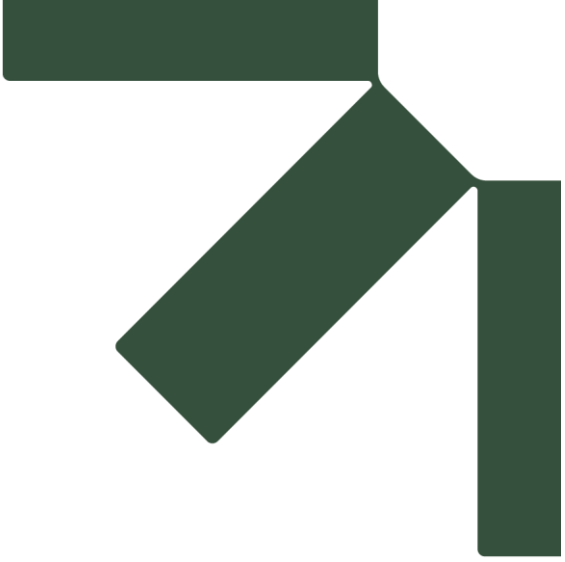




Appendix A NRW Correspondence

Hydraulic Modelling Report

Margam Moors – Substation Extension

BakerHicks Limited

SLR Project No.: 402.065496.00001

22 August 2025

Subject: RE: Information request - Margam_FMC_5_V1.0_2023 Update
Sent: 04/02/2025, 11:30:30
From: Flood Risk Analysis South<FRASouth@cyfoethnaturiolcymru.gov.uk>
To: Chris Middleton
Cc: Travis Malsheimer; Robert Walker

Hi Chris,

Cross Sections collected at approximately 50 metres spacing upstream of the inlet culvert appears reasonable. We recommend a cross section to be taken just downstream of the inlet culvert, this is to aid in the construction/modification of the model at this location.

We hope that answers your queries.

Thanks

Tim

Tim Gibson
Cynghorydd Dadansoddi Risg Llifogydd / Flood Risk Analysis Advisor
Dadansoddi Risg Llifogydd / Flood Risk Analysis
Rhif ffôn / Phone number: 07977 141665

Croesewir gohebiaeth yn Gymraeg a byddwn yn ymateb yn Gymraeg, heb i hynny arwain at oedi.
Correspondence in Welsh is welcomed, and we will respond in Welsh without it leading to a delay.

From: Chris Middleton <cmiddleton@slrconsulting.com>
Sent: 04 February 2025 10:27
To: Flood Risk Analysis South <FRASouth@cyfoethnaturiolcymru.gov.uk>
Cc: Travis Malsheimer <tmalsheimer@slrconsulting.com>; Robert Walker <robertwalker@slrconsulting.com>
Subject: RE: Information request - Margam_FMC_5_V1.0_2023 Update

Rhybudd: Deilliodd yr e-bost hwn o'r tu allan i'r sefydliad. Peidiwch â chlicio dolenni, atodiadau agored nac sganio codau QR oni bai eich bod yn cydnabod yr anfonwr ac yn gwybod bod y cynnwys yn ddiogel.

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Morning Tim,

Thank you for your email. Your requirements are acknowledged, and we concur that the hydraulic structures at the lake are critical.

Before we update Storm Geomatics' scope, could I ask NRW to confirm our understanding of the required cross-sections at the locations highlighted below and shown in yellow on the attached plan? Furthermore, could you confirm that the cross-sections surveyed upstream of the lake inlet at 50m intervals is acceptable to NRW?

Our provisional date for attendance on-site is the week commencing 10th March.

Kind regards,
Chris.

