

Location: Areas for growth

Context:

The Camborne Pool Redruth (CPR) area is served by a combined sewer network that in many places is operating at or near to capacity. In addition, the sewage treatment works is already at capacity and as a result, all future development cannot contribute additional flows to the system without first either reinforcing the existing network and replacing the sewage treatment works or, removing surface water flows to increase capacity.

To ensure that development of the CPR area is not constrained, work has been undertaken to determine where and how surface water can be removed from the combined sewer system. This work is now contained within a document called the Surface Water Management Plan (SWMP).

This data sheet provides the developer with the criteria needed to meet the principles of the SWMP for the CPR area and to assist their development through the planning process with respect to drainage. Early consultation with the relevant statutory authorities is the best way to approach development in the CPR area to ensure that all parties understand what is required to deliver a successful project.

Table DS 2.0: Development plots within CPR classified as areas for growth & associated sewer capacity status

Development plot reference from AAP (2007):	Sub-catchment:	Sewer Capacity status:
J1	1	Flood risk – Attenuate surface water flows.
H15	1	Capacity – discuss requirements with EA / SWW / CCC.
H16	1	Flood risk – Attenuate surface water flows.
H5	3	Surcharged – Attenuate surface water flows.

The principles of the SWMP:

Due to the CPR area having a significant history of mining it was decided at an early stage that introducing more surface water into the ground should be avoided. This was due to the existing problems with contamination leaching out from the mines through the adit system (the mine’s drainage systems) and polluting the downstream watercourses. **Where it can be proved by the developer that infiltration of surface water will not result in mobilisation of ground contaminants on their plot, or problems caused by additional ground water draining into existing mine workings then this constraint may be negotiable.**

Surface attenuation and conveyance of flows is preferred to sub-surface approaches, e.g. soft engineered solutions such as ponds, swales, or wetland areas as opposed to over-sized pipes, or box

culvert tanks etc. **It will be expected that the developer will apply surface solutions and only in exceptional circumstances supplement these with sub-surface solutions if constrained.**

Design criteria:

In areas for growth surface water drainage will need to be designed in line with the Environment Agency (EA) Drainage Guidance for Cornwall document which can be obtained directly from the EA. Other reference documents that will assist with the design include the SUDS Manual (produced by CIRIA document number C697), and Sewers for Adoption 6th Edition (produced by WRc).

The CPR area drains into either the Red River (Camborne), or Portreath Stream (Redruth). Both of these watercourses are classified as yellow problem drainage areas, which means that the restrictions detailed in section 7 of the EA Drainage Guidance for Cornwall will need to be adhered to. The guidance is split into three parts for yellow problem drainage areas; 'residential extensions and single dwellings with no new roads', 'small residential and industrial / business developments', and 'medium or large developments (typically greater than 1 hectare).

The EA's guidance document requires the developer to implement SUDS (Sustainable Drainage System) solutions; this includes restricted surface water flows discharging from the development plot to either a sewer or watercourse (if present). Any surface water flow to be discharged to a sewer will need to be discussed with the owner of that system and subsequent consent to discharge granted. The owner of the sewer network could be South West Water, Cornwall County Council, or a third party.

Best Practice examples:

Below are a couple of examples of best practice methods of SUDS solutions;

Upton, Northamptonshire (picture courtesy of English Partnerships)

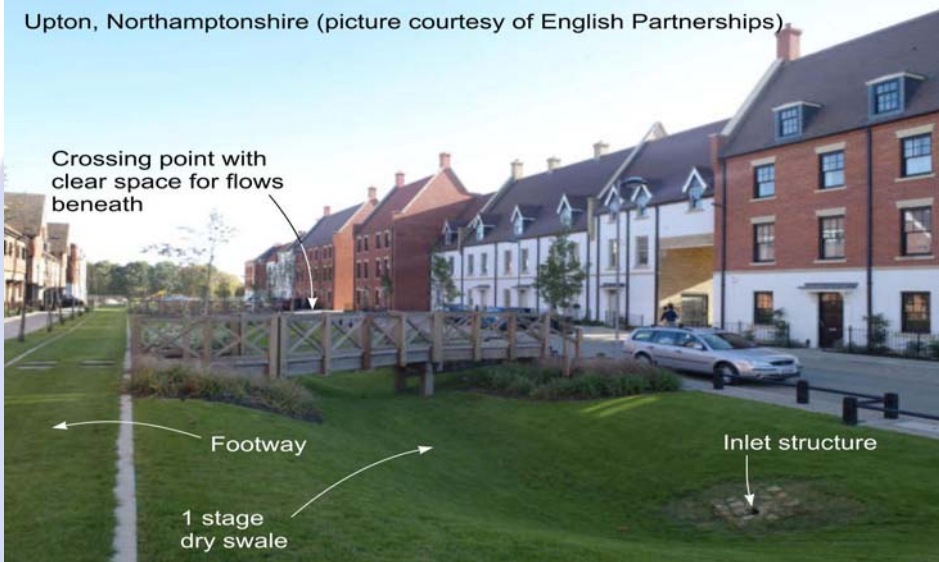


Figure DS 2.0: Dry swale used for conveyance of storm water and attenuation.



Figure DS 2.1: Exeter Business Park (wet) attenuation pond with storage volume provided above permanent water level.

