

CONSTRUCTION MANAGER

APRIL 2018
For members of the CIOB

BRUTALISM REBORN

THE RESTORATION OF
PRESTON BUS STATION

 CIOB

constructionmanagermagazine.com



A postcard from Preston: the bus station in the 1970s

NEILY PEELE

A BRUTALIST REBIRTH IN PRESTON

PRESTON BUS STATION, AN ICON OF BRUTALIST ARCHITECTURE, IS BEING RENOVATED BY LOCAL CONTRACTOR CONLON CONSTRUCTION AND ARCHITECT JOHN PUTTICK. **WILL MANN** MEETS THE PROJECT TEAM DELIVERING THIS UNUSUAL HERITAGE PROJECT

Preston Bus Station is, to its many admirers, a masterpiece of brutalist architecture. Designed by Keith Ingham and Charles Wilson of BDP, engineered by Ove Arup and Partners and built by John Laing, the building was completed in 1969. With its signature “scallop shell” facade, the smooth finishes the result of precast GRP mouldings, it is probably Preston’s most famous building. But it is not to everyone’s taste.

As recently as 2012, the bus station was earmarked for demolition by Preston City Council, before it was saved following a campaign led by, among others, the Twentieth Century Society. In 2013, it was awarded Grade II listed status – the third time it had been applied for – and ownership transferred to Lancashire County Council (LCC).

Since then, the local authority has been progressing a multi-phase, £24.3m redevelopment of the site. In 2015, following an international competition,

New York firm John Puttick Associates was appointed as architect for the scheme, which also includes an adjacent new-build youth zone.

But the renovation of the bus station is undoubtedly the centrepiece. The vast, 4,250 sq m building includes a double-height ground floor concourse, which is being substantially reconfigured, and nine levels of car parking above, edged by the scallops, all of which are being refurbished.

This £12.6m work package is being handled by local contractor Conlon Construction. It has the logistical challenge of keeping the bus station – used by 10,000 passengers daily – fully operational throughout the programme, as well as delivering the unusual heritage works.

“There are not many examples of brutalist repair work, so engagement with the Twentieth Century Society was very important in terms of



Conlon and concrete repairs contractor Makers devised a bespoke cantilevered cradle to access the scallops

understanding what was required,” explains John Puttick, who has since moved his practice base to Vauxhall, south London. “The project needed to deliver a contemporary bus station while being sensitive to the original design intent. Fortunately, much of that design intent remains relevant.”

LCC decided to follow an early contractor involvement (ECI) procurement route, bringing Conlon on board early. “The ECI phase allowed us to identify key trades and plan the renovation work,” says chairman Michael Conlon.

“It’s important for the council to have a 25-year warranty for the bus station, and the restoration methods and finishes which Conlon identified, in particular use of anti-carbonation paints and corrosion inhibitors, will allow that,” explains Andrew Barrow, project manager at LCC.

Surveys of the structure were also carried out, and Barrow says that the structural condition of the bus station was “no worse than when it was built”.

The 18-month ECI phase started in January 2015 and ran through to June 2016. The concrete repairs programme commenced in September 2016.

Conlon appointed concrete repairs specialist Makers for the car park work. “It’s fair to say the condition of the scallops was consistently inconsistent,” says Conlon. “We have used the Sika 614 mortar mix for the concrete repairs on both the scallops and the exterior columns.”

Accessing the scallops was not straightforward, because of their curved profile, and Conlon and Makers devised a bespoke cradle. “Using scaffolding, it cantilevers out from the edge of the car park level,” explains Conlon.

There are varying finishes across the different concrete elements. The

Client Lancashire County Council
Architect John Puttick Associates

Contractor (bus station restoration) Conlon Construction

M&E engineer Skelly & Couch
Value (bus station restoration) £12.6m

Programme ECI phase ran from January 2015 to June 2016; Bus

station completes in summer 2018; Whole scheme completes in 2019

PHOTOGRAPHY: DAVID MILLINGTON



The distinctive scallop shell facade of the bus station has been restored and treated with anti-carbonation paint

“The project needed to deliver a contemporary bus station while being sensitive to the original design intent”

John Puttick,
John Puttick Associates

scallops have been coated with an anti-carbonation paint also used on the car park levels. For the exterior columns, where the finish is exposed aggregate, a clear glaze weatherproof coating (Sikagard 680S) was used.

