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Your Ref/Eich Cyf **My Ref**/Cyf GTD001/SAB/PRE/2024/014

Callum Parker
Hydrock
3rd Floor
13 Wharton Place
Cardiff
CF10 1GS

Dear Callum

Re: SAB/PRE/2024/014 – St Richard Gwyn, Argae Lane, Barry, CF63 1BL.

Proposal: Proposed New School, Sports Pitches and Car Parking Area.

The Flood and Water Management Act 2010 (Schedule 3), implemented in Wales on January 7th 2019 requires all new developments to include Sustainable Drainage System features that are compliant with national standards.

Overview:
Information submitted to support this pre-application suggests that surface water runoff generated by the development will be directed to SuDS features in the form of green roofs, permeable surfaces and swales. Discharge from the system will be made to an adjacent watercourse (Cold Brook) at attenuated rates.

Standard S1 – Surface Water Runoff Destination
Priority Level 1: Collection for Use:
It is acknowledged that rainwater harvesting systems are not considered a viable option for the site when compared to its cost of implementation. It is recognised that water is a valuable resource and would encourage the use of rainwater harvesting where possible.

We offer no objection to priority 1 level collection of use.

Priority Level 2: Discharge of surface water into ground:
It is indicated in the supporting Phase 2 Ground Investigation Report (Hydrock, April 2023) that geology beneath the site predominately comprises Made Ground deposits underlain by Alluvium and bedrock geology of the Mercia Mudstone Group.
As part of the investigation, it is acknowledged that 10 infiltration tests were undertaken within the alluvium / Mercia Mudstone Group all of which reporting

negligible rates of infiltration. 3 falling head tests were undertaken within the Mercia Mudstone Group reporting minimal infiltration rates, of which we are in acceptance.

Based on site observations and post ground investigation monitoring it is noted that groundwater levels have been reported as shallow (0.57m bgl) and may be susceptible to seasonal fluctuation.

We offer no objection to priority level 2 discharge of surface water into ground.

Priority Level 3: Discharge to a Surface Water Body:
It is acknowledged that surface water runoff generated from the proposed development will be discharged at the attenuated peak rate of 22.7l/s to the Cold Brook watercourse adjacent to the site.

Where a new outfall to the Cold Brook (main river) is proposed, it is advised that further consultation is made with NRW as to the requirements of a Flood Activity Permit. It is requested that evidence of the consented permit is provided at full application.

The design of any offsite drainage system must demonstrate that the scheme does not adversely affect flood risk elsewhere.

From the details submitted we offer no objection to priority level 3 discharge to a surface water body.

Priority Level 4: Discharge to surface water sewer or highway:
It is acknowledged that the submitted application does not propose to discharge surface water directly to a surface water sewer or highway drain.

Priority Level 5: Discharge to combined sewer:
It is acknowledged that the submitted application does not propose to discharge surface water directly to a combined sewer.

Standard S2 – Surface Water Runoff Hydraulic Control
The surface water drainage system should be designed so that flooding does not occur on any part of the site for a 1 in 30 year return period and not in any part of any building for a 1 in 100 year return period plus climate change (40%) with consideration given to receiving flows from the wider catchment.

It is acknowledged that the submitted drainage strategy proposes an attenuated peak discharge rate of 22.7l/s, of which we find acceptable. Calculations have been provided which demonstrate the systems performance up to a 1 in 1000 year return period. With appreciation to this additional sensitivity analysis it is requested that a flood exceedance plan is still provided inclusive of proposed level contours at full application.

Due to the required lining of the permeable surfaces assumed compliance for interception is not achieved with regard to the requirements of Table G2.1 of the Statutory Standards. It is noted however that outputs of a no discharge analysis have been provided for a 5mm rainfall depth demonstrating no discharge from the system.

Please could further clarification be provided surrounding this aspect of the analysis. Presumably the drainage system is empty at the beginning of the analysis and we would like to consider how the method used accounts for antecedent conditions in comparison to the continuous rainfall series analysis recommended in the standards (G2.16).

Standard S3 – Water Quality
It is acknowledged that the Simple Index Approach has been used to demonstrate that the SuDS features proposed would be suitable to remove pollutants from their intended environment.

SuDS components can only be assumed to deliver these indices by following the design guidance with respect to hydraulics and treatment as set out in the relevant technical component chapters of the SuDS manual.

Where propriety products are to be used to aid water quality it will be required that a detailed assessment is provided as evidence of performance and adopted pollution mitigation indices.

Compliance with interception will also be required to meet standards for water quality.

In principle we offer no objection to Standard 3 water quality.

Standard S4 – Amenity
It is acknowledged that the proposed scheme has the potential to provide amenity benefits through the promotion of usable space whilst also providing enhanced visual character, as such we offer no objection to standard S4 Amenity.

Standard S5 – Biodiversity

We acknowledge that the proposed drainage scheme has the potential to provide a self-sustaining ecosystem which will contribute to the delivery of local biodiversity objectives. No planting schedule for the SuDS features have been provided at this stage and will be required for further review. Such planting should be easily maintained, resilient to its proposed environment and native to the region where possible. The introduction of invasive species will not be permitted.

Standard S6 – Design
At this pre-application stage limited information has been provided with regard to the construction, operation and maintenance of the drainage system. However it is acknowledged that the drainage system could be constructed easily, safely, cost effectively and in a timely manner.

No Construction Environmental Management Plan has been submitted with this application. The CEMP must make reference to the phasing of the development and how the proposed drainage (temporary or permanent) will be managed during construction. It is appreciated that the CEMP is often provided by the appointed contractor and may be dealt with by condition on approval.

Please note submitted plans will be referenced in any SAB approval granted and will form the basis of future inspection.

Conclusion
An appraisal of this application has been made by the SuDS Approval Body in line with Welsh Governments Statutory Standards for Sustainable Drainage Systems. From the details provided we offer no objection in principle to the proposed drainage scheme subject to our comments above.

Yours sincerely,

Gareth Thelwell-Davies
Principal Engineer – Environment

For Operational Manager Engineering
Ar gyfer Rheolwr Gweithredol Peirianneg