

# Former BBC Television Centre, White City, London

## Project case study



### Product

Hanson concrete incorporating Regen GGBS

### Volume

48,000 cubic metres

### Client

Stanhope

### Main contractor

MJ Gallagher

### Specialist subcontractors

Byrne Brothers Formwork Ltd;  
Expanded Structures Limited

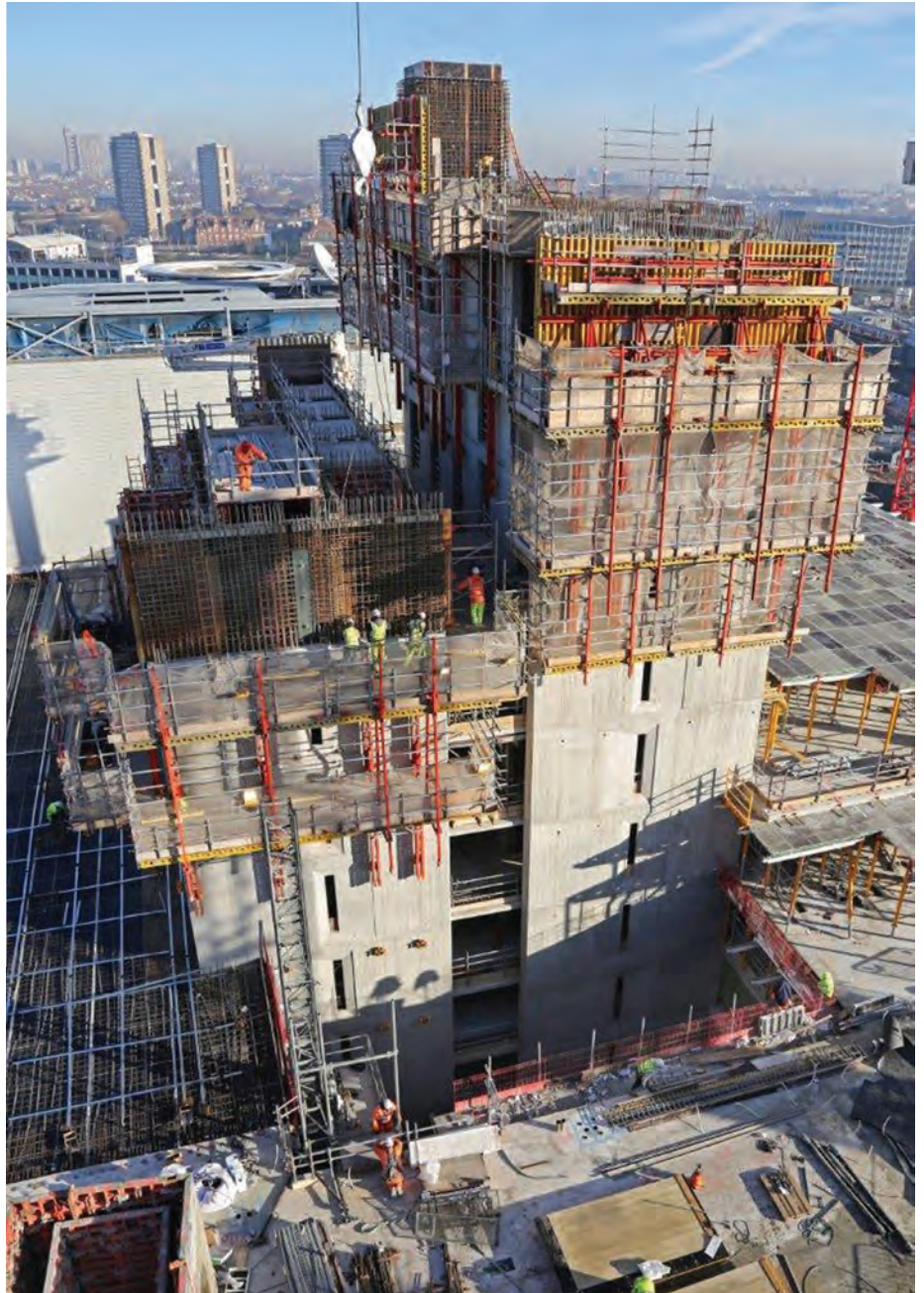
### Overview

The iconic former BBC Television Centre in West London has been transformed into a mixed-use development by capitalising on the versatility of concrete. The material has been used to produce intricate elements and finishes through a variety of different techniques, including the replacement of the central fountain using a 'sparkling' self-compacting concrete.

### Project description

The Grade II listed, former BBC Television Centre at White City, is one of the most recognisable buildings in the capital. It was opened in 1960 and used by the BBC until it was sold to developers in 2012.

The original structures are in a distinctive 'question mark' design featuring a central circular block surrounded by an outer ring. The design of the new £400 million development is sympathetic to the original but amendments have been made to its layout to facilitate the changes in use.



The redevelopment of the 145-acre site has been parcelled into three 'blocks': two are the refurbishment and extension of the existing structures and the third is an entirely new development.

Concrete was chosen as the primary construction material to realise the architect's vision for the project. Its versatility made it the ideal material for changing the layout and extending the

### Hanson UK

14 Castle Hill, Maidenhead, Berkshire SL6 4JJ  
T: 01628 774100

W: [hanson.co.uk](http://hanson.co.uk)

E: [enquiries@hanson.com](mailto:enquiries@hanson.com)

T: [@Hanson\\_UK](https://twitter.com/Hanson_UK)

## Former BBC Television Centre, White City, London

Mixed use redevelopment of iconic building



existing structures as well as constructing new ones on the site.

The concretes were used for many applications including post tensioned slabs, jump form vertical elements and concretes designed specifically for the mass pours that formed the slabs on which the superstructure sits. Each concrete incorporated Regen GGBS (ground granulated blastfurnace slag), a cement replacement product which reduces the embodied CO<sub>2</sub> of the concrete: on this project by approximately 50 per cent.

