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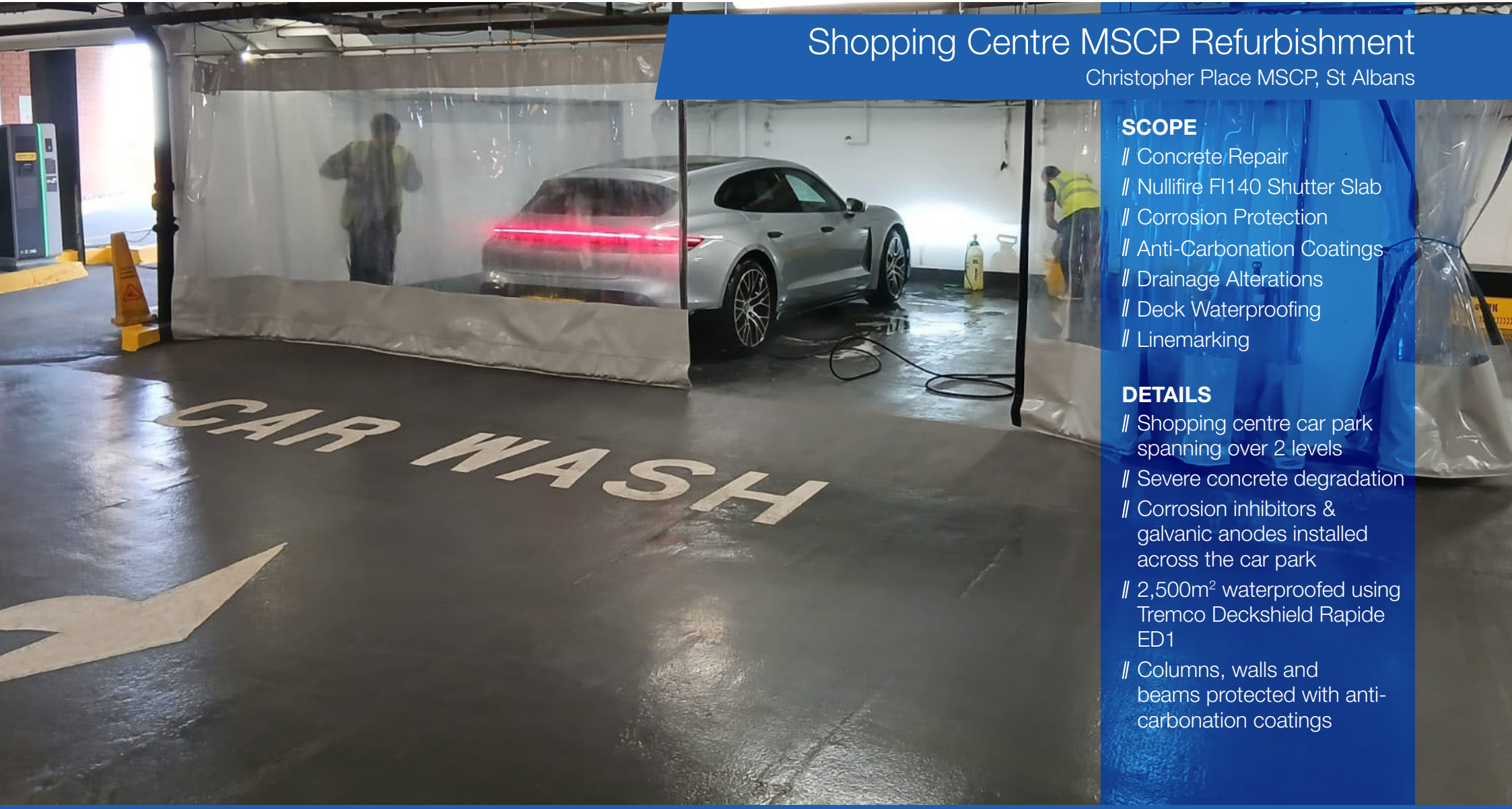
british parking awards 2025 FINALIST