“The Twentieth Century Society was more relaxed about the areas that had previously been painted, but was keen for the exposed aggregate look to be retained,” says Puttick.

The car park decks are staggered, and their condition varied. “Only levels 1 and 2, and 8 and 9 had bitumen surfaces, the others – though covered – were exposed to the elements,” says Conlon. “The deck on level 3 was the worst, because in winter, when vehicles were carrying salt from the roads, this was the first level without bitumen they would reach.

“Once Makers had broken out the concrete, and replaced the rebar, the concrete was patched, and coated with Triflex waterproof coating. The bitumen decks were also scabbled down, and patched, before being coated with Triflex, but we have not laid down new blacktop.”

The new surface will instead be finished with an anti-carbonation coating, and within the concrete reinforcement bar is an impressed current cathodic protection (ICCP) system.

“The appointment by Conlon of a specialist called Corrosion Prevention ▶

10,000

The bus station had to remain operational while 10,000 passengers passed through daily



to deliver the ICCP was a key decision taken during the ECI phase," says Barrow. "The ICCP runs a light current through the rebar, which will if anything thicken the rebar rather than corrode it," explains Conlon. "In some areas of the car park, where there is evidence of greater drilling into the concrete, this is where the corrosion was at its worst and extra protection was put in."

The phasing and logistics management of the repairs has been "tricky", Conlon explains. "For each deck we refurbished, we had to screen off the ramps to the adjoining decks, and then organise our working area so that we could always maintain access to the car park from both north and south ends."

At ground level, the double-height concourse area is being modernised and brightened. This work has included stripping out a considerable amount of "clutter", as Puttick puts it, such as

The service conduits are mostly concealed in a band running around the perimeter above the doors. The old bus pen barriers have been converted into curved wooden benches. The soffit has been cleaned and will appear brighter with the new uplighting

temporary buildings and old signage. The entire facade is being replaced with new aluminium-framed double glazing, including new automatic doors.

"We had lengthy discussions with the Twentieth Century Society about replacing the existing sliding timber frame doors, which were 2.5m-wide, and required manual operation," explains Puttick. "The doors were beautiful in their own way, but didn't actually work either in a 1960s bus station or modern bus station."

"The bronze anodised finishes of the automated aluminium-framed replacements will be as close a match to the original iroko as possible. The visual effect is very similar."

However, timber will feature on the new benches inside the bus station, recycled from the original interior. "The barriers separating the bus pens were made from timber panels, each around

4m long and 300mm wide," explains Puttick. "As the pens are being removed from one side of the bus station, we have removed and restored these timber panels, and turned them on their side to become benches with curved corners."

Restoration specialists were brought in for the white ceramic wall tiles and Pirelli rubber floor tiles. "Although the flooring makes the interior quite dark, we couldn't touch it," says Puttick.

Some tiles were replaced, explains Conlon, where subways had been closed off and those tiles could be recycled.

A new glass-and steel reception pod will face an open space which connects the two sides of the bus station. "The original bus station lacked a central focal point," says Puttick. "The pod design is contemporary though the colour scheme matches the original."

The new lighting will have a "big impact" on the concourse and interior, he adds: "Previously there was a lot of clumsily installed downlighting in the concrete soffit, which didn't work very well. Engineer Skelly & Couch's design has flipped it over, so that it now highlights the ribbed soffit."

Skelly & Couch director Mark Maidment says: "When we examined early photos of the bus station, we think the original intent was uplighting, but we don't think the fittings were powerful enough - the concrete soffit is quite dark."

"We design to CIBSE guidelines for light levels, but they will be 30% brighter here - the client said they receive complaints from older people, which may be partly due to the effect of the black flooring."

