Case Study
Parker Street

The Parker Street building is a six floor steel framed structure in the centre of Liverpool. The building was suffering from cracking and displacement of the brickwork cladding to the steel frame. In addition leakage through the degraded waterproofing and drainage had led to water damage. The upper section of the roof was refurbished and individual steel I beams suffering corrosion damage were replaced.

Location
Liverpool, UK

Client
Colliers

Completed
January 2015

Structure
Steel Frame Building

The Problem Identified

The rear brickwork face of the building was exhibiting cracks and some bulging. Exposure of the steel frame indicated corrosion in numerous sections had occurred, leading to formation of expansive corrosion products which in turn was applying disruptive pressure to the brickwork.

The Solution Developed

In order to stop ongoing corrosion and prevent further damage at the Parker Street Building CPT designed a DuoGuard™ hybrid anode system. Initially the bulging brickwork was removed to expose some of the steel I beams. DuoGuard anodes were then installed into the mortar surrounding the beams to deliver a protective current to the steel. Using an external power source, an impressed current was applied to stop active corrosion and render the steel passive. The DuoGuard anodes were then disconnected from the power source to self-generate a galvanic current, sufficient to maintain steel passivity and control corrosion.

A series of discrete enclosures allowed access to the installed system from inside the building to check the system operation and monitor steel corrosion rate.

The Benefits Provided

Corrosion related deterioration of the Parker Street Building has been halted. After the initial power up period using an external power source the DuoGuard system is self-powered thus minimising future maintenance requirements and associated life costs.

Corrosion found on the rear brickwork face of the building

CPT Products Used

DuoGuard™ 500

DuoCrete SD Mortar

ISO 9001
Cert No. 10159