Case Study
Car Parks

Client | **Bidwells**
Role | **Principal Contractor**

Shopping Centre MSCP Refurbishment

Christopher Place MSCP, St Albans



SCOPE

- // Concrete Repair
- // Nullifire FI140 Shutter Slab
- // Corrosion Protection
- // Anti-Carbonation Coatings
- // Drainage Alterations
- // Deck Waterproofing
- // Linemarking

DETAILS

- // Shopping centre car park spanning over 2 levels
- // Severe concrete degradation
- // Corrosion inhibitors & galvanic anodes installed across the car park
- // 2,500m^2 waterproofed using Tremco Deckshield Rapide ED1
- // Columns, walls and beams protected with anti-carbonation coatings

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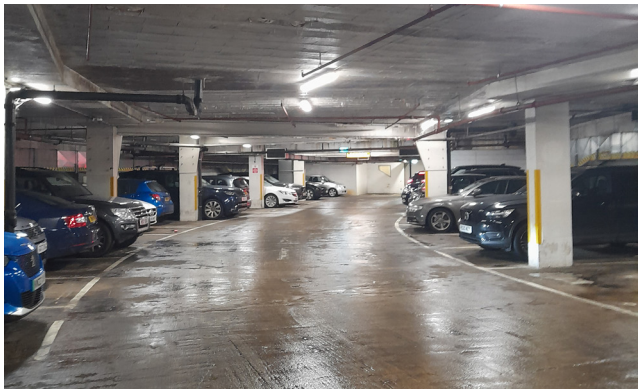

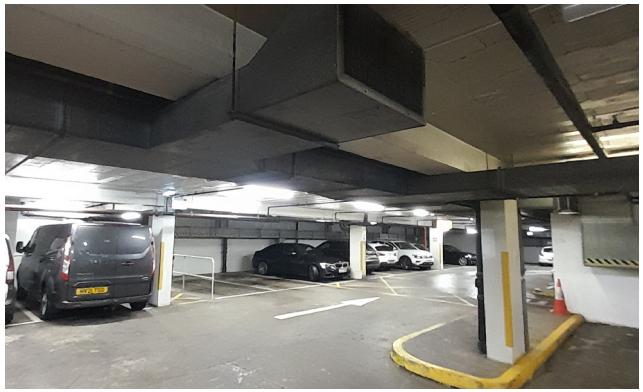

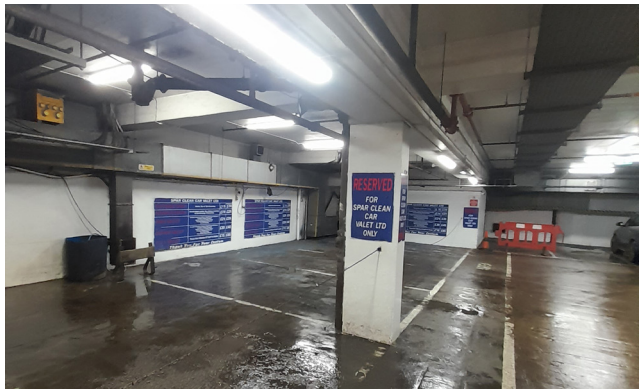

Christopher Place MSCP, St Albans plays an essential role in the local infrastructure, serving retail visitors, nearby businesses and residents. As one of the primary access points to the attached shopping centre, the facility is heavily used and critically important to the town's day to day functioning.

Originally constructed in the early 1980's, the car park consists of 180 parking spaces, with a suspended slab design spanning two levels – basement and ground floors – constructed using pre-cast concrete ribs and hollow clay pot infills, a structural composition typical of the era.

Over time, the car park began to suffer from advanced concrete degradation. Decades of exposure to de-icing salts and other chemicals carried in by hundreds of vehicles each day had significantly damaged the concrete structure.

This deterioration not only compromised the structural integrity but also posed critical safety risks to the public. A 20-week refurbishment programme was initiated and designed to address these concerns.

As concrete repairs were being undertaken, it became evident that the original hollow clay pot infills had become highly fragile. Many were found to be cracked or completely broken during the concrete breakout process. When new concrete was poured for reinstatement, it seeped into these voids dramatically increasing the dead load on the already compromised suspended slab, far exceeding the original design tolerances and creating a significant engineering risk.

