

Shipbuilders of Port Glasgow

PROJECT TEAM

Sculptor: **John McKenna Sculptor Ltd**

Structural Engineer: **Narro**

Main Contractor: **John McKenna Sculptor Ltd**

Client: **Inverclyde Council**



The project was procured via a design competition in 2013 for Inverclyde Council. The aim was to produce a work of public art that would pay tribute to the strong shipbuilding heritage in Port Glasgow and the workers who contributed to it, while also serving as a modern-day tourist attraction bringing people to Port Glasgow and Inverclyde. The winning design, selected through a public vote, comprises a pair of 10m-high stainless steel men in active positions about to strike downwards with their hammers, with ship hull segments around them. The completed 14t sculpture is in Coronation Park, Port Glasgow.

Initially, a scaled down version of the proposed sculpture was made in clay, which was 3D scanned and transferred into to CAD software. This was used to establish a best fit 'stick form' primary skeleton for one of the figures, from which a 3D structural analysis model was developed to design the structural elements. The primary skeleton comprises a series of circular hollow sections (CHS), with flanged bolted connections. Welded to this are the square hollow sections (SHS) and steel rod secondary elements that act as outriggers to reach the SHS tertiary

outer sub-frame that is located just under the 0.9mm to 1.2mm stainless steel faceted surface 'skin'.

Flexibility in the exact positions of the secondary frame and tertiary outer sub-frame was desirable, so exact positions could be finalised based on ease of access and buildability issues during the fabrication. As a result, the secondary and tertiary elements in the overall figure were not modelled, and instead the design was based on spacing rules that could be followed during fabrication to ensure there was sufficient structural capacity in the completed frame.

The design was completed in late 2014, after which fabrication could commence. Initially, human-sized (approximately 2m-high) scaled down accurate steel models were made, which was invaluable for identifying any buildability issues that might be encountered prior to fabricating the full-scale 10m-high figures.

Although the first figure took a long time to complete, the result was spectacular. A trial erection of the first figure was carried out in 2018, to ensure the segments successfully fitted together. Piled foundations were

installed in October 2021, the sculpture segments were transported to the site in February 2022 and erected the following month using mobile cranes and MEWPs (Mobile Elevating Work Platforms).

The completed sculpture is a spectacular addition to Port Glasgow and a wonderful tribute to the shipbuilding industry.

Judges' comment

An impressive and well executed piece of public art, which has been many years in realisation since the initial competition win. The sculpture is formed from numerous small folded/shaped stainless steel 'tiles' fixed back to a steel tube subframe, shaped to create the large forms of two shipbuilders. The finished forms have been very carefully considered and are well crafted.