The most powerful LED lights are linear fittings concealed in a shelf around the building's perimeter, with others hidden in the coffers.



"It is important for our industry to appreciate this architecture; it's our responsibility to preserve it for future generations"

Michael Conlon,
Conlon Construction

"We modelled the lighting first and did a mock-up on site with the electrical contractor to check it would work," says Maidment. "The soffit has also been cleaned of the pollution from bus fumes that has accumulated over the years, so the LEDs will be illuminating a much brighter soffit."

A significant challenge for Skelly & Couch, given the amount of exposed concrete in the building, was how and where to conceal the service runs.

"The new bus station has more technology now compared to when it was built - CCTV, PA and digital screens - so there was a lot of trunking," explains Maidment. "However, there is a band which runs around the middle of the facade and includes back-lit boxes above the doors, and we were able to hide most of the conduits in there."

Interior works included renovating toilets and retail units, with some

relocations of tenants at the bus station since 1972. "The sequencing, phasing and choreography has been a major challenge, but we have kept communicating with them throughout and they will end up with better properties as a result," says Barrow.

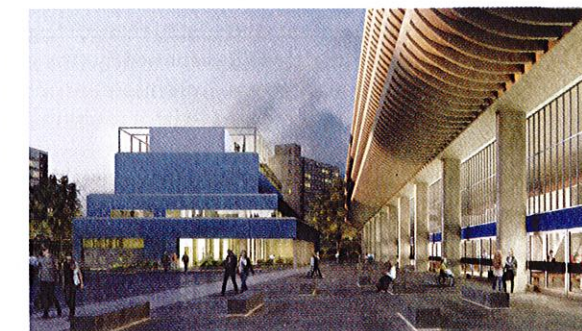
Barrow says that "as many local people have told me they love what we're doing, as those who have said they loathe it", but is confident they will see a "big difference" once the scheme is finished.

Conlon Construction's restoration work on the bus station is to complete in the summer. "It is important for our industry to appreciate this architecture; it's our responsibility to preserve it for future generations," adds Conlon.

The next phase of the redevelopment is the youth centre to the west - "a stepped design which responds to the massing of the bus station," explains Puttick - followed by the new bus bays on the eastern apron, a new coach station at the southern end, western public realm space, replacing the bus bays on that side, and associated highways works.

"Although the number of bus bays will fall from 80 to 40, that still comfortably meets capacity, and the design has flexibility for expansion if necessary," says Barrow.

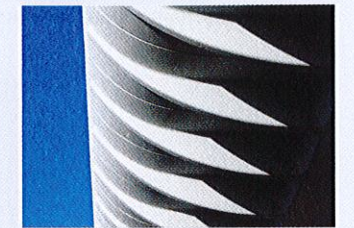
The whole development is scheduled for completion in 2019. ●



The planned youth zone alongside the bus station

Modernist methods

The Twentieth Century Society's campaign to preserve brutalist buildings



The Twentieth Century Society has fought an often frustrating crusade to gain recognition for brutalist architecture such as Preston Bus Station, which was only listed after the third application.

Clare Price is the society's case officer working on the building, which she says has "national architectural and historic interest". The organisation's advice has proved helpful for construction professionals working on modernist restoration projects, which remain comparatively rare.

"The Preston Bus Station architect, John Puttick, was in touch immediately [after winning the design competition] to consult with us, and was keen for his solution to reflect the original design intent," says Price.

Due to concerns from the society about the massing and location of the new youth zone building, its design was altered and moved further away from the listed bus station.

Price and the society's director and concrete guru Catherine Croft also provided input on the concrete mixes required for the renovation.

"We are not generally in favour of using anti-carbonation paint on the concrete for heritage reasons," Price adds, "but we recognised that Lancashire County Council needed assurances and guarantees for the work. We are happy that the exposed aggregate finish of the lower columns will be retained and visible because of the clear weatherproof coating."

While the bus station's renovation suggests a shift in sentiment towards brutalist architecture, the recent demolition of the Robin Hood Gardens estate in east London shows the society's work is far from done.