

### Providing Sustainable Life to Reinforced Concrete Structure

#### What is +chase®?

Our +chase® mortar operates as an impressed current cathodic protection (ICCP) anode. It is installed using a conventional grouting gun, hand placement and finishing tools and operates within reinforced concrete structural elements, such as decks, beams, abutment walls and so on. If multi-layer steel protection is required then there may be a need to also drill discrete holes within the element to depth in order to throw current around the whole steel area.



#### Compliance

This anode is manufactured by C-Probe and compliance tested at anode source to meet: **BS EN 12696:2016, & BSI PAS8820:2016**

+chase® is commonly installed in reinforced concrete structures like multistory car parks

+chase® contributes to a more sustainable built environment, and also **NetZero emissions due to its low carbon profile**. Through the restoration of existing reinforced concrete structures, such as parking decks, +chase® helps **retain the embodied carbon** by protecting steel from corrosion and preventing damage to the concrete cover that was created during its construction. It eliminates the need for reconstruction which would require new steel and concrete, alongside the demolition of existing structures. This system can be **monitored and controlled remotely via our AchillesICP**, our open network management system, creating a **low carbon retrofit system that extends the structure's service life for at least another 25 years, with online remote management on AiMS**.

#### Elements of the installed system:

- +chase® anode mortar
- CP200 corrosion rate probes (4 per zone)
- AchillesICP power, control and monitoring network
- Electrical connections, wiring and environmentally protected enclosure
- AC and broadband connectors at the NAU
- AiMS facility for ongoing performance management and reporting.



Impressed current cathodic protection for permanent and continuous operation.



Single life time application



Low carbon emission low energy manufacturing process and ESG compliant



To be installed with AchillesICP digital management system for remote operation and control



Provides greater flexibility with the design parameters that influence service life



Full performance record for due diligence purposes and permanent record of building performance

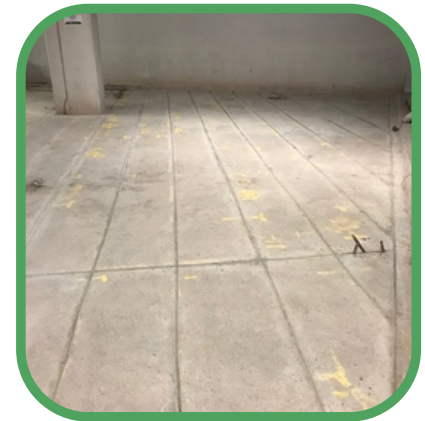
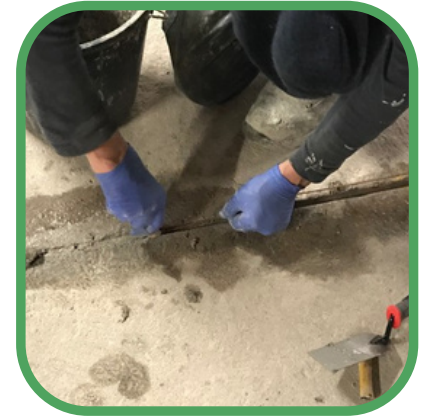
### Case Studies

#### Omni Centre Car Park, Edinburgh UK

This system has been installed at the Omni Shopping Centre Car Park in Edinburgh, Scotland to 4 levels of underground car parking as part of a comprehensive corrosion management strategy. Over time the popular car park had succumbed to structural damage and corrosion caused by the ingress of chlorides from de-icing salts from above.

This system comprised of 42 ICCP zones and 7 additional monitoring zones for levels protected using surface-applied corrosion inhibitors. In addition to this, some 6000 C-Puck galvanic anodes were used to protect newly repaired areas to 2 levels. All the anodes and monitoring could be controlled and data accessed remotely throughout the car park with AchillesICP and AchillesIES, helping to extend its service life for 100+ years.

This ESG compliant approach meant there was no need for demolition or extensive reconstruction using new materials, helping to reduce waste and harmful emissions. Reconstruction was also a near-impossible strategy due to underground facility and electric tram on land, meaning something non-invasive like cathodic protection was essential to minimise social disruption.

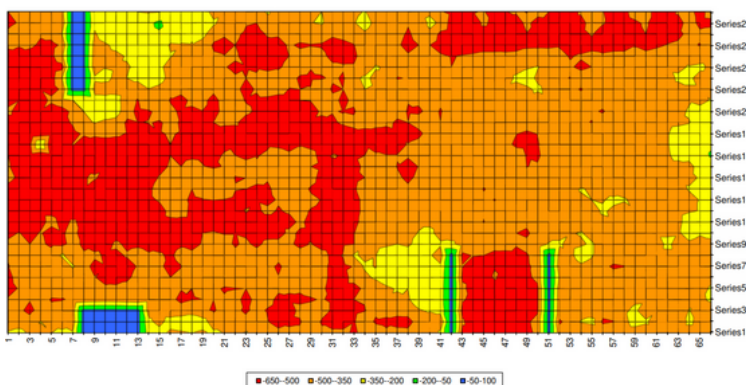


#### Victoria Centre Car Parks, Nottingham UK

The Victoria Centre Car Park is a 5 multi-storey car park, with designated Blue, Red, Green, Yellow and White decks. These car parks were subject to a refurbishment program from 2017 to 2019 which included the repair of damaged reinforced concrete areas and design strategy for corrosion management applied across the car parks.

C-Puck galvanic anodes were used in the concrete repair areas to prevent incipient anode formation and corrosion inhibitor applied to the decks prior to being covered with a deck coating. There were several areas of concern with higher corrosion activity on the White and Blue car parks which had ICCP installed as a more robust and controllable long term solution for corrosion mitigation. The ICCP was installed to the access ramps in chases and drill holes and adjacent parking decks on the White and Blue car parks, and also to the joint and drains on the White car park.

The ICCP system used C-Probe's +chase® anode mortar, corrosion potential and rate sensors and the Achilles ICP and IES network electronics, helping to prevent future corrosion and provide service life tracking of performance for the owner with reporting on AiMS.



A half cell corrosion contour map of deck survey data, which shows the level of corrosion present within the structure.

The red represent areas which are high risk.