

Technical Note

Planning Condition 18 – Surface Water Drainage

Berewood, Waterloooville, Southern Access Junction

Project Number: 24314
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Prepared for: Grainger Plc

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1. Proposed Surface Water Drainage Scheme

1.1 Introduction

1.1.1 The scheme is located at the Ladybridge Rd/London Rd junction in Waterloooville and aims to improve the Southern Access junction as part of the Berewood residential development. Markides Associates have been appointed by Grainger plc (the Client) to carry out a Section 278 design for the highway improvements, including a surface water drainage design.

1.1.2 As part of this appointment, Markides Associates have prepared this technical note to aid in the discharge of pre-commencement planning condition 18 relating to planning application 10/02862/OUT which states:

Prior to the commencement of each reserved matters area a surface water drainage scheme, based on sustainable drainage principles and an assessment of the hydrological and hydro-geological context of the development, shall be submitted to and approved in writing by the Local Planning Authority. The drainage scheme for each reserved matters area shall be implemented prior to the completion of each reserved matters area and thereafter managed and maintained in accordance with the approved Phased Area Strategy. Information regarding the design storm period and intensity, the method employed to delay and control the surface water discharge from the site shall be included in the scheme.

1.1.3 Please refer to the decision notice, dated 10th April 2012 for the full wording.

1.1.4 The objective of this Technical Note is to provide the information requested for this particular reserved matters area to accompany the proposed surface water drainage plans prepared for the S278 application.

- 1.1.5 Refer to Markides Associates drawings listed below for the proposed surface water drainage design, noting that the drainage shown on the eastern side of Sheet 2 relates specifically to the Section 278 application and is not relevant to the discharge of condition 18.

- 24314-MA-XX-XX-DR-C-0501-S4-P02 – Proposed Surface Water Drainage Sheet 1
- 24314-MA-XX-XX-DR-C-0502-S4-P02 - Proposed Surface Water Drainage Sheet 2
- 24314-MA-XX-XX-DR-C-0503-S4-P02 - Proposed Surface Water Drainage Sheet 3

1.2 Strategy Overview

- 1.2.1 Surface water run-off from the area of the S278 scheme which relates to the reserved matters area proposes to collect surface water run-off via road gullies. Surface water run-off will then be conveyed via a below ground gravity pipe network.
- 1.2.2 Surface water run-off from new impermeable areas consisting of the access road into the site, the diverted Purbrook Heath Road and access to Marrelswood Gardens will be conveyed into an attenuation basin where it will be attenuated prior to discharge. This is the northern network and is shown on Sheets 1 and 2.
- 1.2.3 Due to levels and space constraints, it was not possible for all surface water run-off to be attenuated in an above ground attenuation feature and therefore priority has been given to the new impermeable areas proposed as part of the scheme. Surface water run-off from existing areas of Purbrook Heath Road will be attenuated below ground in oversized pipes proposed below Purbrook Heath Road. This is the southern network and is shown on Sheets 1 and 3.
- 1.2.4 Surface water run-off will be discharged at a controlled rate based on greenfield run-off rates, into the existing surface water system to the southeast of the site.

1.3 Design Storm Period and Intensity

- 1.3.1 Surface water run-off will be attenuated for all storm events up to and including the 1 in 100-year storm event, including 40% for climate change, in line with the DEFRA Peak Rainfall Allowances Map.
- 1.3.2 The drainage has been modelled using FEH22 rainfall data for a range of storm durations from 60 minutes to 2880 minutes for storm events up to and including the 1 in 100-year plus climate change event. Please note that 15 minute and 30 minute storms were not included due to their current incompatibility with the FEH22 data as FEH22 does not provide rainfall data for storm durations shorter than 1 hour.
- 1.3.3 The critical duration was 360 minutes for the southern drainage network and 960 minutes for the northern drainage network.
- 1.3.4 The peak rainfall intensity for the southern network is 26.09 mm/hr and for the northern network it is 12.1 mm/hr.

1.4 Surface Water Control

- 1.4.1 As noted above, surface water run-off is proposed to be attenuated both above and below ground.
- 1.4.2 The discharge from the southern network is controlled to 1.4 l/s using a 50mm orifice. This is within manhole S18 on Sheet 3.
- 1.4.3 The discharge from the northern network is limited to 1.6 l/s using a Hydro-Brake (unit reference: CHE-0064-1600-0600-1600). This is within manhole S12 on Sheet 1 (and 3).