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Our Ref: ABC/2021/084537
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Application No: 21/00790/AS

Location: Land between Woodchurch Road and, Appledore Road, Tenterden, Kent

Proposal: a) Outline application for the development of up to 145 residential dwellings (50% affordable) including the creation of access points from Appledore Road (1 x all modes and 1 x emergency, pedestrian and cycle only), and Woodchurch Road (pedestrian and cycle only), and creation of a network of roads, footways, and cycleways through the site. Provision of open space including children's play areas, community orchards, sustainable urban drainage systems, landscape buffers and green links all on 12.35 ha of the site. (Save for access, matters of appearance, landscaping, layout & scale reserved for consideration') b) Full planning permission for the change of land use from agricultural land to land to be used as a country park (8.66 ha), and land to be used as formal sports pitches (3.33 ha), together with pavilion to serve the proposal and the surrounding area. Including accesses, ancillary parking, pathways, sustainable urban drainage systems and associated landscaping.

Thank you for your consultation on the above referenced planning application.

Further information has been provided to respond to our consultation response on 8 June 2021 including complete Appendices I and J as well as greenfield runoff rate calculations. For ease of reference, the comments below refer to the latest pdf versions of the extracts of the appendices.

The Flood Risk Assessment states that the existing total site area is 23.34 ha, of which it is based on the indicative layout to result in 3.184 ha becoming impermeable (Chapter 9, FRA). The site has three existing outfalls. The site is currently crossed by a number of ditches with ponds that receive surface water flow from a developed area to the north, as well as serving the undeveloped site area. These are shown with the existing features on drawing Existing Ditch, Ponds and Surface water Drainage Features in Appendix J1. The catchment per outfall is shown on drawing Overland Flow Routes and Catchment Areas in Appendix J2.

Catchments 1 through 5 contribute to the three outfalls to the south towards Appledore Road. The existing ditches which cross the site direct flows to these outfalls: currently Catchment 1 and 2 contribute to outfall 1, catchment 3 to outfall 2 and catchment 4 and

5 to outfall 3. We have not provided a review of catchments which are not affected by proposed development and will constitute the country park as they remain unchanged.

Our pre-application discussions with the applicant did highlight the contribution from the public sewer system from the north. A separated public surface water sewer which is located in Eastgate Road crosses a private residence on Woodchurch Road to contribute to a ditch on the northern area of the site, which would contribute to the current outfall at 13 Appledore Road.

The proposed development will result in control of surface water from developed impermeable surfaces for all rainfall events up to the 1 in 100 year plus 40% climate change adjusted rainfall.

Kent County Council as Lead Local Flood Authority has the following comments:

1. The applicant has provided Microdrainage network analysis (Appendix I) which provide only a summary of critical results for the 1 in 1 year, 1 in 30 year and 1 in 100 year plus 40% climate change adjusted rainfall event. Summary of impermeable areas per node has not been provided for ease of reference and review. This information is sufficient to demonstrate the provision and details for the cellular storage, porous car parks, swales and other attenuation and discharge controls within the proposed drainage system.
2. However, the summary of critical events tables are not sufficient to understand the operation of the proposed drainage system. Though this may not be significant, flooding appears to be indicated within Network 1 at the last two manholes for the 1 in 30 and the 1 in 100 year plus 40% rainfall events. Further information is required for all three networks for the range of rainfall events including the 1 in 100 plus 20% climate change event.
3. The off-site contribution from north of development site connects at Node S17 (Appendix J4, Proposed Surface Water General Arrangement Sheet 1 of 2). The immediate drainage lengths below this outlet are retained as open channels, whereby retaining capacity for the flows which are contributed into the drainage system. Though a connection is shown on the drainage drawings, the Microdrainage calculations do not appear to account for an off-site contribution through an input hydrograph at Node S17 or contributing area for Pipe number 3.000.

It is appreciated that we may have overlooked something in the way that this is modelled but we would seek clarification on how this contribution to the drainage system is accounted. The concern is that there are culverted sections downstream in this network which would have to accommodate this flow. The outlet is controlled to discharge at 5 l/s so any attenuation provided within the system would have to accommodate an additional volume of water.

4. Outlet 2 discharges to an existing culvert at Node S15. Flows are attenuated prior to S15 by a hydrobrake manhole at S14 to a discharge rate of 10.2 l/s. This outlet also receives surface water flow from the retained ditch channel represented by pipeline length 1.008 through to 1.011 (Appendix J3, Proposed Surface Water General Arrangement Sheet 2 of 2). No areas are noted as contributing to these channel lengths. Though the channel lengths are retained

at the current capacity, the network modelling indicates a control at 1.012. Therefore, there is a concern that additional contributing area will impact the operation of the channel. The Microdrainage network model results are not sufficient to demonstrate the operation of these drainage elements.

5. At pre-application discussion we had informed the applicant that integrating any drainage provision with the existing ditches that the impermeable areas for the new development would be that which was managed and controlled with discharge to the existing watercourse system. However, the development layout crosses the existing ditch system as well as providing for diversion of surface water.

It is not clear that the positive drainage system serving the impermeable areas (roads/dwellings) will not also receive surface water flows from permeable areas (green space). In addition, the proposed flow controls are placed in line (ie. within the piped network) at the outlets. This in effect is controlling all surface water contributions from the site area.

It would be beneficial if:

- a) an impermeable areas plan is provided and a review undertaken against ground levels to confirm contributing areas;
 - b) a contributing area table is provided within the Microdrainage results;
 - c) the existing areas contributing to current outlets are compared to proposed areas to confirm that all catchment areas are accounted for which may contribute to surface water flow at each outlet; and,
 - d) a table was provided which states pre- and post-development discharge rates for the entire site, for each catchment, for each of the outfalls to demonstrate the reduction and controlled discharge to Appledore Road.
6. A Critical Hydrological Drainage Features drawing (Appendix J8) shows the location of proposed attenuation ponds and swales/ditches. It would be beneficial if this drawing also included the ditches which will be retained and form an active contribution to surface water conveyance.
 7. The housing layout is shown on the surface drainage layout drawings. In several instances, house footprints are shown over the top or in close proximity to the retained ditches. This needs to be reviewed as it would not be accepted. Usually we would recommend a maintenance buffer of 5 to 8 m.
 8. We are aware that concerns have been raised as to the proximity of some drainage features on the boundaries with other residential development. Adequate separation distances appear to have been provided for maintenance purposes. In relation to any increased water logging, it is anticipated that engineering design can mitigate any potential impacts. It would be recommended that this concern is addressed to the applicant for a considered response.

The construction of a positive drainage system will result in a reduction of surface water peak flows to the outlets in Appledore Road. In controlling surface water flows from impermeable surfaces to 4 l/s/ha there will be a reduction in final outflows; therefore the final outcome is expected to provide a significant benefit to surface water flows downstream.

The current lack of clarity for the management/contribution of greenfield areas that will remain after development still needs to be addressed. It is not stated clearly as to the level of reduction and that all surface water contributing areas are accounted for in the design.

We would therefore recommend that further information is provided to address the comments above before this application may be determined.

This response has been provided using the best knowledge and information submitted as part of the planning application at the time of responding and is reliant on the accuracy of that information.

Yours faithfully,

Bronwyn Buntine

Sustainable Drainage Team Leader
Flood and Water Management