

The Whale on the Wharf (Skyscraper), London

PROJECT TEAM

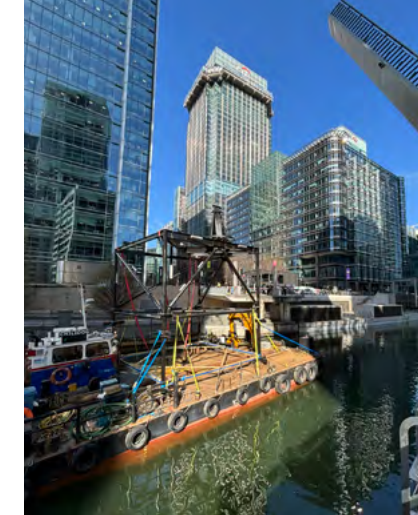
Artist: StudioKCA

Structural Engineer: Thornton Tomasetti

Geotechnical Engineer: A-squared Studio

Main Contractor: DiveCo Marine Ltd

Client: CWG



The Whale on the Wharf (Skyscraper) is a 12m-tall public artwork permanently installed within the dock at Wood Wharf, Canary Wharf. Depicting a whale breaching from the water, the sculpture is clad with five tonnes of plastic recovered from the Pacific and Atlantic Oceans, transforming marine waste into a powerful environmental statement.

The illusion of the whale emerging from the dock is made possible by a submerged structural steel frame. Although the sculpture is relatively lightweight, its asymmetric pose and wind loading on the cantilevered spine generate significant tension within the supporting system. These forces are transferred through the steelwork into concrete foundations below the water.

The dock location created exceptional engineering and installation challenges. The sculpture stands in approximately 5m of water, directly above underground railway tunnels and close to Grade I-listed dock walls. With limited visibility beneath the surface, construction required carefully coordinated marine operations and a detailed sequence for divers, lifting equipment and the installation team.

The underwater foundations were formed using precast manhole rings as cofferdams. Steel plunge columns had to be positioned accurately within them before concrete was poured underwater. The submerged frame was protected using a marine-grade paint system combined with cathodic protection to address the demanding exposure conditions.

The 4t supporting frame was fabricated almost entirely from reclaimed steel sections recovered from decommissioned pipelines, cancelled projects, surplus stock and demolished buildings. Offsite fabrication allowed the structure to be assembled and checked before being transported by barge from Tilbury along the Thames and moored within the dock ahead of installation.

Steel was selected because it could be fabricated, transported and erected efficiently within the constrained marine environment. It also provided a compatible connection with the sculpture's original steel spine. Once the supporting frame and spine were installed, reclaimed plastic panels were attached to complete the artwork.

Circular-economy principles also informed the foundations. The concrete incorporated spent coffee grounds collected from local cafés and converted into biochar. The completed structural elements achieved total A1-A3 emissions of 10,788kg CO₂e, compared with an estimated 28,600kg CO₂e for virgin steelwork and conventional concrete. The reclaimed steel reduced its contribution from an estimated 9,829kg CO₂e to 1,593kg CO₂e.

The Whale on the Wharf demonstrates how reclaimed steel, low-carbon concrete and complex marine engineering can support an ambitious piece of public art. Its largely concealed structure combines technical innovation with a compelling environmental purpose, turning recovered materials into a memorable landmark for London's waterfront.

JUDGES' COMMENT

The Whale on the Wharf is a remarkable 12m-tall sculpture, supported by a repurposed steel structure and crafted from five tonnes of ocean plastic. Delivered through exceptional collaboration, including complex marine logistics and diving coordination, it combines thoughtful engineering, innovative low-carbon design and a compelling environmental story, setting a new benchmark for purpose-driven structures.