protection of Environmental Quality, EMP2 – New Business and Industrial Development, EMP3 – General Industry, TRAN10 - Parking and TRAN11 – Road Freight of the Vale of Glamorgan Adopted Unitary Development Plan 1996-2011, it is concluded that the proposal would represent a sustainable, renewable energy proposal, which meets the above policies, while also satisfactorily protecting the interests of local residential and visual amenity, and highway safety, while not compromising other material considerations detailed in the accompanying report.

**NOTE:**

**Please note that this consent is specific to the plans and particulars approved as part of the application. Any departure from the approved plans will constitute unauthorised development and may be liable to enforcement action. You (or any subsequent developer) should advise the Council of any actual or proposed variations from the approved plans immediately so that you can be advised how to best resolve the matter.**

**In addition, any conditions that the Council has imposed on this consent will be listed above and should be read carefully. It is your (or any subsequent developers) responsibility to ensure that the terms of all conditions are met in full at the appropriate time (as outlined in the specific condition).**

**The commencement of development without firstly meeting in full the terms of any conditions that require the submission of details prior to the commencement of development will constitute unauthorised development. This will necessitate the submission of a further application to retain the unauthorised development and may render you liable to formal enforcement action.**



**Failure on the part of the developer to observe the requirements of any other conditions could result in the Council pursuing formal enforcement action in the form of a Breach of Condition Notice.**

Dated: 31 July 2015



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Director of Development Services

**IT IS IMPORTANT THAT YOU SHOULD READ THE NOTES  
ATTACHED TO THIS FORM.**

NOTES

Notification to be sent to an applicant when a Local Planning Authority refuse planning permission or grant it subject to conditions.

Appeals to the Welsh Government:

- If you are aggrieved by the decision of the Local Planning Authority to refuse permission for the proposed development or to grant it subject to conditions, then you can appeal to the Welsh Government under Section 78 of the Town and Country Planning Act 1990 (as amended).
- If you want to appeal, then you must do so within six months of the date of this notice, using a form which you can get from The Planning Inspectorate, Crown Buildings, Cathays Park, Cardiff CF10 3NQ.
- The Welsh Government can allow a longer period of an appeal, but will not normally be prepared to use this power unless there are special circumstances which excuse the delay in giving notice of appeal.
- The Welsh Government need not consider an appeal if it seems that the Local Planning Authority could not have granted planning permission for the proposed development or could not have granted it without the conditions they imposed, having regard to the statutory requirements, to the provisions of any Development Order and to any directions given under a Development Order.
- In practice, the Welsh Government does not refuse to consider appeals solely because the Local Planning Authority based their decision on a direction given by them.

Purchase Notices:

- If either the Local Planning Authority or the Welsh Government refuses permission to develop land or grants it subject to conditions, the owner may claim that he/she can neither put the land to a reasonable beneficial use in its existing state nor render the land capable of a reasonably beneficial use by the carrying out of any development which has been or would be permitted.
- In these circumstances, the owner may serve a Purchase Notice on the Council. This notice will require the Council to purchase his/her interest in the land in accordance with the provisions of Part VI of the Town and Country Planning Act 1990 (as amended).

PLEASE NOTE: THIS NOTICE RELATES ONLY TO A PLANNING DECISION AND DOES NOT RELATE TO OTHER LEGISLATION INCLUDING ANY LEGISLATION UNDER:

BUILDING REGULATIONS  
LISTED BUILDING LEGISLATION  
HIGHWAY LEGISLATION

IF PLANNING CONSENT HAS BEEN GRANTED IT IS ADVISABLE TO ESTABLISH WHETHER ANY OTHER FORM OF CONSENT IS REQUIRED AND TO OBTAIN SUCH CONSENT BEFORE COMMENCING DEVELOPMENT

**Please quote the application number in all correspondence.**

## APPENDIX 05

### Correspondence relating to the discharge of Condition 13

Lambert, Fiona

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**From:** Robinson, Ian  
**Sent:** 03 December 2020 14:40  
**To:** Phillips, Kyle W; Rees, Nigel; Thelwell-Davies, Gareth  
**Subject:** FW: 2015/00031/5/CD Discharge of Conditions Application  
**Attachments:** 20201122 Barry\_GTP\_RF\_V1.pdf; 20200820\_BARRY\_SK01\_A.pdf; 20200819\_BARRY\_SK02.pdf; BARRY\_01\_DWG\_15\_21110\_D.pdf; BARRY\_01\_DWG\_15\_21111\_C.pdf

All- attached are amended details to address previous issues/feedback on conditions for the Biomass site in Barry-2015/00031/5/CD

Please could I have your feedback as soon as possible- thanks

**Kyle**- please see amended green travel plan- condition 29

**Gareth** please see attached foul rising main plans- condition 13.

**Nigel** please see tracking plans for condition 19.

Thanks

Ian

Ian Robinson  
Principal Planner / Prif Gynllunydd Ceisiadau  
Regeneration and Planning / Adfywio a Chynllunio  
Vale of Glamorgan Council / Cyngor Bro Morgannwg  
tel / ffôn: 01446 704777  
e-mail / e-bost: [IRobinson@valeofglamorgan.gov.uk](mailto:IRobinson@valeofglamorgan.gov.uk)

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**From:** Steve Butler <steve.butler@sol-environment.co.uk>  
**Sent:** 23 November 2020 15:14  
**To:** Robinson, Ian <IRobinson@valeofglamorgan.gov.uk>  
**Subject:** 2015/00031/5/CD Discharge of Conditions Application

Ian,

Many thanks for a productive and useful call last week.

We are now in a position to provide all outstanding information relating to the Discharge of outstanding planning conditions relating to 2015/00031/5/CD

Please find below a summary for all of the outstanding conditions, as discussed and agreed in our call.

