



DRAINAGE KEY

- SITE BOUNDARY
- PROPOSED SURFACE SEWER & MANHOLE
- PROPOSED FOUL SEWER & MANHOLE
- PROPOSED LINEAR DRAINAGE CHANNEL
- PROPOSED ATTENUATION BASIN
- PROPOSED LOW FLOW CHANNEL
- PROPOSED SWALE
- PROPOSED BIORETENTION STRIP
- EXTENT OF C2 FLOOD ZONE
- PROPOSED SURFACE WATER FLOWPATH DIRECTION
- EXISTING DRAINAGE

DRAINAGE STRATEGY OVERVIEW

SUSTAINABLE SURFACE WATER DRAINAGE STRATEGY

The target SuDS-based surface water drainage strategy has been prepared and presented in outline to VoG SAB on 12/04/2021, ahead of the future formal SAB pre-application. Since that point the scheme and its drainage has developed further, enabling this outline strategy drawing to be prepared.

A summary of the proposed strategy is as follows:

- DISCHARGE DESTINATION:** The existing site is entirely a grassed sports pitch. We are not aware of any positive pitch drainage in place under the pitch, but there is surveyed evidence of drainage from other areas passing through the site, which discharges to a local watercourse off-site via an existing private surface water drain and an engineered open drainage channel. The proposed site is unable to drain via infiltration due to unsuitable ground conditions (proven by testing). The proposed school development will connect to the existing surface water drain that passes through the site, which discharges to a local watercourse system to the north close to the northern boundary of the site.
- WATER QUANTITY:** The existing QBAR greenfield discharge rate from the site is 2.9l/s. This value becomes the maximum permissible discharge rate from the proposed development during all storm up to the critical 1:100+40% storm event. The main means of surface water flow rate reduction is a 1m deep attenuation basin and a hydrobrake flow control, discharging to the downstream surface water drain. There is likely to be further marginal flow rate and volume reduction benefits through the use of site-wide SuDS features.
- WATER QUALITY:** Interception of flows from trafficked, pedestrian and roof areas is required. Flows from roof and pedestrian paved area will be discharged to receiving shallow swales, landscaped bioretention areas or directly to the attenuation basin. The very small area of vehicular space on the proposed site will also drain to the bio-retention area directly adjacent to it.
- AMENITY:** The general landscape strategy and the SuDS features all contribute to the overall amenity provision across the site, considering its conversion from a sports pitch to a school.
- BIODIVERSITY:** As per the amenity point. The inclusion of shallow landscaped swales, bioretention areas and the main attenuation basin will provide a biodiversity benefit.
- OWNERSHIP:** All owned, operated and maintained by VoG Education.
- MAINTENANCE:** Good drainage maintenance access to all parts of the system is provided.
- CONSTRUCTION:** All the SuDS features are shallow landscape-based features and as such are simple and low-cost to construct.
- SAB APPLICATION:** The next stage of the drainage approval process is to develop the design further and make a full formal SAB-pre application submission. That will then inform the full SAB application after detailed design is completed.

FOUL WATER DRAINAGE

- The existing school site is served by existing private foul drainage on site, which includes a private foul water pumping station and off-line (below ground) storage tank. The final discharge from the existing pumping station is to the public foul sewer.
- The proposed school building will need to discharge to this existing pumping station. Any required additional emergency storage provision or pumping equipment upgrades required as a result of additional flows will be undertaken.
- DCWW approval is required for the indirect foul water flows connection to the receiving combined sewer.

FLOOD RISK

- The flood consequences assessment (FCA) completed by Hydrock in December 2020 identified that the northern part of the site is situated in flood zone C2. This does not affect the building, which is not at risk from flooding.
- The flood zone indicated on this drawing does prevent the area under the proposed MUGA to be used for a surface water attenuation. This is mitigated by the placement of the surface water attenuation basin outside of the flood zone.
- The FCA also recommended that any ground level rise within the flood zone C2 is mitigated by an equivalent level reduction in the retained grassed area, in order to prevent loss of flood storage volume.
- There is also a recommendation to set the building floor level 150mm above the existing ground level. This has been achieved near the entrance side of the site (east).

REVISIONS

Rev	Date	Description	By	Ckd	App
P01	21/05/21	First Issue.	JSL	RB	RB

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FOR
VALE OF GLAMORGAN COUNCIL

PROJECT
COWBRIDGE PRIMARY SCHOOL

TITLE
SUSTAINABLE DRAINAGE STRATEGY

HYDROCK PROJECT NO. C-17637-C	SCALE @ A1 1 : 200	STATUS
STATUS DESCRIPTION PAC		S2
DRAWING NO. (PROJECT CODE-ORIGINATOR-ZONE-LEVEL-TYPE-ROLE-NUMBER) COW-HYD-XX-XX-DR-C-2100		REVISION P01

