

Low Carbon case study - Love Lock Tree

Experts from the University of Derby's Institute for Innovation in Sustainable Engineering (IISE) have helped a small Derby firm to develop 3D models of its new invention: The Love Lock Tree.

These 'trees' are steel structures, in the shape of an evergreen tree, designed to safely hold thousands of padlocks as memorials or tributes, colloquially known as 'Love Locks'.

This support was provided at no cost to the business thanks to grant funding from the European Regional Development Fund via D2N2.

'Love locks' are padlocks inscribed with a message of love that are attached to a bridge, railing or other public structure and appear all over the world, most notably the Pont des Arts Bridge in Paris which has become a magnet for these tributes.

Unfortunately, love locks can have a detrimental impact on the structures they are hung on due to the excess weight and rust.

Ken Massingham, a retired engineer, and his daughter Caroline, a graphic designer with her own company, C' Creative Ltd have solved the issue by designing the Love Lock Tree.



The team at IISE set about bringing the Love Lock Tree to life by transforming their 2D drawings to 3D (a process known as rendered drawing) and creating a 3D model of the design.

The work was undertaken free of charge thanks to the Time 2 Innovate and Low Carbon project, a partnership run by the University of Derby, Derby City and Derbyshire County Councils, which was part-funded by the European Regional Development Fund.

“Before, I was lugging around a very cumbersome prototype and a sketch of the tree to show potential customers,” explains Caroline, who now heads up the business.

“Now, thanks to the University, we have these very professional and lightweight 3D models, which help me demonstrate what the trees actually look like from all angles.”

“As a result, people become more engaged. We can remove and add pieces to the model, so we can show the different options. In addition, the rendered drawings the University created for us can be coloured, to show the clients what the trees would look like in their branded colours.”

Love Lock Trees support the low carbon agenda due to a slide-on cladding panel system which is made from 90-100% recycled stock.

In fact, the whole cladding panel feature is recyclable and allows customisation without the need to paint the structure.

The foundations of the large Love Lock Tree penetrate just 350mm into the ground, which in comparison to a traditional deeper foundation, is expected to offer a reduction in the embodied carbon dioxide of the product.

Visit the [University of Derby's DE-carbonise webpage](#) for more information on their low carbon ERDF programme.

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