

Preservation and reuse of concrete hyperbolic paraboloid shells in the UK

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Abstract

During the 1950s concrete shell structures, including ‘hypar’ structures, gained a foothold in Britain’s architectural and engineering realm. Amongst the ‘hypar’ structures built during this period, those designed by Sam Scorer – Lincoln Motor Car Company Showroom, 1958, and a petrol station canopy at Markham Moor, 1959, as well as the Queensgate Market Hall, Huddersfield, 1970 [1], by Seymour Harris Architects, are some of the most iconic and representative. These structures bear witness to the technological developments in the construction sector as well as the government plans to support the economic growth of Post-War Britain. However, and as is true for most concrete shell structures in the world, these structures have dealt with the challenge of preservation and reuse in different ways, and some of them have been at risk of loss. At present, these three structures have been listed Grade II by Historic England, due to their architectural value. This paper will give account of the current use and state of these and other reinforced concrete shell structures in the UK, and it will also aim to share good practice in their preservation and reuse. This paper will have an international impact and those who will benefit from reading this paper will include: architects, conservationists, engineers, historians and policy makers.



Figure 1. (left) Brayford Pool Restaurant, Lincoln - Former Motor Company Showroom and (right) the Queensgate Market Hall, Huddersfield

References

- [1] M. Mendoza, “Construction of the 21 inverted hyperbolic paraboloid concrete shell to roof the Queensgate Market Hall, Huddersfield,” in *Building Histories: the Proceedings of the Fourth Annual Construction History Society Conference*, Cambridge, UK 7-9 April 2017, J.W.P. Campbell, N. Baker, M. Driver, M. Heaton, Y. Pan, T. Rosoman, M. Tutton and D. Yeomans, eds., Construction History Society, 2017. pp. 449-456