- Cond 5 – Approved Plans: Confirmation provided by VoG that no details are required to be submitted or approved
- Cond 11 – Dust: Confirmation by VoG provided stating that the EHO has confirmed that condition has been satisfied
- Cond 12 – Lighting: Confirmation by VoG provided stating that EHO has confirmed that condition has been satisfied
- Cond 13 – Drainage Plan – There is an outstanding Drainage Plan required that shows the offsite connection location to the mains sewer. These plans are attached to this email (BARRY\_01\_DWG\_15\_21111\_C&D), please can you review and confirm

- Cond 14 – Drainage Plan – VoG confirmed that no approval needed to discharge this condition
- Cond 15 – 16: Landscape – VoG confirmed that no approval needed to discharge this condition
- Cond 17: Site Entrance – VoG confirmed that the conditions relating to the site entrance have been met and condition can be discharged
- Cond 19: Parking – VoG confirmed that a swept path diagram is needed that demonstrates that HGV's can manoeuvre on site without needing access between the reception and gasification building. The two swept path diagrams corresponding to each of the are attached (202008020\_BARRY\_SK01&02) to this email. These figures clearly show that the HGV's are not required to use the space between the two buildings. Please can you review and confirm
- Cond 20: Bike Rack – VoG confirmed that condition can be discharged
- Cond 21: Noise – VoG confirmed that submitted report meets with requirements of the condition.
- Cond 29: Travel Plan – VoG confirmed that a Revised Green Travel Plan is required to be submitted. This Green Travel Plan is attached (ref: 20201122 Barry\_GTP\_RF\_V1) and is now considered to meet with the Condition, please can you review and confirm

I have therefore attached the outstanding documents necessary for you to discharge your conditions.

All the best,

Steve

**Steve Butler | Sol Environment**

Malvern | Bristol | Edinburgh

t: 01684 572727 (Malvern) 01179 372 811 (Bristol)

m: 07540 473170

e: [steve.butler@sol-environment.co.uk](mailto:steve.butler@sol-environment.co.uk) W: [www.sol-environment.co.uk](http://www.sol-environment.co.uk)

#### ....Consulting Sustainability

The contents of this email are confidential and must not be read, copied or disclosed or used by any person other than the above-named addressee without permission. If you have received this message in error, please contact us immediately and delete the e-mail from your system.

\* Before printing this email, think about the environment. You'll only throw it away in the end anyway!

Due to the Coronavirus situation, from 19<sup>th</sup> March 2020, Sol's main office in Bristol will be closed. The Malvern office is still operating as normal and we will be carrying on our business, working remotely from home to observe the Government's guidance. You can contact us as normal by email or mobile. Meetings will continue remotely via Microsoft Teams (or other platforms as required). We will continue to monitor and observe Government guidance. From the whole team, keep well and stay safe. <http://www.sol-environment.co.uk/covid-19.html>

# MEMORANDUM / COFNOD

The Vale of Glamorgan Council  
The Alps, Wenvoe, CF5 6AA



To / I:	Ian Robinson
Dept / Adran:	Planning
Date / Dyddiad:	09/10/2020
Your Ref / Eich:	
Cyf:	

From / Oddi	Operational Manager Environment and Engineering
Wrth:	
My Ref / Cyf:	EE/SP/GTD/L5/1
Tel / Ffôn:	029 20673235
Fax / Ffacs:	029 20673114

Subject / Testyn: **Planning Application No. 2015/00031/5/CD Barry Biomass Energy Centre, Barry Docks, Woodham Road, Barry.**

Proposal: **Conditions 5, 11, 12, 13, 14, 15, 16, 17, 19, 20, 21, 25 & 29 of Planning Application 2015/00031/OUT: Outline application for a wood fired renewable energy plant**

**Condition 13:** *The building hereby permitted shall not be occupied until surface water drainage works have been implemented in accordance with details that have been submitted to and approved in writing by the Local Planning Authority. Before these details are submitted an assessment shall be carried out of the potential for disposing of surface water by means of a sustainable drainage system and the results of the assessment provided to the Local Planning Authority. Where a sustainable drainage scheme is to be provided, the submitted details shall:*

- i) provide information about the design storm period and intensity, the method employed to delay and control the surface water discharged from the site and the measures taken to prevent pollution of the receiving groundwater and/or surface waters;*
- ii) include a timetable for its implementation; and provide a management and maintenance plan for the lifetime of the development which shall include the arrangements for adoption by any public authority or statutory undertaker and any other arrangements to secure the operation of the scheme throughout its lifetime.*

**Condition 14:** *The building hereby permitted shall not be occupied until the sustainable drainage scheme for the site has been completed in accordance with the submitted details. The sustainable drainage scheme shall be managed and maintained thereafter in accordance with the agreed management and maintenance plan.*

The following details have been submitted in order to discharge conditions:

- Letter Report and associated appendices (Ref:LSOL2003PCML\_Barry Condition Discharge)

Information submitted in support of this application indicates that surface waters will be attenuated on site prior to discharge. Runoff from roof areas will drain directly to an attenuation tank situated to the north of the site, whilst surface water runoff from hardstanding areas will drain to the attenuation tank via an interceptor. Prior to discharge surface water will be pumped to the south of the site before discharge off site at an attenuated rate.

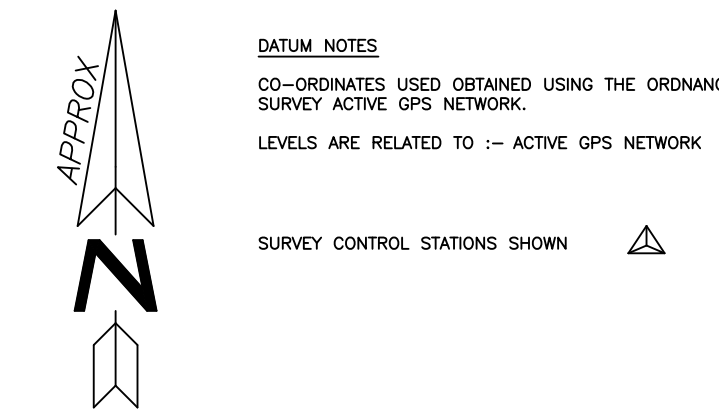
From the as-built drawing (N9334/1) of the drainage system submitted no indication of the discharge point into the existing sewer has been provided. It is requested that further evidence is provided that identifies the connection made by the discharge line into the existing sewer.

Given the above this section objects to the discharge of relevant drainage conditions until further details have been provided considering our comments above.

Gareth Thelwell-Davies  
Engineer – Environment

for Operational Manager Environment and Engineering  
ar gyfer Rheolwr Gweithredol Amgylchedd a Pheirianneg





**UNDERGROUND SERVICES**

- 1) Although every effort has been made to trace underground services using radio-detection no guarantee can be given that all have been found. Due to their non-conductivity certain types of gas and water pipes have not been possible to trace. Service trial holes must be dug prior to excavation.
- 2) This survey has been carried out in accordance with the RICS specification for tracing underground utilities at scales of 1:500 and larger.
- 3) In the absence of evidence to the contrary the routes of confirmed manhole connections are assumed to be direct and straight.
- 4) Small gully's and downpipes that go straight into the ground could not be traced due to restrictive access.

