Cite this article
(2023)
Award-winning papers in 2021.
Proceedings of the Institution of Civil Engineers – Engineering History and Heritage **176(1)**: 35,
https://doi.org/10.1680/jenhh.2023.176.1.35

Engineering History and Heritage

ice Publishing

Award-winning papers in 2021

Papers published in *Engineering History and Heritage* are eligible for awards from the Institution of Civil Engineers. Papers from any of the ICE journals can be nominated for several awards. In addition, each journal has awards dedicated to their specific subject area.

On Friday 14 October 2022, ICE President Ed McCann presented awards to the following papers published in *Engineering History and Heritage* in 2021. The Editorial Panel nominated their best papers and an awards committee chaired by Tim Broyd allocated the awards.

Telford Gold Medal

The Telford Gold Medal, presented to the best paper overall, was awarded to Kaminski *et al*. (2021).

Abstract

The Grade II*-listed 1960s roof to the former Commonwealth Institute consists of a central post-tensioned concrete hyperbolic paraboloid shell, typically only 75 mm thick, and is one of the few examples of large-scale concrete shell structures in the UK. After being unoccupied for a decade, in 2012, the Design Museum announced its plans to move into and redevelop the building. In order to make the space functional, the interior and foundations needed to be demolished and the entire 3100 m², 2000 t roof held up 20 m above ground temporarily while the new structure was constructed underneath. This paper explores in detail the steps taken to assess the relatively delicate existing roof structure for the change in loading and future movements in both the temporary and permanent conditions and the resulting innovative strengthening, repair and temporary works required. Limited historical drawings and papers were available, and therefore, non-destructive testing and careful intrusive investigations were used to obtain more information on the as-built details. In order to determine the structural behaviour, hand calculations were conducted to back-calculate the original design intent, and computer modelling was used to conduct sensitivity analyses of the load paths.

Thomas Telford Premium Prize

The Thomas Telford Premium Prize, presented for the best paper published in *Engineering History and Heritage*, was awarded to Cochrane and Blackett-Ord (2021).

Abstract

The cathedral in Manchester, UK, is one of the most impressive examples of a late mediaeval collegiate church in England. The cathedral has been without a permanent organ since the 1940s, and since then, there has been an aspiration to reinstate one. In 2010, the cathedral commissioned a new grander organ, almost twice the size of its predecessor and weighing approximately 15 t. It was to be positioned beneath the chancel arch, in a prominent central setting between the nave and the choir. The organ would be supported 3.5 m above ground level on a suspended steel platform concealed within the pulpitum. The challenge was to provide a platform within the constraints of not loading the mediaeval rood screen, no visible structure, no discernible deflection during the construction of the organ and with full reversibility. The steel platform was preloaded with a series of lead weights to induce the permanent deflections before the building of the organ itself was started. The lead weights were sequentially removed during the organ building to control the deflection and the load transfer to the existing Victorian cast-iron structure

Figure 1. ICE President Ed McCann with Thomas Telford Premium Prize winners Emma Cochrane and Charles Blackett-Ord

REFERENCES

Cochrane E, and Blackett-Ord C (2021) Pre-deflecting a steel platform to support a new organ at Manchester Cathedral, UK. *Proceedings of the Institution of Civil Engineers – Engineering History and Heritage* **174(4)**: 158–166, https://doi.org/10.1680/jenhh.20.00003.

Ghoshal A Henley R, Ciuffetelli N *et al*. (2021) Strengthening the 1960s UK Commonwealth Institute hyperbolic paraboloid roof. *Proceedings of the Institution of Civil Engineers – Engineering History and Heritage* **174(3)**: 113–123, https://doi.org/10.1680/jenhh.20.00010.