

Planning Reference: P/2019/0312

Land to the Rear of Brookfield Close, Ellesmere Lane, Penley. LL13 0LS
National Grid Reference: SJ 41878 39619

For Primesave Properties Ltd.

Drainage Resume for Planning and SAB.

Site Drainage:

Currently, Phase 2 development is Greenfield and to all intents and purposes will be a simple extension of Phase 1 which fronts Ellesmere Lane.

The foul water drainage will be a simple connection to the existing system and adopted sewers in Ellesmere Lane.

Turning now to the surface water, porosity tests have been undertaken on this phase as well as the first. There is no change from the original results whereby the soils are clay based and have insufficient porosity to allow the use of soakaways. Of course, soakaways would have been our preferred option as these are considered to be the cheapest arrangement and would be considered to be the highest in terms of receptor and priority if indeed the ground had sufficient porosity.

On the first phase the drainage was captured in a piped system around the properties and discharged to a modular crate attenuation system with this outfall via a hydrobrake chamber which controlled flows to typically 5.0l/s and then discharged to the adjacent ditch/watercourse. This system has been placed with a management company and they are responsible for the ongoing and long-term maintenance and upkeep of the drainage system. With regard to Phase 2, being a larger parcel of land and being considered under the current legislation for SAB approval a hierarchal approach has been made to include SuDS techniques where possible and appropriate. The development is for only 15 units and will have a large open space area centrally to the buildings.

As infiltration is not possible the second option was to provide above ground attenuation and discharge to the adjacent watercourse. Both these facilities and options are available to this development and as they are close to the top of the hierarchal list provide a suitable surface water drainage strategy to support the development.

The drainage system has been designed for a worst event 1 in 100-year storm and includes 35% climate change. The pond has therefore been sized accordingly and will provide 284.23m³ capacity and have a discharge rate of only 2.8l/s, which is considered to be appropriate to the development, hydrobrake arrangements and to limit the effects on the watercourse itself. Presently, the site being approximately 0.65 hectares would have a Greenfield run off rate of typically 3.24l/s. Following the

design, this would result in an approximate further saving of 0.44l/s. These figures have been arranged from the basic calculation of Greenfield run off equating to 5.0l/s per hectare and running the design calculations to restrict flows to the typical Greenfield run off rate for the size of development. It is noted that the overall impermeable area following development will be in the order of 2924m² has been used to base the calculations on for the sizing of the attenuation feature.

The attenuation feature has been chosen as above ground storage as this is typically preferred to underground pipes or any other form of attenuation. Adequate space is available on the site for this feature and will provide additional benefit for local ecology. The pond and private areas outside of the domestic property boundaries will be placed with a suitable management company who will visit the site on a regular basis to cut grass and make inspections of pipework, headwalls, manholes and undertake any necessary cleaning, clearing or other maintenance deemed necessary to ensure that the drainage system operates to its maximum capacity.

Attached here to is a set of drawings which show the drainage system, site layout and arrangements for the attenuation pond and outfall thereof. Also attached is a copy of the drainage calculations which have been prepared to size the attenuation.

As a result of the design, calculations and modelling of the drainage system, there will be no flooding for the 1 in 30 year, 1 in 100 year or 1 in 100 year + 35% climate change or any other events in between. Residual risks have been considered and allowance has been made for the estate road to fill if necessary and act as a conduit to carry surface water run off in the event of a system failure or blockage. The direction of fall will be from the rear of Phase 2 to the front of Phase 1 where an existing ditch course exists along the frontage of the site and this is where surface waters would discharge should such a scenario ever occur.

AG 18.10.19