--- Underground Foul Drainage  
--- Underground Storm Drainage

ABBREVIATIONS (where applicable)

AV	Air Valve	MC	Marker
BE	Block	MG	Masthead
BL	Balloon	MT	Meter
BS	Bus Stop	MR	Manurey
BT	British Telecom	DM	Overhead
C/B	Cable Box	FM	Flag
CL	Cover Level	FB	Post Box
CLK	Chalk	FE	Face
CO	Column	FM	Parking Meter
CON	Concrete	FR	Post and Rail
CP	Catch Pit	FT	Foot
CPS	Cable Paving Slabs	F/W	Post and Wire
CV	Cable Television	RE	Rodding Eye
CS	Cable Sheath	REB	Rebar
CU	Cable Tray	REI	Road Sign
DP	Drainage Point	REI	Robbed Steel Joint
EP	Electric Pole	SC	Stair Case
ES	Earthed Lead	SC	Sewerage
FB	Flower Bed	SP	Suicidal Tree
FE	Fence	ST	St. Trip
FI	Fire Hydrant	ST	Stair Well
FL	Floor Level	SVC	Security Video Camera
FP	Flag Pole	TSS	Traffic Sign
GP	Gas Pipe	TL	Threshold Level
GV	Gas Valve	TL	Traffic Light
GUC	Gully	TK	Task
HI	Height	TP	Telogram Pole
IC	Inspection Cover	UG	Underground
I	Invert Level	UT	Unable to Trace Further
IR	Iron Railings	UL	Unable to Locate
IS	Iron Slat	UV	Unable to Raise
KS	Kerb Outlet	UT	Unable to Trace
LB	Litter Bin	VP	Vent Pipe
LP	Lamp Post	WL	Water Level
M	Manhole Cover	WM	Water Meter
MO	Manhole	WO	Wash Out

**NOTES**

- \* Tree species (where shown) should be treated with caution and expert identification is advised.
- \* Although this is a digital survey the accuracy and amount of detail shown is only commensurate with the practical state of mapping or photography. Care should be exercised when working to larger scales.
- \* Visible features in the vicinity of the boundaries as shown above, may not represent the extent or layout of existing services.
- \* Whilst every effort has been made to obtain accuracy on this plan, ORDNANCE SURVEY, dimensions, levels and levels should be checked prior to design and construction.
- \* Each level has been taken in the bottom of the channel.

