

CSB/NM/E/17066

21 July 2015

RE: BLISHAM ROAD, YAPTON

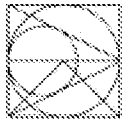
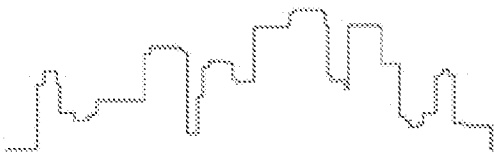
SURFACE WATER DRAINAGE STRATEGY

1.0 INTRODUCTIONS

- 1.1 This report has been prepared by Woods Hardwick LLP on behalf of Matthew Homes Ltd in relation to the surface water drainage arrangements for the land at Blisham Road, Yapton which benefits from an existing Planning Consent for 14 dwellings.
- 1.2 It is noted that there is an approved Flood Risk Assessment which supported the Planning Application which was prepared by Opus International in September 2011. This document is a key point of reference in relation to the final drainage solution.

2.0 EXISTING SITE

- 2.1 The existing site was previously occupied by Lamb Inn public house together with associated hard standings which comprised the parking for the property. The original hard coverage was significant as recorded in the Flood Risk Assessment prepared by Opus and after investigation it was concluded that at least part of the site drained to an existing storm water culvert which runs alongside Blisham Road immediately to the west of the site.
- 2.2 Notwithstanding the fact that the original Flood Risk Assessment proposed a SUDs solution with a positive outfall, it was initially hoped that the scheme could benefit from infiltration with preliminary soakage tests indicating a reasonable level of permeability which could provide the outfall for the proposed permeable paving.
- 2.3 Following a request from the Local Planning Authority, further infiltration testing was undertaken in accordance with BRD Digest 365 and the time of these coincided with a wetter period of year having been undertaken in October 2014.
- 2.4 The further BRD Digest 365 compliant test revealed that the permeability was not as good as was originally anticipated and the time associated with the first test indicated that the subsequent required three repeat test procedures could not be undertaken within a reasonable time frame.
- 2.5 Accordingly therefore, the original potential outfall for the development was investigated further and an existing 225mm pipe has been traced across the frontage passing through an existing manhole which lies in the junction of Blisham Road and Taylors Close.



3.0 DETAILED STORM WATER DRAINAGE ASSESSMENT

- 3.1 Taking the lead from the approved Flood Risk Assessment the proposal is still to incorporate a significant amount of permeable paving which will receive not only the direct run-off from the associated parking areas but will also receive connections from the rainwater pipes to the houses so that the entirety of the scheme benefits from a high level of treatment in terms of filtration as well as an appropriate level of attenuation.
- 3.2 The proposed drainage scheme is identified on the plan which has been appended to this report and there will be three permeable paved car parking areas which serve the total hard surface (including roofs) of approximately 0.186 hectares.
- 3.3 Linking the permeable paved areas there will be a piped network which incorporates perforated pipe work to collect run-off from the low points in the parking areas before ultimately discharging at a restricted rate controlled by the smallest practical vortex control device into the existing culverted watercourse in Blisham Road.
- 3.4 Micro-drainage calculations have been prepared in respect of the proposed drainage network and the results which are appended to this report demonstrate that the peak discharge for even a 100 year return period event reflecting the impact of climate change will be limited to only 3l/s. The allowance of climate change is in accordance with expectations of the National Planning Policy Framework Guidance as being a 30% increase in rainfall intensity.
- 3.5 The results do show a small escape of water at the control chamber location but as this is only around 10 cubic metres and only occurs in the worst case storm it is considered reasonable to accept that there will be a temporary storage of water within the adjacent carriageway which will not cause any inundation risk for property. This situation is of course recognised as being acceptable in National Guidance since below ground networks are generally only designed to accommodate a 30 year return period event albeit that more extraordinary events need to be assessed to ensure any minor escape can be accommodated without increasing flood risk as is the case here.
- 3.5 It is considered that this provides for a robust solution for the development scheme.

4.0 CONCLUSIONS

- 4.1 The hierarchical approach which is described in the National Planning Policy Framework Guidance has been pursued and the option of infiltration discounted as a consequence of the poor permeability characteristics of the prevailing soil.
- 4.2 There being no watercourses available within the area, the solution proposed is to discharge to a piped system although it is noted that in the context of the lands previous uses, there will be a significant reduction in peak discharge post development.
- 3.3 The solution envisaged is robust in anticipating the storm return periods and climate change allowances described in the National Planning Policy Framework and it is therefore considered that the proposals should be approved in relation to the discharge of any Planning Condition.