Chris Middleton (*he/him/his*)
Graduate Hydrologist - Hydrology & Hydrogeology

O [+44 3300 886631](tel:+443300886631)
M [+44 7890 971494](tel:+447890971494)
E cmiddleton@slrconsulting.com



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From: Flood Risk Analysis South <FRASouth@cyfoethnaturiolcymru.gov.uk>
Sent: 03 February 2025 08:33
To: Chris Middleton <cmiddleton@slrconsulting.com>
Cc: Travis Malmshemer <tmalmshemer@slrconsulting.com>; Robert Walker <robertwalker@slrconsulting.com>
Subject: RE: Information request - Margam_FMC_5_V1.0_2023 Update

Hi Chris,

Thank you for your email we have the following comments:

- NRW strongly recommends that survey cross sections be taken upstream of the inlet culvert of the lake, for approximately 150 metres.
- NRW recommend that an additional cross section is taken downstream of the inlet culvert.
- The lake outlet structures are critical to understanding flood risk and we recommend that the surveyor collect detailed information as this may help in better understanding of the flow capacity of these structures.
- We suggest if safe to do so to collect an additional cross section at the confluence of the two outlet drains.
- Storm Geomatics are familiar of NRW specification for hydraulic modelling survey which is based on the Environment Agency National Standard Technical Specification for Surveying Services.
- NRW recommend that Q_{med} simulation is also ran for all simulations.

As previously stated, that it is for the modeller/consultant to review the selected methodology during the development of the hydraulic model to ensure that it is delivering the intended requirements for the study.

Thanks,

Tim Gibson
Cynghorydd Dadansoddi Risg Llifogydd / Flood Risk Analysis Advisor
Dadansoddi Risg Llifogydd / Flood Risk Analysis
Rhif ffôn / Phone number: 07977 141665

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From: Chris Middleton <cmiddleton@slrconsulting.com>

Sent: 31 January 2025 11:07

To: Flood Risk Analysis South <FRASouth@cyfoethnaturiolcymru.gov.uk>

Cc: Travis Malsheimer <tmalsheimer@slrconsulting.com>; Robert Walker <robertwalker@slrconsulting.com>

Subject: RE: Information request - Margam_FMC_5_V1.0_2023 Update

Rhybudd: Deilliodd yr e-bost hwn o'r tu allan i'r sefydliad. Peidiwch â chlicio dolenni, atodiadau agored nac sganio codau QR oni bai eich bod yn cydnabod yr anfonwr ac yn gwybod bod y cynnwys yn ddiogel.

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Prynhawn Da Alistair,

I hope you've been well.

We are looking to move forward with the Flood Map Challenge for the Margam Moor/Park area and would like to discuss the project with you further.

We'd like to establish a line of communication with NRW to validate our methodology for the Flood Map Challenge. The attached technical note summarises our method based on the requirements you outlined in the email thread below should you wish to comment further.

Is it acceptable for us to engage with you directly regarding this project moving forward?

Thank you for your time and assistance.

Kind regards,
Chris.

Chris Middleton (*he/him/his*)

Graduate Hydrologist - Hydrology & Hydrogeology

O [+44 3300 886631](tel:+443300886631)

M [+44 7890 971494](tel:+447890971494)

E cmiddleton@slrconsulting.com

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From: Flood Risk Analysis South <FRASouth@cyfoethnaturiolcymru.gov.uk>

Sent: 11 September 2024 11:58

To: Chris Middleton <cmiddleton@slrconsulting.com>

Subject: RE: Information request - Margam_FMC_5_V1.0_2023 Update

Hi Chris,

The time frame for a model review is 6 weeks from submission.

Thanks,

Alastair Papworth

Cynghorydd Dadansoddi Risg Llifogydd / Flood Risk Analysis Advisor

Dadansoddi Risg Llifogydd / Flood Risk Analysis

Yn Ardystiedig o ran Llythrennedd Carbon / Certified Carbon Literate

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From: Chris Middleton <cmiddleton@slrconsulting.com>

Sent: Wednesday, September 11, 2024 11:24 AM

To: Flood Risk Analysis South <FRASouth@cyfoethnaturiolcymru.gov.uk>

Subject: RE: Information request - Margam_FMC_5_V1.0_2023 Update

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Morning Alastair,

Thank you for providing this information. We will ensure that we cover these points within our modelling report.