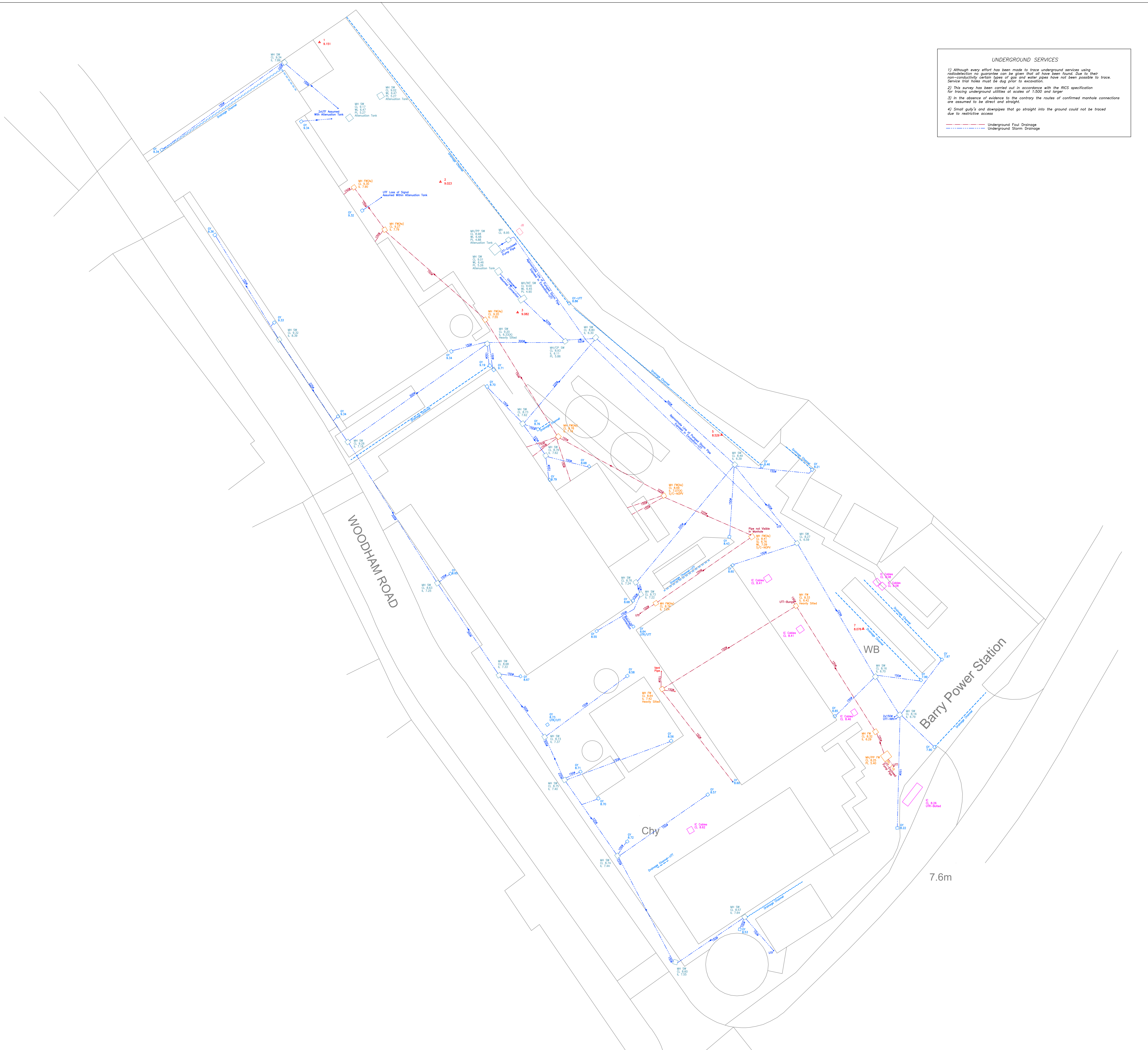
SHEET LAYOUT  
NOT TO SCALE

**BARRY ENERGY RECOVERY FACILITY**  
DAVID DAVIES ROAD  
CF63 4JE  
DRAINAGE SURVEY

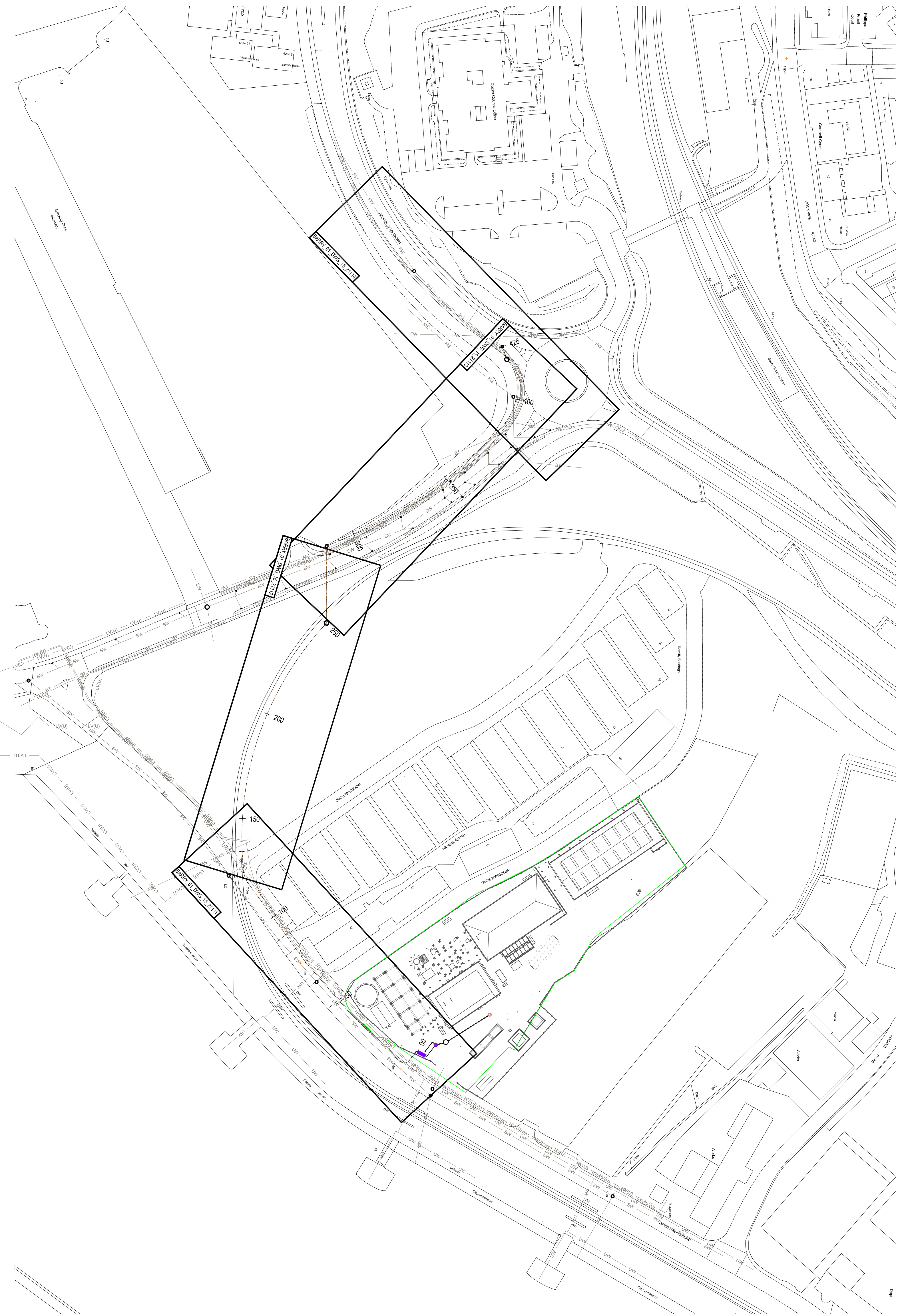
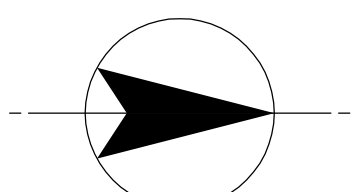
SURVEYED FOR: Sel Environmental  
7 Greenway Farm  
Bath Road  
WCS  
Bristol, BS30 5AL

SURVEYOR: D Jenkins  
DATE: April 2019

NO	DATE	REVISION
DRAWING NO	N 9334/1	REV 0
DRAWING TITLE	DRAINAGE	
SCALE	1 : 200 (A0)	
SEE ALSO DWG NOS		
SHEET	1 of 1	
REF NO	N 9334	







PLAN ON PROPOSED FOUL RISING MAIN ROUTE  
(SCALE 1:1000)

<b>SAFETY, HEALTH &amp; ENVIRONMENTAL (SHE) INFORMATION</b>
In addition to the hazards/risks normally associated with the types of work detailed on this drawing, note the following:
<b>CONSTRUCTION</b>
1. NEW RISING MAIN LAIN IN CLOSE PROXIMITY TO EXISTING SERVICES CONTRACTOR TO BEWARE.
2. WORK AROUND LIVE RAILWAY TRACK
3. WORK ON LIVE PUBLIC HIGHWAY AND PRIVATE ASP/ROAD.
<b>MAINTENANCE / CLEANING</b>
N/A
<b>DECOMMISSIONING / DEMOLITION</b>
N/A

**DO NOT SCALE - IF IN DOUBT ASK NOTES**

- GENERAL :**
- DO NOT SCALE FROM THIS DRAWING.
  - ALL DIMENSIONS ARE IN MILLIMETRES (mm) & ALL LEVELS ARE IN METRES (m) AOD, UNLESS STATED OTHERWISE.
  - ALL DIMENSIONS & LEVELS CHECKED ON SITE AND ANY DISCREPANCIES REPORTED TO GHD|LVGUNN

