

# CASE STUDY

# MAKERS

## Basement Car Park Refurbishment

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### PROJECT

Edmund House Car Park

### STRUCTURE

Reinforce Concrete Construction

### CLIENT

Malcolm Hollis

### CONTRACT



Edmund House is a ten-storey office block with a two-level basement car park located at the junction of Newhall Street and Edmund Street in the centre of Birmingham. The building comprises a reinforced concrete frame with reinforce concrete rib and clay pot flooring.

The underground car park is accessed off Edmund Street and three internal covered footbridges are provided between the first and third floors between five storey and the three storey sections of the building.

Makers were commissioned to undertake a programme of concrete sampling and testing to determine the condition of the various concrete elements and also to determine if high alumina cement (HAC) had been used in various structural elements.

The building was extensively occupied with vacant suites to the Floors 3, 5, 6 and 10 from which the sampling and concrete testing was undertaken, together with upper and lower underground car parking floors, including access ramps where chloride ingress may have been expected to be higher and therefore more detrimental to the reinforced concrete elements.

Fairly extensive cracking with calcite leaching had developed to the soffit of the deck slabs to the basement and lower basement car parks.

From the concrete testing it was apparent that there were several areas of defective concrete to the tops of the deck slabs, bases of several columns adjacent to the ramps and the deck slab soffits.



Before



Before

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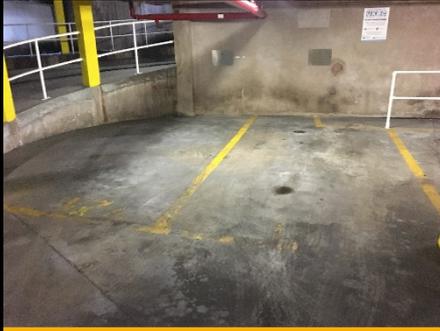
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Before



Before



Before

Defective concrete was removed and concrete repairs to the deck were reinstated with Fosroc Pathroc GP. Repairs to soffits and columns were carried out using Fosroc Primer AR bonding bridge and Fosroc HB. Once the concrete repairs were carried out Protectosil CIT corrosion inhibitor were applied by low pressure spray unit around the perimeter of the repair.

The decks were vacuum blast cleaned and all edge details prepared and solvent wiped to ensure all surface contaminants were removed before the new deck coating of Triflex CPSC was applied. All upstands and cracks in the substrate were primed with Triflex Prodetail applied to treated areas and then reinforcement embedded fleece applied into the resin to give additional reinforcement strength to areas of potential movement. Quartz sand aggregate was fully broadcast onto the resin to provide a slip resistant surface.

The repairs and works to ramps were carried out during Out of Hours to ensure access to the car park was maintained for all office workers in the floors above. The ramps were prepared and Triflex DCS-C was applied, again using the Triflex Pro-detail product and all upstands and cracks in the substrate primed and prodetail applied, then reinforcing embedment fleece into the resin and finished with quartz sand aggregate broadcast onto the resin providing slip resistant properties.

Scaffold was erected for the link bridges which required concrete repairs and Fosroc Primer AR bonding bridge and Fosroc HB Mortar were installed.



After



After



After

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