

# Battle to save the Barracks



The new look car park

Coventry's Barracks car park was facing demolition until a rescue plan was put into action, reports **Patrick McDonnell**

COVENTRY CITY COUNCIL was faced with a dilemma concerning the future of an ageing multi-storey car park – either to demolish it or try and save it. Make good was the ultimate choice, with the result that the car park has been given an extended lease of life following a total refurbishment. Located in the city centre, the Barracks is open 24-hours a day, seven days a week. It is both popular with shoppers and workers alike, especially with its competitive parking charges.

The council-owned MSCP was built in the early 1960s and is located within the Southern Precinct retail area behind the commercial buildings on Bull Yard, Market Way in the city centre. The car park is unusual in providing extra parking spaces on the roof of an adjoining department store. These additional parking spaces are accessed via a pedestrian footbridge. The car park features no lifts, with access to the upper levels only being by staircases.

The three-storey facility was constructed using the lift-slab system, which involved casting each parking deck at ground level and then jacking them into position. The completed structure had six split-levels providing 469 spaces, with a further 55 spaces provided for drivers with disabilities at ground level. A Shopmobility scheme, which loans out wheelchairs and scooters is also available for users of the car park.

Besides serving the local economy, the Barracks car park is a significant revenue generator in its own right, grossing nearly £620,000 a year for the council.

## Cause for concern

After around 50 years of service, the car park was showing its age, maybe worryingly so. A report by the council last July noted: "Car parks of this age and construction require constant attention and some have experienced partial failure in the past."

A lift-slab car park called Piper in Wolverhampton

partially collapsed in 1997. Remedial work undertaken at The Barracks in 1990 had addressed the weak point in the lift-slab structure, strengthening the support columns with mushroom heads. However, in recent years the structure was deemed to be deteriorating rapidly due to corrosion of the steel-reinforcement in the concrete walls and



floors. This was caused by freezing water and de-icing salts used on roads during winter months, and brought in by vehicles using the car park over the decades. Concerns about the multi-storey's structural condition led to it being monitored on a monthly basis by engineering and maintenance group Jacobs Babbie. Other problems to be rectified included the need to strengthen the fabric of the building, waterproof and resurface its decks and address inadequate lighting.

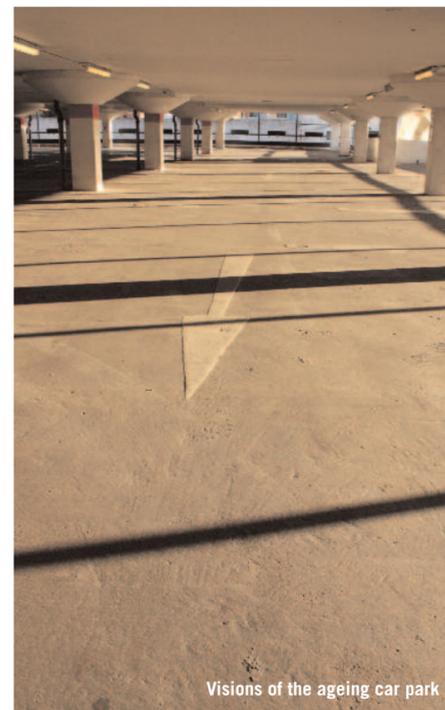
Coventry City Council commissioned a review of the condition of the concrete and the integrity of the car park's steel reinforcement from specialist structural engineers Nolan Associates of Birmingham. Their analysis revealed that, although the structure was currently safe, there was active corrosion, it recommended that this and other health & safety problems must be addressed. The report drew attention to the edge protection barriers, which did not meet current safety standards and either required substantial upgrading or be replaced.

Nolan Associates' final recommendation was that the car park be closed permanently unless essential repairs were undertaken as a matter of urgency.

## A second chance

The Barracks is in an area of the city centre under consideration for major future redevelopment. Any decision on extending the life of the car park would have to accept its eventual demolition. However, as any redevelopment would not happen for at least the next five years, having a car park in the interim was vitally important.

The council considered a number of options. The most drastic would have seen the demolition of the car park at a cost of £350,000, and it being replaced by a new surface car charging premium rates. This option would have presented its own problems. Adjoining property owners use the multi-storey to access and exit due to various rights of way and emergency access over the footbridge to and from the Barracks. There would also be the cost of compensation to consider when negotiating variations to leases. Council officers believed these



Visions of the ageing car park

PICTURES: PETER COWLARD/ABRISKY



Stripping the roof deck



The interior: before



The interior: after

compensation costs would have been "significant".

Four possible life-extending measures were considered to prolong the car park's life. These included two, five, 10 and 20 year scenarios. In the end the 10 year option was felt to be the right choice, justifying the £1.5m cost of refurbishment within the context of possible redevelopment.

## Makers to the rescue

Following a competitive tender process the council appointed Makers Construction to refurbish the car park site and work began in October 2010.

Makers technical director Peter Cowlard says: "There was quite a tick list of problems that needed to be addressed to bring the car park up to standard. The refurbishment required repairs to the concrete columns, the decks, soffits, access ramps, edge protection barriers, link-bridge and staircases. Makers were responsible for these upgrades. Previous repairs were not of a good quality so were removed."

One external stair-core had been closed for some years, on structural grounds. This was repaired and strengthened. Cowlard says: "New vehicle barriers were erected and supplied by Berry Systems, they are

of the post and beam type, complying with current requirements to arrest vehicles. They also had the addition of the pedestrian barrier mounted on them, thus giving full compliance to the edge-protection. This also gives a cleaner architectural line, and enhances the visual appearance.

"We were responsible for the carbon-fibre strengthening in a number of areas, the application of anti-carbonation coatings, and a new elastomeric waterproof roof deck coating using Sika products.

## Keeping the car park open

The contract required that the work be phased to keep at least 50% of the car park available to the public at any one time. There was a stipulation to have a planned break in the reconstruction work to allow 100% use of the car park during the Christmas and January 2011 sales period.

Cowlard says: "Total closure was required for a limited period to ensure a safe working environment during the rebuilding programme." The council had estimated that this would result in a loss in net income of £140,000 during the period.

While Christmas and New Year were planned for,

the British weather brought its own problems, with 2010/11 seeing one of the worst winters in 40 years, which impacted on the schedule, Cowlard says.

"However, we still came in on budget."

Certain parts of the original infrastructure were retained and refurbished, including the lighting system, with input from the authority's mechanical and electrical engineers and installed by a sub-contractor. Likewise, the existing CCTV system was also overhauled. The original pay-on-foot and entrance barrier installations were also retained. The APT Skidata 450 series machines were refurbished and reinstalled by the manufacturer.

The car park was redecorated with colour-coding to differentiate the different levels of the facility. Chatom Signs supplied new information signage and lane and bay markings. The Barracks reopened to the public on 30 June. "This refurbishment is a classic example of what can be achieved with a very limited budget.

Although the conditions of the facility were distressed, it was possible to make good the structure and future proof it for at least another decade of productive use, well into the 2020s – if not longer," says Cowlard

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