**SERVICES LEGEND (EXISTING UNO)**

—	PROPOSED RISING MAIN
—	FIBRE OPTIC CABLE VIRGIN MEDIA
—	EXISTING UNDERGROUND TELECOMMS
—	EXISTING SURFACE WATER GRAVITY SEWER
—	EXISTING UNDERGROUND HV/CABLE
—	EXISTING UNDERGROUND LV/CABLE
—	EXISTING WATER MAIN
—	EXISTING FOUL GRAVITY SEWER
—	EXISTING LOW PRESSURE GAS MAIN

ALL EXISTING SERVICES INDICATED ARE FROM UTILITY MAPS AVAILABLE. NAMELY:  
 • GROUNDSURE FAST-TRACK UTILITY SEARCH REPORT  
 • GRS0374/F/AST\_GS-9890263 DATED 11/03/2017  
 • ASP BELOW GROUND SERVICES DRAWING RECEIVED FROM GT 12/04/2016, GOOGLE STREET VIEW  
 • ALL SERVICE LOCATIONS AND LINES ARE TO BE CONFIRMED ON SITE BY THE CONTRACTOR PRIOR TO COMMENCEMENT OF WORKS. THE CONTRACTOR IS TO UNDERTAKE ALL NECESSARY PRECAUTIONS WHEN LOCATING EXISTING SERVICES.  
 ALL LAYOUT INFORMATION IS BASED ON ORDNANCE SURVEY DRAWINGS AND ALL LEVELS OBTAINED FROM LIDAR DATA DOWNLOADED MARCH 2017. THE PROPOSED ROUTE IS TO BE SUBJECT TO A TOPO SURVEY AHEAD OF WORKS TO CONFIRM THE DEPTH OF THE NEW PIPE.

**PRELIMINARY**  
DRAWING TO BE REPRODUCED  
IN COLOUR ONLY

Rev	Date	Description	By	Chk	App
D	01.06.18	UPDATED FOR W/C COMMENTS	MS	MS	GB
C	06/07/18	UPDATED FOR W/C COMMENTS	JW	MS	GB
B	20/06/17	UPDATED FOR P/VAL CABLE ROUTE	JW	MS	GB
A	27.03.17	FIRST ISSUE	JW	MS	GB

**GHD|LVGUNN**  
 The Studio  
 51 Brockfield Road  
 Cheshire  
 SK9 1ES  
 0161 491 4800  
 info@ghd|lvgunn.com

**GallifordTry**

**PROJECT**  
BARRY - BIOMASS UK No 2 LIMITED

**TITLE**  
FOUL RISING MAIN  
SHEET 1 OF 5

SCALE	DRAWING SIZE	DRAWN
1:250	A1	JW
DRAWINGS NO	REV.	
BARRY_01_DWG_15_21110	D	



**PRELIMINARY**

DO NOT SCALE - IF IN DOUBT ASK

**NOTES**

- GENERAL :
- DO NOT SCALE FROM THIS DRAWING.
  - ALL DIMENSIONS ARE IN MILLIMETRES (mm) & ALL LEVELS ARE IN METRES (m) AOD, UNLESS STATED OTHERWISE.
  - ALL DIMENSIONS & LEVELS CHECKED ON SITE AND ANY DISCREPANCIES REPORTED TO G.H.D.LIVIGUNN
  - MINIMUM COVER TO PIPE:  
= 1.20m UNDER ROAD AND FOOTPATH  
= 5.00m UNDER RAILWAY TRACK

- PIPEWORK :
- FLEXIBLE JOINTS FOR PIPES BUILT INTO STRUCTURES, MANHOLES OR CHAMBERS AS FOLLOWS :

NOMINAL DIAMETER (mm)	EFFECTIVE LENGTH (m) OF ROCKER PIPE
150 - 600	0.6
OVER 600 - 750	1.0
OVER 750	1.25

- ROCKER PIPES POSITIONED MINIMUM DISTANCE ACHIEVABLE FROM STRUCTURE, MANHOLE OR CHAMBER WITH ALLOWANCE FOR INSTALLATION OF FLEXIBLE JOINT.

**POLYETHYLENE PIPEWORK (PE100 HDPE):**

- ALL WORK TO BE CARRIED OUT IN ACCORDANCE WITH CESWI 7th EDITION.
- MATERIAL TO BE STORED, LAID AND JOINTED IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS.
- ELECTROFUSION JOINTING SHALL BE MADE IN ACCORDANCE WITH WIS 4-32-08 USING EQUIPMENT SPECIFIED IN WIS 4-32-14.
- A PIPE SECTION CONTAINING A COMPLETED WELD SHALL ACHIEVE THE SAME STRENGTH CHARACTERISTICS AS THE PARENT PIPE.
- BENDING RADIUS OF 35x PIPE DIA (WORST CASE HAS BEEN ASSUMED).
- FOR TESTING PF PIPELINE REFER TO CESWI 7 CL 7.10. TEST PRESSURE TO BE 6 BAR (TBC ON PUMP CALCULATION)
- PIPE BEDDING DETAIL AN SURROUND AS TYPICAL DETAIL. SELECTED BACKFILL TO CESWI 7 CL 2.50.

**SERVICES LEGEND ( EXISTING UNO )**

— FOC(V/M) — FOC(V/M) — FOC(V/M)	PROPOSED RISING MAIN
— BT — BT — BT	FIBRE OPTIC CABLE VIRGIN MEDIA.
— SW — SW — SW	EXISTING UNDERGROUND TELECOMMS
— HV(U) — HV(U) — HV(U)	EXISTING SURFACE WATER GRAVITY SEWER
— LV(U) — LV(U) — LV(U)	EXISTING UNDERGROUND HV CABLE
— UW — UW — UW	EXISTING UNDERGROUND LV CABLE
— FW — FW — FW	EXISTING WATER MAIN
— GAS(L/P) — GAS(L/P) — GAS(L/P)	EXISTING FOUL GRAVITY SEWER
	EXISTING LOW PRESSURE GAS MAIN

ALL EXISTING SERVICES INDICATED ARE FROM UTILITY MAPS AVAILABLE, NAMELY:

- GROUNDURE FAST-TRACK UTILITY SEARCH REPORT GRS03744/FAST\_GS-3690263 DATED 1/03/2017
- ABP BELOW GROUND SERVICES DRAWING RECEIVED FROM GT 12.04.2016.
- GOOGLE STREET VIEW

ALL SERVICE LOCATIONS AND LEVELS ARE TO BE CONFIRMED ON SITE BY THE CONTRACTOR. PRIOR TO COMMENCEMENT OF WORKS. THE CONTRACTOR IS TO UNDERTAKE ALL NECESSARY PRECAUTIONS WHEN LOCATING EXISTING SERVICES.

