

Project: S208134
Reference: LTH-AKS-XX-XX-REP-C-0004-P01

11th October 2021

Land Adjacent to Littlehampton Academy – Drainage Addendum

Introduction:

A drainage strategy for the site was prepared By AKSWard in March 2021 reference LTH-AKSW-XX-XX-RP-C-00002-P03. This letter report provides an addendum to the initial report. Following the receipt of feedback from the planning officer we have reviewed the drainage strategy and are now proposing some amendments to provide additional SUDS features. The site already incorporates permeable paving with storage in tanked sub base beneath parking spaces, lined rain gardens and significant attenuation tanks.

The site layout has been driven by other design factors as described below and the drainage has been designed to enhance these features. Additional ground investigation has been carried out to improve our understanding of the stability of the ground and the feasibility of providing infiltration features on the site. As described in the drainage strategy report the only other means of disposal from the site is a combined sewer running along the southern edge of the site. Southern Water prohibit the use of overflows from SUDS features into their network

Site Layout:

The site plan layout design for Littlehampton provides a total of 112 residential units, 80 homes and 32 flats strategically placed on the rectangular site and included three areas of public useable open space (P.O.S)

Early discussions with the planners regarding the site layout resulted in a symmetrical housing layout around a central P.O.S.

The most suitable location for the P.O.S was within the centre of the site providing a link to Rosemead Park and the existing play area. This would be the green heart of the development, to be used and accessed by new and existing residents.

The site plan order of spaces was developed around this central P.O.S with a rhythm of built form starting from the West with the site entrance and flat block, followed by a smaller P.O.S and then two banks of back to back houses around the central POS.

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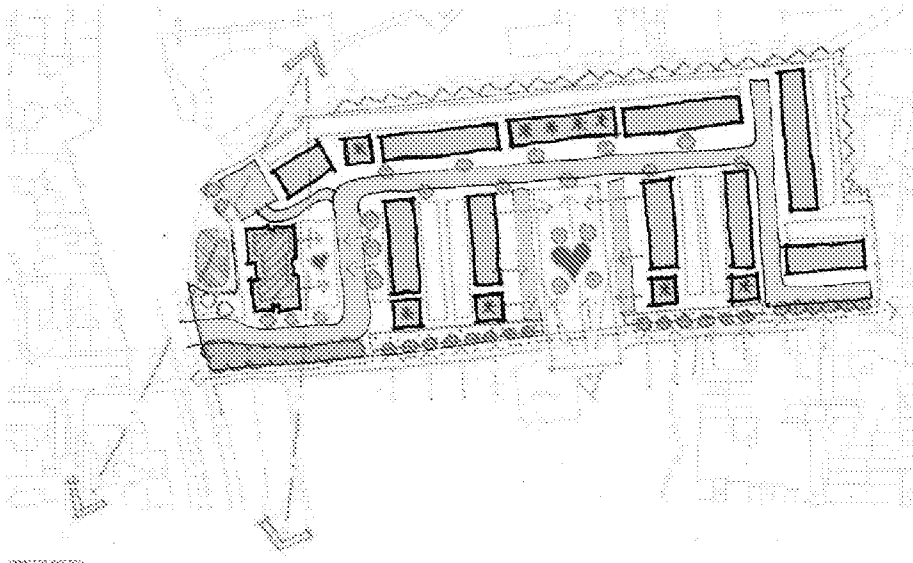


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To the North of the site a row of housing addresses the street and P.O.S. This would complete the enclosure of the P.O.S on three sides with the southern edge open to the existing park and public foot and cycleway.



If the P.O.S was to be moved further to the east of the site, the proposed landscape placemaking strategy would be weakened to the point where the new BoKlok development would feel disconnected from the existing Rosemead Park, failing to support and enhance the existing green infrastructure of the area and the relationships of green spaces and routes, new and existing.

As a result, the drainage has been designed to optimise the use of SUDS within the proposed layout.

Ground Investigation:

Following the additional testing as described in the letter report prepared by Leap Environmental dated 20th September. There are limited areas and depths where it is identified that soakaways may be feasible, mainly to the east of the site.

It should be noted that the results of the ground investigation will need to be reviewed following further testing in the winter months. A copy of the Leap Environmental report is attached.

Revised Drainage:

The ground investigation indicates that there is a possibility of soaking into the top of the chalk. Groundwater monitoring to date indicates that the groundwater level is close to the top of the chalk. Subject to the agreement of the Environment Agency this can be used to soakaway water where there is a low risk of contamination. As such the intention is to connect this to sealed roof drainage systems so that there is little chance of pollution entering the chalk.

In addition there is a sand layer below the clay to the eastern end of the site. This is identified as being fairly loose material and so of limited capacity requiring any water to be infiltrated in a diffuse manner. This layer is around 1.5m below ground and so is not suitable for construction of conventional porous paving. However it has been possible to introduce a trench beneath the car parking either side of the public open space which is sufficient to drain the porous paved area in this location during all events required.

In addition we looked at whether any infiltration features could be provided elsewhere to the north and east of the site. The small parking area in the north east corner was considered as a possible location for a further soakaway. There is insufficient space to put the trench 5m from the buildings which would be necessary given the loose nature of the sand as the space is also needed for attenuation and services.

The revised layout drawings and calculations for the infiltration trenches are attached to this document. The calculations for the trench beneath the parking spaces show a small amount of flooding in the 1 in 100year return period event with 40% allowance for climate change but this will be contained within the permeable sub base beneath the spaces and so there will not be any surface flooding in this event.

Conclusion:

The additional ground investigation we carried out allowed the introduction of additional SUDS features, with runoff from 29 parking spaces and the rear part of 17 roof areas to be infiltrated into the ground. Although the available capacity for infiltration limited the amount that could be dealt with in this way there will be benefits in terms of reduced volume of run off from the site into the combined sewer and increased groundwater recharge.

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Attachments:

LLA-AKSW XX XX DR C 9201 P06
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Microdrainage Calculations
Leap Environmental report