A key element of the refurbishment works was the replacement (by casting in-situ concrete) of the central obelisk-style fountain. The structure, which is made up of a bowl and obelisk, has been faithfully recreated using a self-compacting, water tight concrete that was specifically developed and contained a mica sand that, when abraded, provided a shimmer to the element offsetting the golden statue at the top of the obelisk.

The concrete mix for the Helios obelisk and bowl was trialled for a considerable period of time both in the lab and on-site to ensure that the desired amount of 'sparkle' was achieved from the West Country granite aggregate fines after post striking surface treatment was applied.

A 50/50 blend of the granite fines and Hanson's normal fines was required to ensure stability in the self-compacting mix. Bespoke, single use, formwork was used to achieve the geometry of the Helios elements; the obelisk being an 11-metre-high slender tapering steel form. The bowl formwork was a series of epoxy coated polystyrene composite segments, assembled on site with an inverted top shutter which produced a seamless profile to the bowl soffit.

The exposed concrete elements of the new building structure are made up of rebated openings and wood textured finishes, created by the use of bespoke formwork and form liner. The wooden effect finish imbued these elements with

a tactile nature not usually associated with concrete structures. To facilitate this, the composition of the concrete had to be balanced to provide enough mobility to allow ease of placement; the ability to fill all of the interstices created by the form liners; and cohesive enough to withstand any segregation.

The refurbishment of the whole site was completed in 57 weeks and a total of 48,000m<sup>3</sup> of concrete was placed on time, at an average rate of 850m<sup>3</sup> per week. The project was completed within the short construction timescale desired, with all concrete placed within 12 months. Due to the degree of complexity of some of the elements of the project – and the constraints of working within a busy city centre site – close collaboration between the architect, client, specialist sub-contractors and supply chain was necessary.