

# STRUCTURES CASE STUDY

## Transforming Basement Parking

# MAKERS

...makes the difference

### PROJECT

Castlemall SC Car Park, Norwich

### STRUCTURE

Car Park

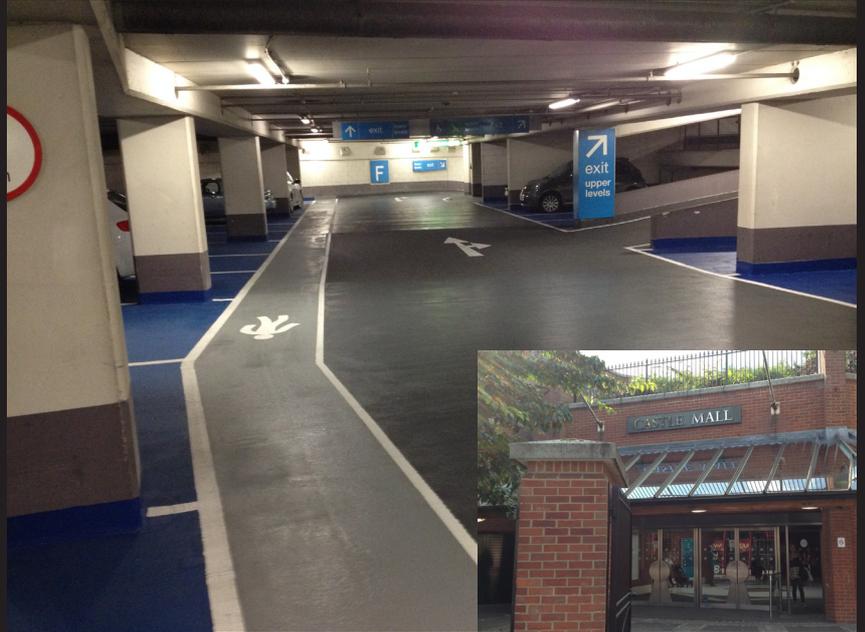
### CLIENT

Infrared UK Retail Nominee 3 Ltd

### CONTRACT VALUE

£547,898

### CONTRACT



Reverting back to its original name – Castle Mall - following a change of ownership, the multi-storey car park underwent a programme of concrete repairs and re-waterproofing to the reinforced concrete decks to all 8 levels of the parking structure.

Constructed in 1989, the reinforced concrete elements of the 710 space car park had previously been protected with a range of surface treatments. The parking decks - including drive aisles and up/down ramps – had coloured epoxy resin-based coatings originally applied to them to protect against the ingress of contaminants such as de-icing salts brought into the car park by vehicles. The walls, columns and soffits had previously been decorated with a proprietary masonry paint to improve lighting levels for the car park's customers.

As part of a programme of Planned Preventative Maintenance (PPM) programme, following a competitive tender process, Makers were appointed to deliver a scheme of works that included the removal of all existing coatings from the concrete parking decks followed by concrete repairs, corrosion management and the re-application of a deck waterproofing system throughout, to be applied in contrasting colours. Makers delivered the completed project both within budget and to programme.



Before



Before

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## Association Membership



## Accreditations

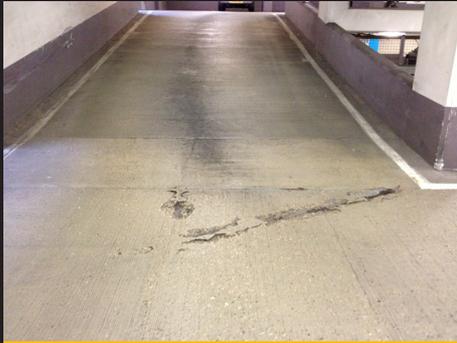


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Existing Defects



Dark Parking Environment



Deck Coatings Removed

The structure's asset managers had identified that the original protective coatings applied to the deck surfaces had reached the end of serviceable life. As a result, surface defects were beginning and spread predominantly evident through localised spalling of the concrete deck surfaces. A comprehensive concrete condition survey and testing identified that though there was not widespread damage to the car park's decks currently, if left untreated, there could be a significant development and spread of defects leading to a substantial uplift in future refurbishment costs. Specifically, the presence of salt-chlorides were identified within the 'low to medium' risk category.

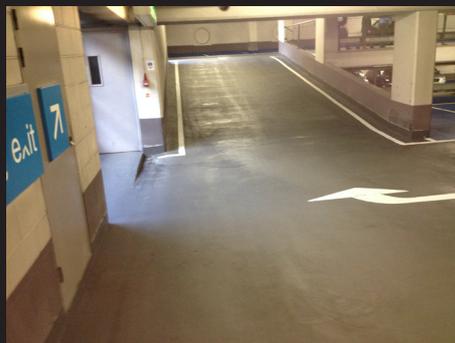
The existing deck coatings were removed from all 18,000m<sup>2</sup> of concrete floors to enable a full visual appraisal and hammer test to each parking deck. A nominal volume of repair was required followed by the application of Sika Ferrogard 903 – a migratory corrosion inhibitor – to control and reduce corrosion rates.

A Sika non-slip protective car park decking system was applied throughout in contrasting colours: dark grey for traffic aisles and ramps, blue for parking bays and light grey for pedestrian walkways.

Castlemall is an exceptionally busy shoppers car park and in order to keep it fully operational during the 26-week refurbishment programme, Makers had to implement an Innovative traffic management system ensuring access could be retained whilst protecting both our workforce and the car park's customers. Works to the up/down ramps had to be done out of hours with rapid-setting materials that would allow them to be put back in service the following day so the car park could continue to be used without disruption to customers.



Repaired & Primed



New Finish to Ramps



Completed

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