KENT URBAN CONCRETE BAY REPLACEMENT

A HIGHLY EFFECTIVE SOLUTION

For some time, a group of concrete urban and residential streets in Kent County Council's area have proven to be a maintenance headache for the local authority and their main contractor Eurovia.

For various reasons due to the condition of the underlying surface, spot repairs have proven to be ineffective, costly and short-term with bad weather and heavy vehicle damage quickly causing more problems to repaired areas. Potholes, fretting and large-scale cracking not only cause potential liabilities from motorists damaging their vehicles but also lead to traffic chaos and residential complaints.

So it was with great interest to Eurovia in the summer of 2017 when one of their engineers received a video of LMS Civil Solutions' respected concrete bay replacement process.

The service, which is normally provided on motorways and major routes is a particularly effective long-term solution and after a quick phone call leading to a meeting, all parties agreed that the process could be adapted and applied to an urban setting to provide a long-term solution to KCC's problems.

A particularly powerful and unique feather in the bow of LMS Civil Solutions is that combined with LMS Highways' service portfolio, the company can offer a "Kerb to Kerb" solution for the customer who also required other specialities within the scheme such as joint repairs, manhole and gully repairs and refurbishments and of course road marking reinstatement.

A decision was therefore taken to proceed with some key sites. The work commenced in late October with one of the key proving grounds being Cranborne Avenue, a residential street in Maidstone which connects directly with the busy A229.

Challenges included the heavily residential nature of the street and the fact that there was limited space due the roads and paths being reasonably narrow. Despite these challenges, the LMS Civil Solutions team were able to work quickly within short-term partial closures, allowing residents much-needed access to their street. That speed was achieved thanks to the team's refined processes including in part, the speed of removal of the existing damaged surface. A vacuum-lift system is employed allowing larger sections to be removed as one complete piece and lifted straight onto a disposal truck. Smaller sections are removed using a grab and then just like the motorway version of the process the team immediately prepares the emptied area for the concrete pour. A waterproof membrane and reinforcing rebar is added and connecting dowel holes drilled.

The concrete formula is different to that used on trunk roads and has been chosen to specifically suit the urban environment. LMS Civil Solutions worked closely with Cemex to ensure a concrete product was used that provided the maximum combination of value for money and longevity.

Up to 35 linear metres full width can be replaced within a single day with trafficking possible after just 24 hours. The new surface benefits from an expected service life of 25 years.

Eurovia and Kent County Council were very pleased with the results and are evaluating the solution for several other sites in the area. Council engineers visited Cranborne Avenue during the works and were particularly impressed with the speed of removal due to the vacuum plate system.

"We were very impressed with the work at Cranborne Avenue and believe residents have been quite satisfied by the way this was handled. Not only was the work completed efficiently, on-time and on-budget but noise was kept to a minimum and it's clear to see that the LMS Civil Solutions team have refined their processes very well to keep things on track. It is of particular value to us and our customer that LMS were able to cope with all the requirements on site and to provide a single point of accountability that works well."

Dave Gibbins – Contracts Manager Eurovia.

The experience of working in the residential environment and the nature of the underlying conditions have given Paul Burton who heads up the LMS Civil Solutions team, much food for thought.

"The specific experience of the condition of the surface from this site gave us some ideas of ways we could improve the removal process and make it even more efficient. Consequently, we're testing a brand-new bucket which will be a UK exclusive for LMS Civil Solutions. This will enable us to remove a mixture of solid and broken concrete without the need to continuously change buckets."

Paul Burton – Project Manager LMS Civil Solutions.

Throughout the Cranborne Avenue project, residential engagement was excellent with residents taking an interest in the methods used with great feedback being received regarding the low noise levels, fast turnaround and friendly accommodating attitude of the team on-site.

Our Urban Bay Replacement process will resolve your concrete residential street issues with a 25 year expected service life.