

A better, brighter Basildon



The Eastgate car park

The 1980s multi-storey car park serving Basildon's Eastgate centre has been given a complete overhaul

The Eastgate shopping centre is a major destination in the heart of Basildon, which attracts around 15 million visitors to the Essex town centre. The centre comprises a covered shopping centre, an Asda supermarket, a Debenhams department store, two office buildings and a 700-space multi-storey car park. Other retailers include Superdry, New Look, H&M, River Island, Topshop, Next and Primark.

Over the past two years the 25-year-old car park has undergone a major refurbishment, which has seen its fabric and systems completely overhauled by Makers Construction. The refurbishment has also made it easier to park at the multi-storey after a decision to reduce the total number of bays.

Due to its age parking between columns was not user-friendly with today's larger cars, and the decision was taken to reduce the parking bays between columns from three car park spaces to two. The revamped car park now has over 700 spaces, 33 being for disabled motorists, while 37 are designated as 'Parent & Child' bays along with a dedicated section for motorcyclists.

Testing the car park

The car park comprises eight suspended concrete parking decks, with the first deck directly above shop units. The decks are accessed by ramps within the structure and an external entry/exit spiral ramp.

Problems affecting the structure included

spalling deck and soffit concrete due to ongoing reinforcement corrosion and lighting levels were not to contemporary standards.

Extensive testing of the concrete, decks and soffits was carried out to establish cause of deterioration of concrete. Darren Wootton, operations director at Makers Construction, says: "The testing established higher than acceptable levels of chloride ions in the deck surface. Previous 'patching' works had been unsuccessful in arresting the degradation and it was time to carry out more substantial works in order to extend life expectancy to at least another 10 years.

"Testing revealed areas of high chloride concentration within the concrete intermediate deck surfaces and extensive corrosion to the encased main reinforcing steel, over significant areas which called for the use of a Migratory Corrosion Inhibitor to stabilise the concrete surrounding from spalled areas."



The new look roof deck

The inspection regime included structural and material assessment, in line with the recommendations of the Institution of Civil Engineers (ICE document), *Multi-Storey Car Park Inspection and Maintenance*.

The top deck surface and covered levels 1 and 2 had been waterproofed with asphalt and this had developed splits, allowing water to leak into the concrete below and leak through construction joints. The intermediate decks were bare concrete and these were extensively repaired and then prepared to receive new coloured decks.

"The shopping centre needed the car park to remain operational for during the works. With this in mind, the main refurbishment works were carried out in three phases," says Wootton.

The first phase involved closing just the top three levels. The next three levels were closed during phase two while phase three involved closure of the bottom two decks. Access to the completed areas was via staffed traffic routes. Works to the external spiral ramp were undertaken out-of-hours at avoid affecting trading.

The works

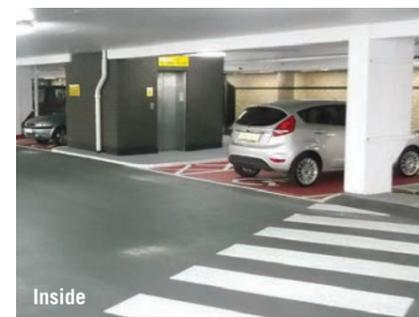
Concrete repairs were carried out to the deck surfaces, columns and soffits. Rather than having to break out concrete, the use of new surface applied corrosion inhibitors meant that these repairs were non-invasive. All vertical and soffit surfaces were also repaired and then coated with anti-carbonation coatings to prevent further degradation.

Concrete repairs were carried out utilising polymer modified repair mortars supplied by Sika UK. A pre-batched concrete was used for larger areas. "The new decking systems were designed firstly to ensure waterproofing of the structure, to prevent further chloride-laden water permeating the concrete decks," says Wootton. "Secondly they provide a safe, slip resistant, aesthetic wearing surface for pedestrians and vehicles alike."

The decking colours chosen were dark grey drive aisles, blue parking bays, with white pedestrian crossings and lined in white.

"The slip-resistant values conform to current requirements in both wet and dry conditions, being rated as a low potential for slip in accordance with the TRRL testing method," he says.

Expansion joints, throughout the car park



Inside

decks, all needed to be renewed as leakage was significant, allowing deterioration of the concrete either side to take place. New Emseal joints were installed throughout.

The external spiral ramp was given a fresh appearance with a coating aimed at being both protective and decorative. "This once bland looking car park now has a fresh new appearance externally and internally, it has seen a total transformation," says Wootton.

The works also covered the car park's electrical system, which was renewed as the phased work progressed. The new lighting scheme was designed to give a greater uniformity of illumination to parking bays and drive aisles alike.

The lighting scheme includes power-saving, with features such as the lights on the outside edges of the decks switching off in daylight as well as microwave switching which allows lights to dim down in sections and then come back up when activated by movement. "The lighting has a low energy requirement, when compared to the system which was removed and gives substantial benefits," he says.

The car park's emergency light fittings are positioned to give a safely lit passage to exits in the case of power failure. The emergency lighting system has an automated checking system as required under legislation.

Several parking bays at the mall have been fitted out and designated to cater for electric powered cars.

Easier wayfinding

The car park was given a full new vehicle and pedestrian signage package to ensure ease of

a loss of parking spaces, every three being converted to two, but the 'customer experience' was seen as critical in this upgrade process."

Looking to the long term

The works were concluded on time and within the £1.5m budget set down by original client British Land, which sold the freehold of Eastgate Shopping Centre in Basildon to Infrared Capital Partners for £88.6m at the start of this year.

The refurbishment has been designed with future maintenance and repair in mind, says Wootton. "The car decking system as applied is design for ease of maintenance and will prevent further contaminants from entering the concrete deck surfaces.

"Makers operates a deep clean and inspection regime for our clients, which ensures the deck is cleaned and inspected at least annually. This is an ongoing process at all the refurbished car parks," he says.

Wootton says that the project shows that aging car parks can be made to feel contemporary. "It was clearly understood that the facility was over 25 years old and that its design could not be changed," he says. "However, the team set about enhancing the parking experience by introducing modern technology and materials. This, combined with upgraded security, energy efficient lighting and durable deck coating materials, has ensured that the car park has some further expected service and ensures a safe and pleasant environment for both the public and their prize possession, their car."



Advertising the bigger bays

usage for the parking public. "All decks are colour-coded and numbered, giving better clarity," reports Wootton.

Greater use has been made of deck signage and demarcation, helping drivers identify the direction of flow, obligatory stopping positions and dedicated parking bays for groups such as parents with children and the disabled. The parking spaces nearest to main lifts are now dedicated and signed for motorists with disabilities.

"The signage package has allowed users a fuller understanding of how to use the car park, removing doubt in terms of circulation, rights of way and the ability to understand better their parking position within the facility," says Wootton.

Essex wide bays

The size of the car park's parking bays have also been reconfigured. "Given that modern cars tend to be larger than their predecessors, a decision was taken to increase the parking bay sizes," says Wootton. "Overall, this meant

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