

Predicted impact of new development at Peaslake Farm on surface water flooding and sewage system.

February 2019

Surface water drainage

There is no management of surface water on the existing site. A land drain in the form of a stream runs along the west and north site boundaries and continues through the village along Ewhurst Road (Fig.1). As there is currently a slight fall towards the north, some surface water will naturally drain toward the ditch. The remaining surface water will percolate down through the ground where it can, although the ground appears to be highly compacted in parts which will cause run off to the stream. Rain water falling onto the existing roof area appears to be uncontrolled with no guttering or downpipes to direct the flow, although the roofs of structures to the west of the site slope toward the ditch therefore draining directly into it.

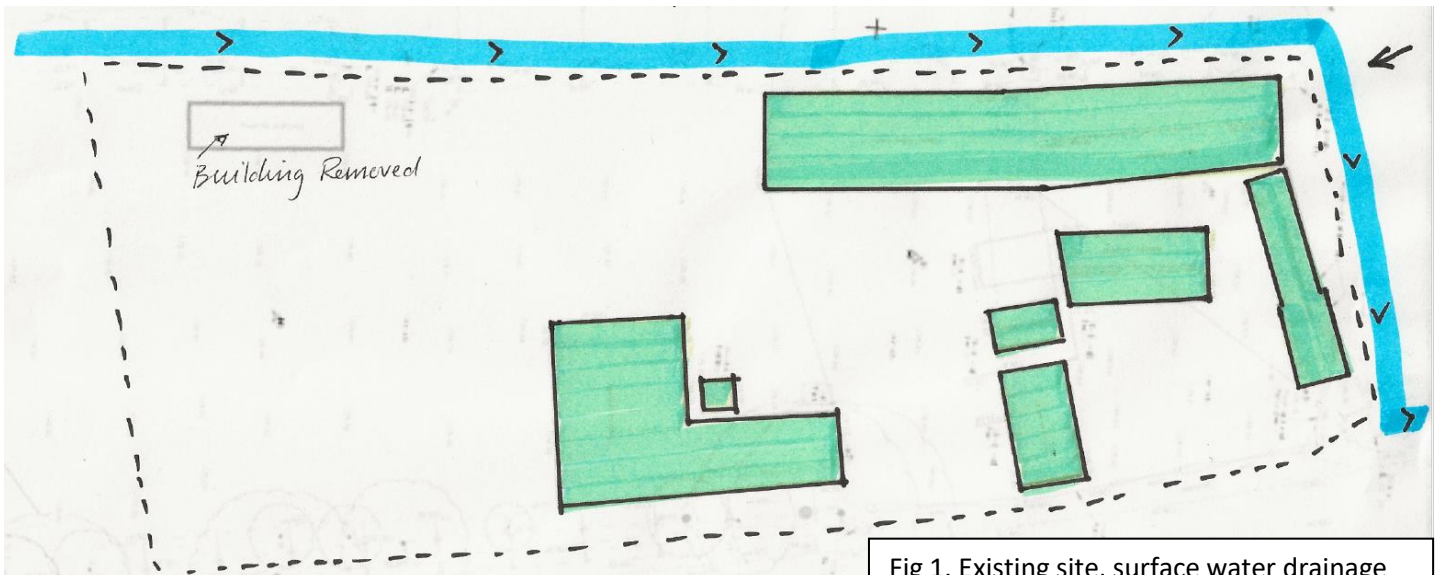


Fig 1. Existing site, surface water drainage

The proposed development will seek to control the surface water runoff and ensure the maximum amount of water possible will soak away on site with any remaining water being directed into the land drain. Greenoak has experience of the design and maintenance of sustainable drainage systems with different types of ground conditions. We will work closely with our engineering consultants to achieve the best possible solution for this site, taking into consideration the additional run off from the slope to the west and the ground water conditions. We will expect that:

- Hard and soft landscaping surfaces will be permeable to allow the surface water to soak away into the ground
- The rain water from roofs will be directed into to soakaways or to the land drain
- The land drain will be well maintained
- The foundations of buildings and the finished ground levels across the site will be carefully designed and consider the groundwater conditions.

Comparison of existing verses proposed roof area

Fig. 2 & 3 show comparative illustrations of the roof areas of the existing buildings and those proposed (as of 29 Jan 19).

