

## Ramps Reprofiting

Grand Central MSCP, Birmingham

### SCOPE

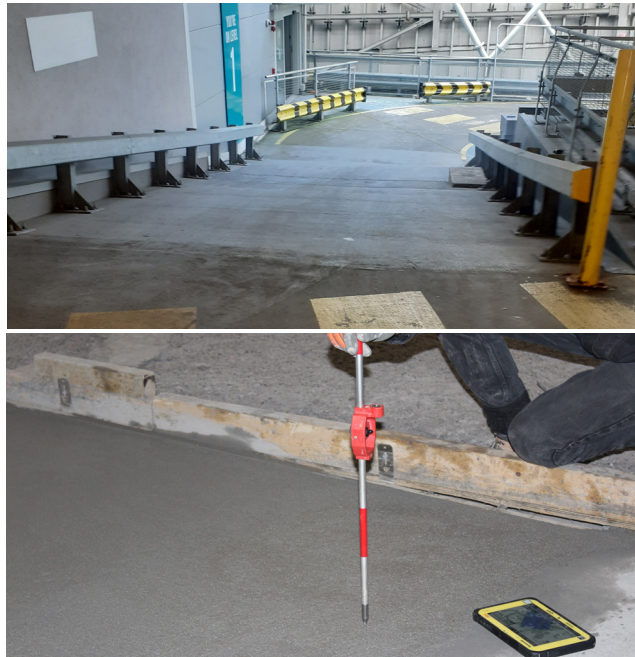
- // Product Testing & Trials
- // Hydro-Demolition
- // Screeding
- // Deck Waterproofing

### DETAILS

- // Multi-storey car park situated above live railway lines and Grand Central shopping area
- // Two product testing trials
- // Approx 50 tonnes of concrete removed via hydro-demolition
- // Installation of 10,000 bags of SikaScreed HardTop 60 across 17 ramps & checked for conformity
- // Application of Sika RB58 car decking system blended from old to new



**Before:** Profile Causing 'Grounding Out' to Cars



**During:** Screeding & Level Surveys

**The 17 ramps across 11 floors of this MSCP required reprofiling as the profile and geometry of the ramps caused damage to the underside of vehicles as they were 'grounding' on the existing concrete.**

Cemplas were involved with the project before a principal contractor had been appointed, working closely with the client and structural engineers to conduct product testing. During the first trial, we purpose-built ramps at our Midlands office, which allowed us to create a number of different angles to show how SikaScreed HardTop 60 could perform under various variables. The design mix ratios were extremely tight and had to be developed to precise tolerances to the millimetre. For the second trial, we hired an entire warehouse built three ramps to simulate the desired levels the client required to stop cars from 'bottoming out'. The trials gave the client and structural

**During:** Hydro-demolition to Remove Concrete



**During:** Scaffolding & Sheeting for 'Tenting In' on Exposed Top Deck

engineer confidence in the materials and the issues experienced would be a thing of the past.

Hydro-demolition was used to strip back the existing deck coating and remove areas of concrete substrate to the precise design set out in chainage for the precise millimetre of concrete to be removed – totalling approximately 50 tonnes being removed.

Sika's 20EBB adhesive was applied to the exposed substrate before the installation of the screed system to ensure a structural bond. Approximately 10,000 bags were used across the site in total, followed by Sika's RB58 car decking system. This was used on all ramps and upstands to ensure that aesthetically, the refurbishment blended from old to new.

To guarantee precision perfect installation of the screed,

**During:** Laser Cut Screed Rails



**After:** Precisely Reprofiled Ramps

manufactured laser cut screed rails were fixed to the new kerbs to make sure the innovative screed solution was perfect in both finish floor level and geometry. The screed levels on each ramp were checked for conformity using a level survey, followed by a vertical tracking vehicle. The results of this showed the tolerance levels were within a 1mm range.

Due to the cold winter weather conditions, localised areas had to be tented in with heaters to maintain a constant specified temperature before and during the application of materials. The exposed top deck also saw scaffolding and sheeting to ensure temperatures were maintained.

A parapet extension was built, which consisted of a steel shuttered cage to make safer pedestrian zones at the top and bottom of each ramps, fixed through the deck with a baseplate to withstand the heavy impact loads of cars.