A creative and technically sound solution was implemented to solve this problem whilst maintaining fire resistance and structural performance. Nullifire FI140 Shutter Slab, a non-combustible, rigid rock mineral wool product, was selected for it's moisture resistance and low weight.

These slabs were carefully cut and installed into the voids left by the failed clay pots. Importantly, they allowed adequate space around the reinforcement bars, enabling the concrete repair mortar to fully encapsulate the steel. This process ensured the reinstated slab performed in line with engineering requirements and did not compromise fire safety standards or structural loading constraints.

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To ensure long-term protection of the repaired structure, a comprehensive corrosion prevention system was applied. This included spray-applied corrosion inhibitors with galvanic anodes fixed throughout the car park. These components targeted the exposed steel reinforcement, mitigating the risk of future chloride damage and enhancing durability.

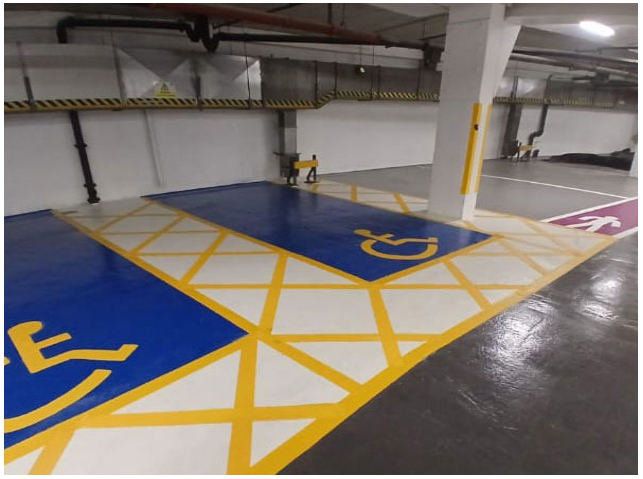
Alongside structural repairs, the refurbishment also introduced access and fire safety upgrades. A new access point was created by removing part of the reinforced concrete retaining wall, where a pair of fire-rated doors were installed. These doors ensured fire compartmentation in accordance with building control regulations. They also supported operational functionality by allowing entry of a ride-on scrubber dryer, improving the car parks cleaning regime. Furthermore, the new access facilitated routine maintenance of the storm drainage system located beneath the basement level.

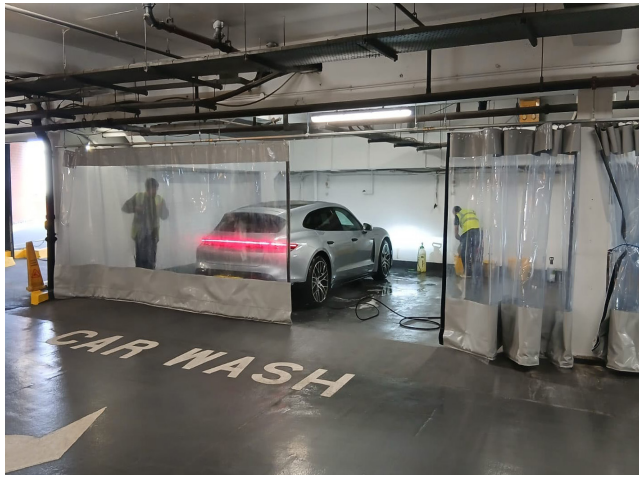
Following these works, the car park surface was prepared and coated with Tremco's Deckshield Rapide ED1 waterproofing system, covering approximately 2,500m^2. This high performance material provided durable waterproofing whilst its rapid curing properties enabled a swift turnaround, ensuring that the car park was back in service quickly. The car wash facility was also further renewed with improved drainage and a new curtain system, providing enhanced services for local residents and enabling a small business to grow within the structure.

The car park remained operational during the initial phases of construction, allowing for uninterrupted access and minimising revenue loss. This approach also provided a safer and more controlled environment for the works to take place without major disruption for the public or client.

This refurbishment demonstrates how engineering innovation, careful planning and attention to detail can extend the life of a critical community asset. The project delivered meaningful upgrades to both the structure and service, all while maintaining operations and adhering to safety and performance standards. The result is a modernised and user-friendly car park that will serve the community for many years to come.

For further advice and/or information regarding any of our services, please visit www.cemplas.co.uk.





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