

A24 BROADBRIDGE HEATH JUNCTION

Background

Having identified a potential construction problem that was associated with the point drainage proposal, contractors Breheny came to Marshalls to help find a solution.

A conflict between the point drainage system and ground stabilising Geogrids meant that the embankments for the raised roundabouts could become unstable. Point drainage requires a much deeper construction to provide adequate falls within a closed pipe system, this means that these would pass through the Geogrids reducing structural stability. The ideal solution to avoid this scenario was to use linear drainage which has a much shallower construction depth, as this was a highway scheme a Combined Kerb & Drainage system was most appropriate.

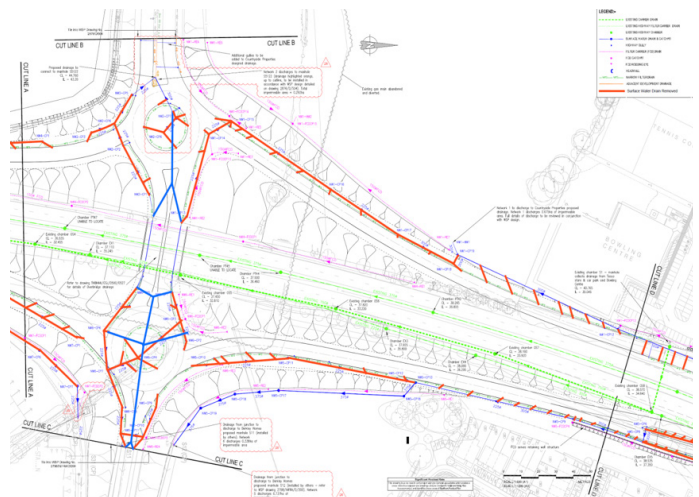
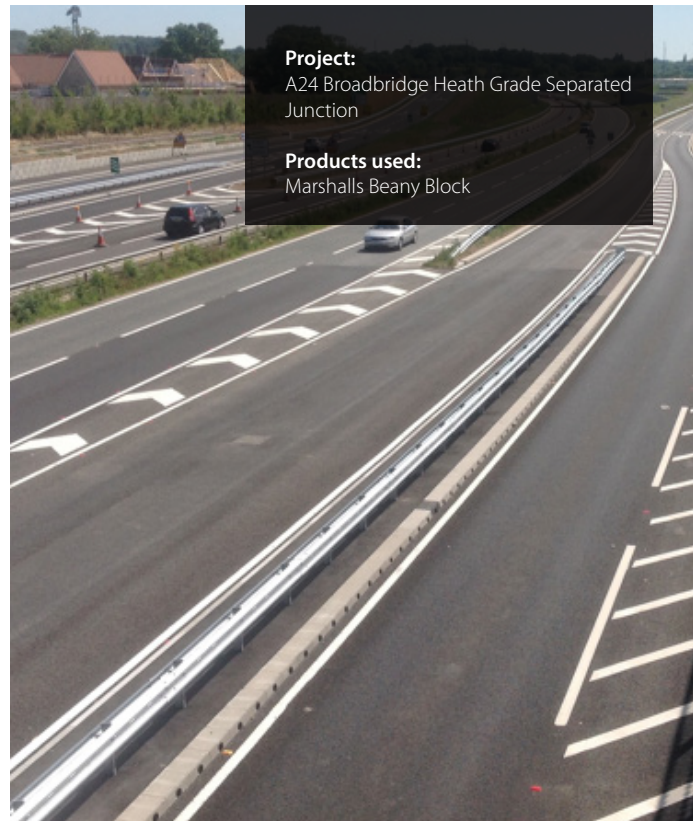
Approach

Having worked with Marshalls on a number of schemes prior to this, Breheny wanted to use our expertise to minimise overall cost. Delivering within budget whilst also improving the drainage system to be more efficient at surface water interception.

There is a perception that Combined Kerb & Drainage systems are more costly than traditional point drainage ones. But by maximising the benefits of the Marshalls Beany family, this isn't the case.

In this scheme Marshalls Free Design Service managed to identify thousands of metres of surface water carrier network that could be eliminated from the Contractors scope of works. An example of this removal can be seen in the drawing below the red lines highlight all the carrier network that was removed.

