

Southern Water Services Limited
PO Box 4056
Worthing
West Sussex
BN13 3XX

Our Ref: 1910.02.SW.FAZ.PS.A0

5 August 2014

To whom it may concern,

Purbrook Park School Extension & Sports Field Discharge Connection to Southern Water MH 7050

We are Engineering Consultants acting for Purbrook Park School in Purbrook, Hampshire whose management are considering re-development of the school including:

- Two Extensions i.e. an infill building and a gym store building, both of which will be located on the existing impermeable surfaces
- Two new car parking areas
- Sports field

Existing Drainage

Drainage investigations have confirmed that surface water runoff from the entire school area is directed into a system of on-site soakaways with the exception of runoff from a portion on the east of the site which drains in a southerly direction, leaving the site along the southern boundary.

The existing soakaways are old and mostly silted up. Based on the information provided by the School there is localised surface water flooding at the School in periods of heavy rainfall.

Infiltration tests which were carried out in April 2014 by a firm of Geotechnical and Environmental Engineers which indicated a poor coefficient of permeability at one location and zero coefficient of permeability at the remaining locations (5 locations in total).

Based on the above evidence, we seek to discharge the runoff from the proposed re-development areas into the existing Southern Water manhole reference number 7050 on Dale Road.



Certificate Number 9113
ISO 9001, ISO 14001

Caulmert Limited

Registered Office: InTec, ParcMenai, Bangor, Gwynedd, LL57 4FG

Company Registered No. 06716319

Company Registered in Cardiff



Sustainable Urban Drainage Systems (SUDS)

We propose to apply SUDS methodology based on the guidance given in the SUDS Manual (CIRIA C697, 2007) in order to manage the surface water runoff from the proposed re-development areas.

In view of the fact that the site is located in an urbanised location, it is only possible to apply certain components of SUDS techniques to the proposed development.

Proposed SUDS for the Proposed Extension and New Car Parking Areas

For this site the suitable SUDS technique will include:

- Pervious pavements: Surfaces that allow water to soak into a gravel-filled base.
- Sub-surface attenuation storage: Modular plastic systems, collecting the runoff from the pervious pavement as well as impermeable areas.
- Limited rate of discharge: Discharge from the sub-surface attenuation storage will be limited to a prescribed rate of flow agreed with Southern Water.
- The attenuation volume will be design to accommodate the runoff generated up to and including the 100-year storm event plus climate change based on the rate of limited discharge into Southern Water existing drainage system for the area.

Proposed SUDS for the Proposed Sports Field

The existing Sports Field does not contain a positive drainage system and it is often waterlogged during intense rainfalls. Our enquiries indicated that runoff from the field is not currently an issue.

However, mindful of the importance of effective water control the drainage will be designed with the following features:

- The gradient on the field within the catchment is being reduced to a maximum of 1%, thereby reducing surface runoff.
- The existing compacted soil that results in fast surface runoff, is being changed both in texture and structure. For effective and robust grass growth the soil profile must allow both water and air to move as freely as practicable within it. To achieve this clay based soil is ameliorated with gypsum and sand to improve its texture, and it is decompacted to improve its structure. This will allow rainfall to penetrate the soil profile, rather than run off the surface.
- In addition there will be a comprehensive primary and secondary field drainage system to transmit the water from the surface to prevent surface ponding.
- There will be substantial field capacity both in the soil profile, and in the drainage system, to absorb water. This will be aided by evapotranspiration from the heavier grass cover that the healthy growing conditions will allow.
- Should there be persistent heavy rain water can be stored temporarily in the system until the outlet is flowing at a rate below its maximum capacity. This can be achieved by a restricted outlet from the system if required.
- The capacity of the existing pond is to be increased as part of the works, to provide an additional attenuation volume.
- In extreme cases, water can be allowed to back up and may even lie on the surface of the playing field for a short time, until conditions improve. This will not be detrimental to the playing surfaces, providing there is no use of the areas while they are standing water.
- The runoff will discharge into the existing pond with limited discharge into a new manhole downstream of the proposed sub-surface storage units for attenuation of runoff for the proposed school extension.
- Limited rate of discharge: Discharge from the pond will be limited to a prescribed rate of flow agreed with Southern Water in conjunction with runoff from the proposed

school extension and new car parking areas before discharging into the existing manhole reference number 7050.

- The attenuation volume within the existing pond will be design to accommodate the runoff generated up to and including the 100-year storm event plus climate change based on the rate of limited discharge into Southern Water existing drainage system for the area.

We will make every effort to meet Southern Water requirements and would be happy to meet with the representative of Southern Water to discuss the proposed drainage solution.

We enclose the section 106 form and relevant documentation and a cheque for £277.00.

If you have any questions or require further information please do not hesitate to contact the undersigned.

Yours Sincerely,

For and on behalf of Caulmert Ltd

Faraj Arfa-Zangeneh
Associate

Enc:
Site Location plan
2 x copies of the drainage layout
A cheque for £277.00