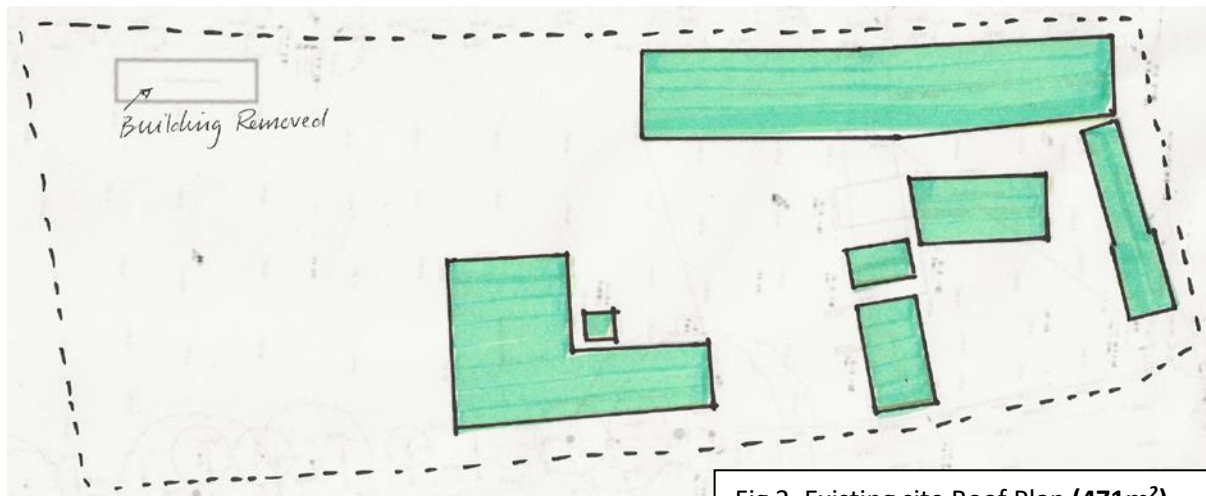


Fig 2. Existing site Roof Plan (**471m²**)

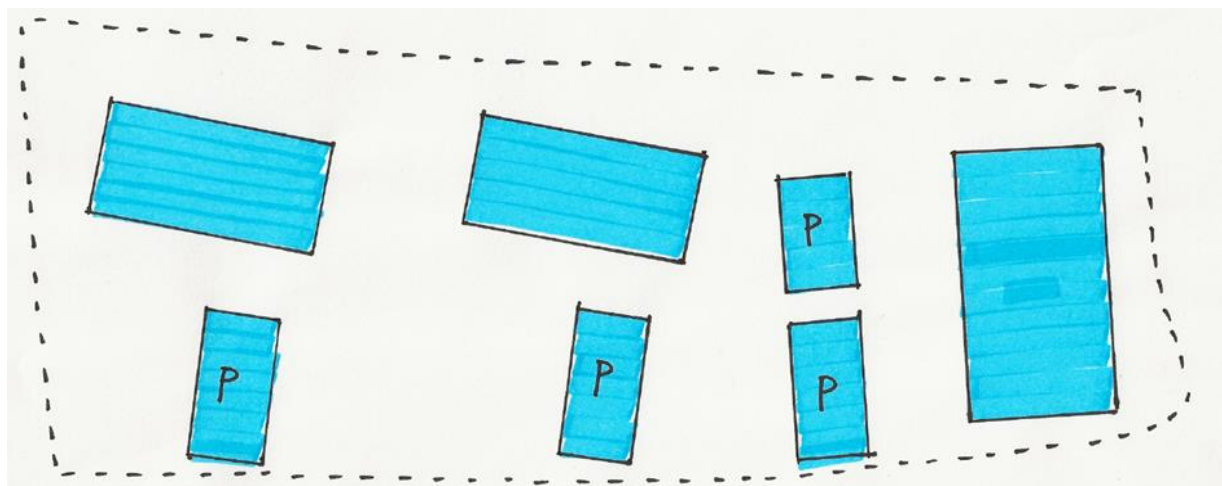


Fig 3. Proposed site Roof Plan (**557m²**)
Including parking structures (P) (188m²)
Habitable buildings (369m²)

The parking structures marked P on the plan are intended to be open sided with permeable surface underneath. The rainwater falling on these areas will most likely be directed to soakaways.

When considered as a percentage of the site overall, the existing buildings cover 21% of the site and the proposed buildings cover 25% of the site. As the surface water on the proposed development will be controlled and directed into soakaways and permeable ground where possible, the risk of flooding from surface water should be lower on the proposed development than the existing situation.

Foul Water (sewage) Disposal

The proposed new development will link into the Thames Water foul water drain which runs along Ewhurst Road. Due to previous flooding events further into the village, questions have been raised about the impact of the new development on the system.

We would suggest the following will minimise the impact of the development;

1. The scale of development
 - a. We are proposing only 8 homes
 - b. The homes are small, 4 x 1-bedroom flats (max 2 people), 4 x 2-bedroom houses (max 4 people)
2. Greenoak's experience in designing homes which have very low water use

Greenoak pays close attention to the design of plumbing systems to minimise the amount of water and energy which is routinely wasted in homes. Greenoak also uses low flow taps and shower heads and very low water use WC's. Resident satisfaction with the fittings remains very high with most noticing no difference in performance between the low flow fittings and the high water use fittings in their previous home. Rainwater is used for gardening and car-washing etc. The success of this approach is shown in research monitoring in-use consumption which shows 1/3 savings on regional averages with no special effort from residents.

There is currently no rainwater connection to the foul sewage system on the site so no potential to reduce flooding risk in that way.

Concluding Remarks

- 1) The surface water run-off from Peaslake Farm will be no worse following development and should be lower due to improved soil retention, permeability and soak-aways. The small size of this site needs to be seen in the context of the whole watershed area for this valley.
- 2) The connection of Peaslake Farm to the sewage system will have minimal impact on sewage capacity due to its small size and low water use in comparison to the substantial foul sewer drainage system catchment area of several hundred homes.

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