

St Illtyd

Proposed Sustainable Drainage Strategy

The surface water drainage strategy for the proposed artificial grass pitch is to let rainfall falling on the pitch infiltrate through the porous pitch construction layers and into a layer of permeable sub-base stone below.

That permeable sub-base layer acts as a storage reservoir for the water, which is then collected by a 225mm diameter perforated collector drain and the flow is conveyed to a flow control manhole before discharging to the existing school's surface water drainage system.

The existing surface water discharge from the site area is an uncontrolled gravity discharge from a drained grass pitch area.

The proposed discharge rate from proposed artificial grass pitch will be reduced to the QBAR existing rate at the hydrobrake flow control, during all storm events up to the critical duration 1 in 100 year storm event, plus a 40% climate change allowance factor. For the existing "Redgra" gravel sports court, which is positively drained, the existing discharge is taken to be from 25% being considered as impermeable and positively drained.

The discharge point from the proposed drainage for the pitch is to the existing surface water drainage system that already receives flows from the positively drained grass pitch and redgra areas. Within the drainage design and strategy there is no consideration for infiltration drainage due to prove unsuitable ground conditions (tests failed), from the permeable sub-base layer and into the underlying ground. The pitch is not lined, so there will be some marginal water volume losses to the underlying ground, but infiltration is not relied upon to drain the pitch or to achieve compliance. The pitch and any other porous surfaces areas provide their own interception area.

The pitch drainage work is subject to detailed design for compliance with the SuDS legislation and must achieve SAB approval before construction commences.

In terms of the SuDS standards for SAB compliance the general strategy is as follows:

Discharge Destination:

To existing private surface water drainage system, as per the existing grass pitch and gravel sports area drainage.

Discharge Quantity:

Outflow limited to QBAR existing runoff rate for all storms up to 1:100yr+40%.

Water Quality:

Very low water quality risk. Some treatment occurs within the permeable sub-base layer. Catchpits provided for silt and debris collection.

Water Re-use:

There is no practical demand for non-potable water usage on site, as this is just for a 3G artificial grass sports pitch and is not practicably close to any school buildings.

Amenity:

As a sports facility the proposals is fundamentally an amenity development.

Biodiversity:

No biodiversity provision within a 3G pitch development. An allowance for compensatory landscape through biodiverse grassed areas elsewhere on the site has been allowed for to satisfy SAB requirements equivalent to 10% of the proposed pitch.

Ownership:

Owned and operated by the school / Cardiff Council

Maintenance:

By the school / Cardiff Council. Catchpits and rodding eyes are provided on key drainage lines to aid future cleaning and maintenance.