In the interest of scoping our programme, may I ask as to the approximate time it takes to review or accept a model's outputs following submission of a Flood Map Challenge? Based on the 2023 JBA report, it appears it took over a year to complete the FMC.

If you are unable to answer, please provide a suitable contact so I may discuss the process.

Kind regards,
Chris.

Chris Middleton *(he/him/his)*
Graduate Hydrologist - Hydrology & Hydrogeology

O [+44 3300 886631](tel:+443300886631)
M [+44 7890 971494](tel:+447890971494)
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From: Flood Risk Analysis South <FRASouth@cyfoethnaturiolcymru.gov.uk>
Sent: Wednesday, September 11, 2024 11:11 AM
To: Chris Middleton <cmiddleton@slrconsulting.com>
Subject: RE: Information request - Margam_FMC_5_V1.0_2023 Update

Good Afternoon Chris,

Thank you for the query regarding the Margam_FMC_5_V1.0_2023 hydraulic model.

Following extensive review of this area, NRW considers the following additional requirements to be completed for the hydraulic model.

- NRW note that there is a hydraulic structure at the inlet of the Lake, this is a culvert that may control the inflow to the lake. NRW does not have detailed survey of this structure or the river in this area. NRW recommend that this area be surveyed and including a length of the channel up and downstream to understand the impact of this hydraulic structure. This is shown on OS maps please see: [Side by side georeferenced maps viewer - Map images - National Library of Scotland \(nls.uk\)](#).
- NRW are unaware if there are any other hydraulic structures that would constrict the flow within the stream to the Lake.
- Two culverts missing under A4241 approximate at location SS78458675, NRW does not have detailed survey of these structures. It will depend on your client's site if these may need to be added.
- In may need additional survey data at the outlet of the lake including the channel and confirm the car park levels on the western edge of the lake as this area is where the floodwaters break out.
- The operation of the lake and how the lake level is maintained.
- The final point regarding hydraulic model is the hydrology applied within the model. This has undergone review by both JBA and NRW and is based on the current methodology which is considered suitable. Although it is NRW's opinion that the issue may relate to the flow estimate and will require a detail hydrological study to understand if the current methodology is over estimating Q_{med} .

We hope the above will assist you developing your modelling methodology and requirements for the work you are undertaking. It is for the modeller/consultant to review the selected methodology to ensure that it is delivering the intended requirements for the study.

Kind Regards,
Alastair Papworth
Cynghorydd Dadansoddi Risg Llifogydd / Flood Risk Analysis Advisor
Dadansoddi Risg Llifogydd / Flood Risk Analysis
Yn Ardystiedig o ran Llythrennedd Carbon / Certified Carbon Literate

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From: Chris Middleton <cmiddleton@slrconsulting.com>
Sent: Tuesday, September 10, 2024 3:10 PM
To: Flood Risk Analysis South <FRASouth@cyfoethnaturiolcymru.gov.uk>
Subject: Information request - Margam_FMC_5_V1.0_2023 Update

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Good afternoon,

Regarding the Margam_FMC_5_V1.0_2023 hydraulic model, I would like to request guidance on updating the flood maps for planning within the modelled boundary. On behalf of our client, we aim to confirm the fluvial risk to the wider area.

The accompanying JBA report (Rev.: B, February 2023) notes that the flood risk from the 'Ty Du' reservoir does not align with the area's flood history, particularly west along the M4.

Could you provide guidance on aligning our model revision with the required approach? Please clarify which elements of the model should remain unchanged and the acceptable level of detail for challenging the previous model.

Pending receipt of Product 7 from NRW, I'm available to discuss the requirements via a call if needed.

Kind regards,
Chris

Chris Middleton (*he/him/his*)
Graduate Hydrologist - Hydrology & Hydrogeology

O +44 3300 886631
M +44 7890 971494
E cmiddleton@slrconsulting.com

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