ALL LAYOUT INFORMATION IS BASED ON ORDNANCE SURVEY DRAWINGS AND ALL LEVELS OBTAINED FROM LIDAR DATA DOWNLOADED MARCH 2017. THE PROPOSED ROUTE IS TO BE SUBJECT TO A TOPO SURVEY AHEAD OF WORKS TO CONFIRM THE DEPTH OF THE NEW PIPE.

**PRELIMINARY**

DRAWING TO BE REPRODUCED IN COLOUR ONLY

C	01.06.18	UPDATED FOR PCML CABLE ROUTE	AJS	MS	GB
B	20.06.17	UPDATED FOR PCML CABLE ROUTE	JW	MS	GB
A	21.12.16	FIRST ISSUE	JW	MS	GB

Rev	Date	Description	By	Chk	App

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CLIENT

**GallifordTry**

PROJECT

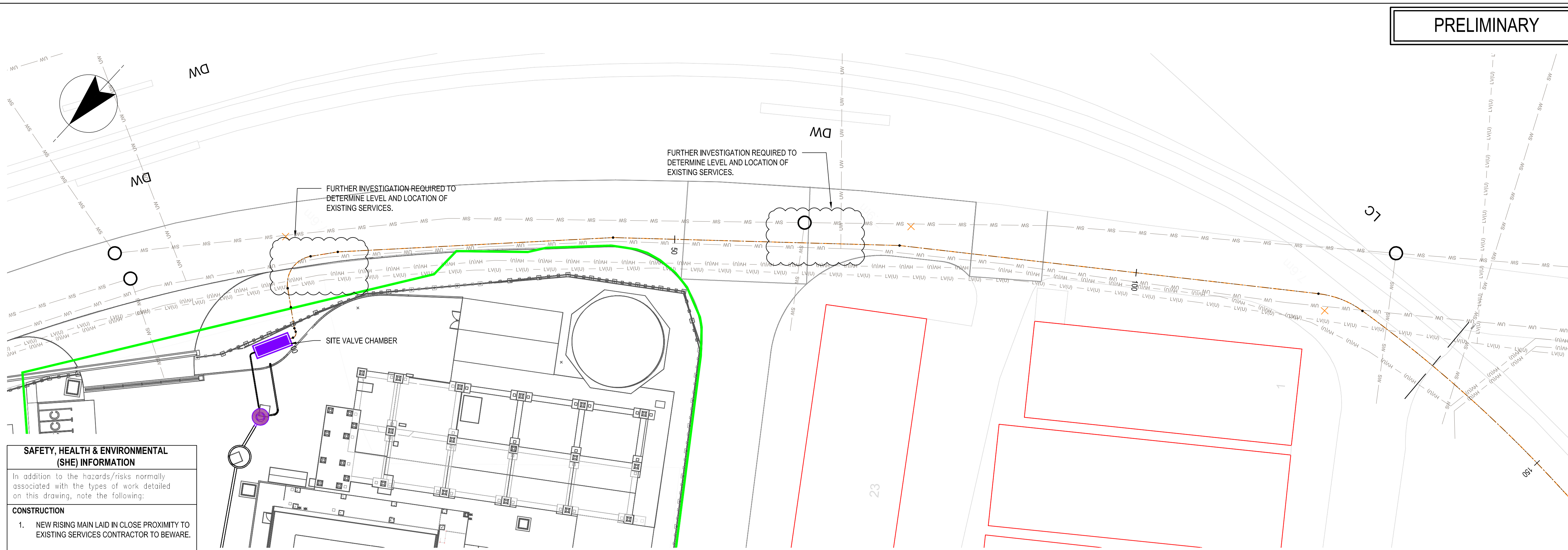
**BARRY - BIOMASS UK No 2 LIMITED**

TITLE

**FOUL RISING MAIN SHEET 2 OF 5**

SCALE 1:250 DRAWING SIZE A1 DRAWN JW

DRAWING NO. BARRY\_01\_DWG\_15\_21111 REV. C



**SAFETY, HEALTH & ENVIRONMENTAL (SHE) INFORMATION**

In addition to the hazards/risks normally associated with the types of work detailed on this drawing, note the following:

**CONSTRUCTION**

- NEW RISING MAIN LAID IN CLOSE PROXIMITY TO EXISTING SERVICES CONTRACTOR TO BEWARE.
- WORK AROUND LIVE RAILWAY TRACK.
- WORK ON LIVE PUBLIC HIGHWAY AND PRIVATE ABP ROAD.