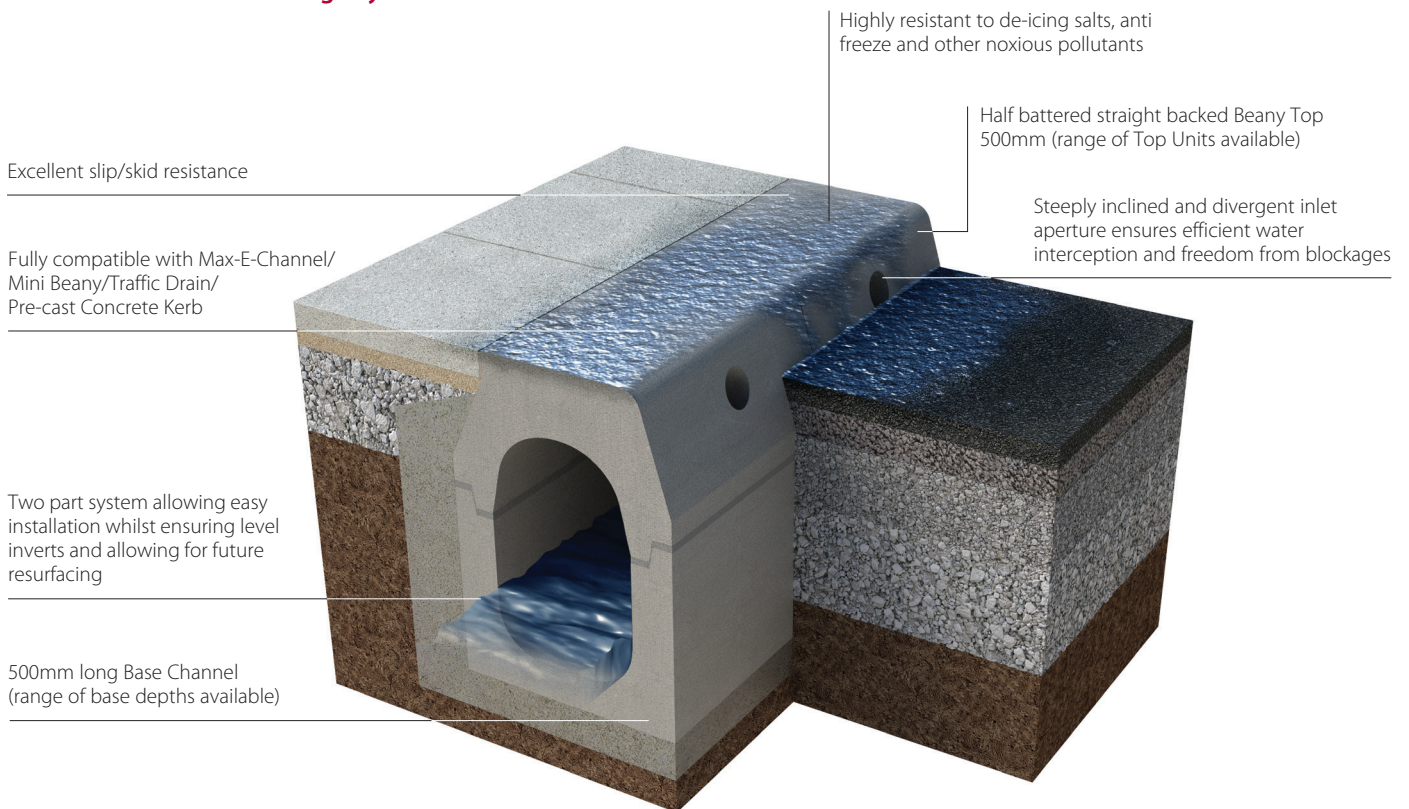
Marshalls Beany Block was chosen due to its high capacity, being a two part system it is highly flexible allowing water to cross under roads in its cover plated format. This was critical in order to minimise the carrier network and was why we ruled out using our smaller capacity two piece system MiniBeany or our one piece system Mono Beany.



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Beany Block

Combined Kerb and Drainage System



Outcome

Breheny found that the Beany Block gave them a significant programme advantage. Whilst the system itself takes longer to install per metre, due to the sheer volume of carrier network removed and that the highway foundations could be installed much quicker it was time beneficial.

By Engaging with Marshalls early in the design phase Breheny were able to avoid costly construction issues later on in the project which was opened ahead of schedule on the 16th June 2015, works had not been due for completion until much later in the year.issues later on in the project which was opened ahead of schedule on the 16th June 2015, works had not been due for completion until much later in the year.