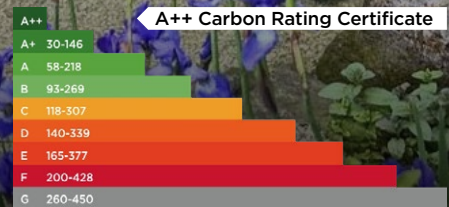




# Low carbon concrete for Chelsea Flower Show installation

66% reduction in CO<sub>2</sub>e



## Background

The client was exhibiting at the Chelsea Flower Show. This year, for the first time, the Royal Horticultural Society (RHS) commissioned Nicholsons to complete a Green Garden Audit to ensure a reduced carbon footprint and minimised environmental impact of the ‘Show’ and ‘Sanctuary’ categories at the Chelsea Flower Show. The Green Garden Audit covered a range of sustainability criteria including waste; biodiversity and ecology; and water and air. However, the key challenge was to reduce carbon emissions through alternative construction methods and materials, of which cement is significant contributor. For the second year running, contractor Junko turned to Tarmac to develop a concrete solution for the occasion.

## The challenge

The client JUNKO had designed a pond feature as part of their exhibit at the 2024 Chelsea Flower Show that had a concrete base. In line with the ethos of the stand theme they aimed to minimise the environmental impact and carbon footprint as much as possible. The client specified a C30 concrete to deliver the required strength. Given the limited time window for construction of the display garden, the chosen concrete would also need to gain strength rapidly and be capable of receiving foot traffic just 12 hours after the pour so that the rest of the exhibit could be completed. They approached Tarmac’s London and South East Readymix team for advice on the best choice of concrete mix to meet their requirement.

## Our solution

After working with the client to understand the requirement, Tarmac’s London and South East Readymix team were able to recommend optimised mix designs that met the performance requirements but also delivered major reductions in embodied carbon. The CEVO AACM ultra-low-carbon concrete mix that was proposed, used alkali activated geopolymers technology and contained no cement. It achieved the 30 Newton strength, but also delivered a 66% reduction in carbon emissions compared to standard concrete using ordinary portland cement. It was rated A++, the highest band on the ICE’s Carbon Rating Certificate rating scale, chosen by Tarmac as the independent benchmark for their CEVO range of low carbon concretes. This makes it one of the most carbon efficient concrete solutions on the market which can assist with driving the transition to net-zero by 2050.



## Results and benefits

Given the profile of this work and the limited time window for completion, it was critical that the chosen mix performed as expected. A test pour was carried out at Tarmac's London East Silvertown Concrete Plant. Following the successful trial, concrete was supplied using an Ace Minimix truck, used for improved access and manoeuvrability when delivering small loads of concrete. The mix delivered the strength, carbon saving and working time that the client needed but also allowed early trafficking to minimise delays in the build programme. The landscape artist Kazuyuki Ishihara won the Best Artisan Garden award at the Chelsea Flower Show. Tarmac were proud to help their client contribute to the 28% carbon reduction achieved by the 2024 Chelsea Flower Show. The carbon

savings for the project were fully documented on detailed carbon footprint calculations to help the project delivery team record the total emissions for the building.

*Millie Field, Tarmac's External Account Manager said "It was fantastic to be a part of this prestigious occasion and contribute to the drive for sustainable innovation and collaboration. CEVO allows us to work with customers to provide sustainable alternatives to traditional concretes and transparent carbon information in order measure positive impact".*

## What is CEVO?

### Low carbon concretes made simple

CEVO concretes offer low carbon alternatives to traditional concretes. CEVO is our commitment to supplying concretes that offer transparent carbon savings and easy to understand performance grading based on the amount of carbon taken out of the design using replacements, limestone fillers or a Geopolymer/Alkali Activated solution. We align our current range of CEVO, low carbon concretes, to ratings published by the ICE, endorsed by the Green Construction Board in the Low Carbon Concrete Route-map. A, B, C to G gradings similar to efficiency bars that we see on electrical items across our daily lives.

For more details visit: [tarmac.com/lowcarbonconcrete](https://tarmac.com/lowcarbonconcrete)

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