**MAINTENANCE / CLEANING**

N/A

**DECOMMISSIONING / DEMOLITION**

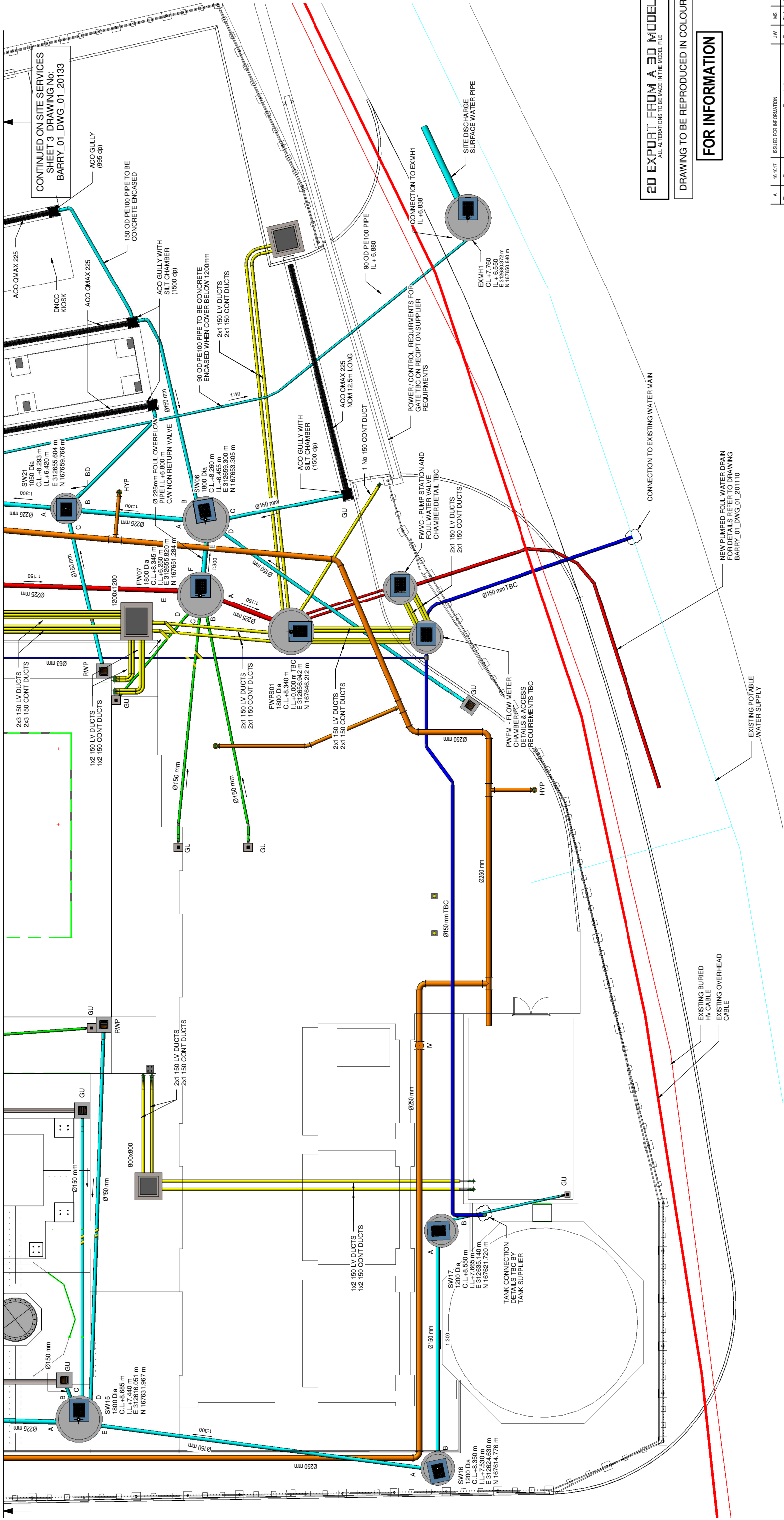
N/A

NEW FOUL CONNECTION TO BE 1.5 m AWAY FROM NEW WPD CABLE ROUTE . TBC BY WPD FOR EASEMENT REQUIREMENTS

STRUCTURE NAME	SITE VALVE CHAMBER																												
LEVEL (m) AOD	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0								
EX GROUND Lvs (m) AOD	8.503	8.319	7.870	7.863	7.847	7.864	7.850	7.867	7.866	7.844	7.864	7.828	7.830	7.810	7.797	7.810	7.840	7.833	7.850	7.803	7.810	7.804	7.799	7.741	7.739	7.742	7.671		
PIPE HORIZONTAL GEOMETRY	R: 0.500 L: 0.785 L: 0.330		L = 0.396 L = 4.379		R: 3.000 L: 4.712		L = 2.978		L = 29.783				L = 30.937				L = 45.523				R: 10.000 L: 5.161		R: 145.436 L: 125.663						
PIPE DIA & LENGTH (m)	90 OD PE100 SDR11 0.300m		90 OD PE100 SDR11 2.978m		90 OD PE100 SDR11 29.783m				90 OD PE100 SDR11 30.937m				90 OD PE100 SDR11 45.523m				90 OD PE100 SDR11 5.161m		90 OD PE100 SDR11 111.221m										
PIPE GRADIENT	1:300		Horizontal		Horizontal				Horizontal				Horizontal				Horizontal		Horizontal										
COVER TO CROWN (m)	MIN COVER = 1.150		MIN COVER = 1.653		MIN COVER = 1.367		MIN COVER = 1.362		MIN COVER = 1.327				MIN COVER = 1.298				MIN COVER = 1.251				MIN COVER = 1.229		MIN COVER = 0.951						
INVERT Lvs (m)	7.303	7.302	6.405	6.405	6.405	6.405	6.405	6.405	6.405	6.405	6.405	6.405	6.405	6.405	6.405	6.405	6.405	6.405	6.405	6.405	6.405	6.405	6.405	6.405	6.405	6.405			
EMBEDMENT CLASS																													
CHAINAGE (m)	00.000	00.000	05.000	10.000	15.000	20.000	25.000	30.000	35.000	40.000	45.000	50.000	55.000	60.000	65.000	70.000	75.000	80.000	85.000	90.000	95.000	100.000	105.000	110.000	115.000	120.000	125.000	130.000	135.000
CHAINAGE STRUCTURE (m)																													

FOUL RISING MAIN WPD ROUTE PV - (27)





CONTINUED ON SITE SERVICES SHEET 3 DRAWING No: BARRY\_01\_DWG\_01\_20133

2D EXPORT FROM A 3D MODEL  
ALL ALTERATIONS TO BE MADE IN THE MODEL FILE

DRAWING TO BE REPRODUCED IN COLOUR  
FOR INFORMATION

Rev	Date	Issued For Information	Description	By	Chk	App
A	16.10.17					

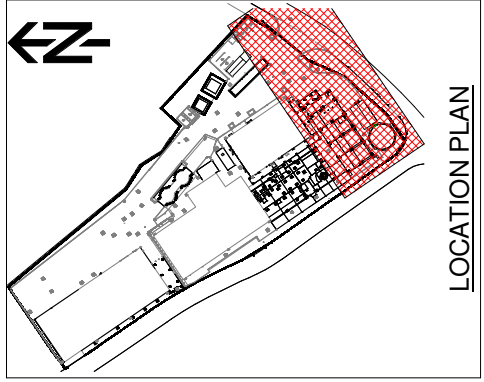
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**GallifordTry**

PROJECT  
BARRY BIOMASS UK NO 2 LIMITED

TITLE  
PLANNING LAYOUT  
SITE SERVICES SHEET 4

SCALE  
1:100  
DRAWING SIZE  
A1  
DWG No  
BARRY\_19\_DWG\_01\_40104  
REV.  
A



**NOTES**

**GENERAL**

- DO NOT SCALE FROM THIS DRAWING.
- ALL DIMENSIONS ARE IN MILLIMETRES (mm) & ALL LEVELS ARE IN METRES (m) AOD, UNLESS STATED OTHERWISE.
- ALL DIMENSIONS & LEVELS TO BE CHECKED ON SITE AND ANY DISCREPANCIES SHOULD BE REPORTED TO GHD LIVINGUNN.
- THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT PROJECT STANDARDS AND SPECIFICATIONS.

