

30780 – Maple Road, Curry Rivel
Proposed Residential Development
Executive Summary - Surface Water Drainage Strategy

On-Site Drainage

The surface water from the proposed development will be attenuated in a pond in the south west corner of the site. To reduce the capacity requirements of the pond, additional attenuation will be provided in geocellular storage areas on site.

The surface water from the north of the site will be collected by pipework and conveyed to oversized 600 \varnothing pipes in the north of the site where it will be attenuated prior to discharge into the attenuation pond.

The surface water from the southern half of the site will drain into two geocellular storage areas in the east and west. The east storage will discharge water to the pond at a maximum rate of 2l/s and the west storage will discharge at 4l/s.

The attenuation pond will utilise a hydrobrake to discharge the stored surface water into the existing watercourse at a maximum rate of 3.7l/s during the 1:100 year + 30% climate change event. This discharge rate is a 14% betterment on the existing 1:100 year greenfield discharge of 4.3l/s. As such, the development will not have any negative impact on the existing flood risk in the area. As this ditch currently lies within the site boundary there is a right to discharge. This drainage strategy has been accepted by the Environment Agency.

The on-site attenuation pond will be excavated to 1.3m with a deeper small area to create a permanent wet pool. The pond will be lined with an impermeable membrane to prevent water entering or leaking from the pond; this is usually done using a polypropylene liner or puddled clay. The pond will then be surrounded by an earth bund with a freeboard level to account for any wave action and climate change effects; in addition the pond has been designed to a 100 year level with 30% for climate change, ensuring adequate capacity. There is also a maintenance path around the pond to ensure it is accessible at all times.

Off-Site Drainage

Downstream the ditch enters a 600mm culvert with an estimated capacity of 261 l/s. This receives water from 19ha of land, including 1.3ha of the proposed development. It is estimated that the 1 in 100 year flow in the ditch is less than 150l/s and so it can be accommodated by the culvert. In comparison, a similar catchment area to the west of the site drains to a smaller 150mm diameter culvert.

Further downstream the water enters a 500mm twin pipe culvert under the A378. Discharge from the proposed development will be reduced, as such the risk of flooding will not increase. The applicant has also offered to conduct a CCTV survey and clear the downstream culverts to A378 to remove blockages and increase capacity.

gary gabriel associates
consulting structural & civil engineers



Prepared By: Olivia Dent

Approved By: Matt Hayes