**REFERENCE DRAWINGS:**

BARRY\_19\_DWG\_01\_40101 - SITE SERVICES GA SHEET 1 OF 4  
 BARRY\_19\_DWG\_01\_40102 - SITE SERVICES GA SHEET 2 OF 4  
 BARRY\_19\_DWG\_01\_40103 - SITE SERVICES GA SHEET 3 OF 4  
 BARRY\_19\_DWG\_01\_40104 - SITE SERVICES GA SHEET 4 OF 4  
 BARRY\_19\_DWG\_01\_40105 - ATTENUATION TANK  
 BARRY\_19\_DWG\_01\_40106 - FUEL INTERCEPTOR

**DRAINAGE:**

- ALL DRAINAGE WORKS TO BE CARRIED OUT IN ACCORDANCE WITH CESWI 7TH EDITION
- NEW DRAINS ARE UNDERGROUND PVC-U IN ACCORDANCE WITH BS 4660. PROCESS WATER DRAINS TO BE HATHERWARE CHEMICAL RESISTANCE - TBC
- PIPE JOINTS IMMEDIATELY ADJACENT TO STRUCTURES AND CHAMBERS ARE FULLY ARTICULATED ROCKER PIPE JOINTS.
- ROCKER PIPES ARE 600mm LONG UNO ROCKER PIPES TO BE POSITIONED MINIMUM ACHIEVABLE DISTANCE FROM MANHOLE OR CHAMBER WITH ALLOWANCE FOR INSTALLATION OF FLEXIBLE JOINT
- ALL BURIED PIPES AND DUCTS UNDER STRUCTURE TO BE CONCRETE. ALSO WHERE GROUND COVER IS LESS THAN 900mm.
- DOUBLE STEPS SHALL BE PLASTIC ENCAPSULATED CARBON STEEL MANHOLE STEPS TO BS 12472. STEP IRONS AT 2500mm CENTRES HORIZONTALLY AND DOUBLE STEPS.
- PIPE BEDDING DETAILS SHOWN ON DRAWING: BARRY\_01\_DWG\_01\_20135

**LEGEND:**

- HYDRANT RING MAIN
- SURFACE WATER DRAIN
- FOUL WATER DRAIN
- PROCESS WATER DRAIN (AS HATHERWARE THERMACHEM PIPEWORK)
- ELECTRICAL DUCTS
- POTABLE WATER MAIN (AS PURITON BARRIER PIPE OSA)
- SURFACE WATER MANHOLE
- FOUL WATER MANHOLE
- ELECTRICAL DRAWPIT
- RAIN WATER PIPE
- ROAD GULLY
- HYDRANT POINT (PROPOSED)
- BACKFLOW VALVE (PROPOSED)
- BACKFLOW VALVE
- FIRE DELUGE VALVE KIOSK

## APPENDIX 06

### GHD Technical Note and As Built Drainage Drawing

# Technical Memorandum

22 March 2022

<b>To</b>	Darren Atkinson	<b>Tel</b>	+44 7891 940432
<b>Copy to</b>	Randall Smith	<b>Email</b>	nick.roberts@ghd.com
<b>From</b>	Nick Roberts	<b>Ref. No.</b>	12547182
<b>Subject</b>	Barry Biomass Drainage As Built Review		

RE: Barry Biomass

We have taken the existing network from the original 2017 MicroDrainage model and updated it to suit the As-Built layout completely (CL's, IL's pipe sizes and lengths etc). We have kept the areas same as before as we felt no change was necessary to that. The additional area to be included from the turning circle from the North of site is 1190m<sup>2</sup> = 0.119 ha.

The simulations we have run are as follows:

1. As-Built layout – No additional Area - 40% climate change – Pump active:

Simulation was run on the As-Built layout with the original areas and the turning area north of site **was not included** and the discharge pump was active. Simulation ran for 1 in 1-year, 1 in 30-year and 1 in 100-year events each with a 40% climate change allowance.

Calculated volumes:

Attenuation Tank: 446m<sup>3</sup> (worst case which is the 480min, 100year winter profile)

**Total Volume required: 446m<sup>3</sup>**

Current capacity:

Tubosider Tank: 652m<sup>3</sup>

**Total Capacity: 652m<sup>3</sup>**

Based on the Microdrainage modelling, 446m<sup>3</sup> storage is required and there is 652m<sup>3</sup> storage capacity within the As-built tubosider tank.

2. As-Built layout – Additional turning area 0.119 ha - 20% climate change – Pump active:

Simulation was run on the As-Built layout with the original areas and **included** an additional turning area of 0.119 ha to the north of site and the discharge pump was active. Simulation ran for 1 in 1-year, 1 in 30-year and 1 in 100-year events each with a 20% climate change allowance.

Calculated volumes:

Attenuation Tank: 443m<sup>3</sup> (worst case which is the 480min, 100year winter profile)

**Total Volume required: 443m<sup>3</sup>**



Current capacity:

Tubosider Tank: 652m<sup>3</sup>

**Total Capacity: 652m<sup>3</sup>**

Based on the Microdrainage modelling, 443m<sup>3</sup> storage is required and there is 652m<sup>3</sup> storage capacity within the As-built tubosider tank.

3. As-Built layout – Additional turning area 0.119 ha - 40% climate change – Pump active::

Simulation was run on the As-Built layout with the original areas and **included** an additional turning area of 0.119 ha north of site and the discharge pump was active. Simulation ran for 1 in 1-year, 1 in 30-year and 1 in 100-year events each with a 40% climate change allowance.

Calculated volumes:

Attenuation Tank: 533m<sup>3</sup> (worst case which is the 480min, 100year winter profile)

**Total Volume required: 533m<sup>3</sup>**

Current capacity:

Tubosider Tank: 652m<sup>3</sup>

**Total Capacity: 652m<sup>3</sup>**

Based on the Microdrainage modelling, 533m<sup>3</sup> storage is required and there is 652m<sup>3</sup> storage capacity within the As-built tubosider tank.

Regards

**Lee Glover**  
Principal Engineer

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