

Swansea Guildhall, Wales Case Study



Problem

The lower part of the outer walls at the lowest level of the Guildhall building had both visible and measured water ingress.

We proposed the MPS treatment of 395 sqm of wall area.

Then a second stage installation was conducted a few years later.

Challenges

The Guildhall of Swansea is a Heritage listed building built in 1933 and this require the waterproofing system to be nonintrusive on the buildings surface.

The Client also did not want to excavate the entire perimeter of the building in order to install new drainage. Hence the MPS/AOP was a perfect solution.

We placed the anodes in the groutlines of the brick and repointed thereafter.

This made the installation completely hidden and the surface kept its character.

The 2 cathodes used where buried into the ground on the outside and was also completely hidden after installation.

Industries:

Heritage (Brick Structures)

Regions:

UK and Ireland

Summary`:

- A retrofit installation on a Heritage listed building.
- Anodes placed in the brickworks in the basement
- First installation was successful and a second stage was ordered for a complete protection of the entire basement.

Timings:

- The design of the MPS® (AOP) system took 1 week
- Structure was available for fit out 3 weeks after work starting on site.
- Drying time 6 weeks

Success Criteria:

- The building basement is brick and a capillary structure.
- The installation is below ground with a water source

Control Unit:

- 1 control unit and 1 junction box used for the first stage
- An additional control unit and junction box was used for the second stage.

Contract

The architects of Davis Langdon were set to find a solution to the water ingress issues at Guildhall. They had heard of MPS installations and called us to conduct a feasibility study at Guildhall. We concluded that the building was meeting our success criteria and we were awarded the contract to waterproof Guildhall of Swansea. We started the works in 2008.

Outcome

We met the Clients design criteria of nonintrusive installation. We are also compliant in terms of EMC to sensitive installations like data rooms and technical gear. The first stage installation showed a steady 90% RH on the target areas, which is paint dry. This triggered the second stage installation which completed the perimeter of the building. The system has no moving parts and thus is not subject to wear. Thus regular maintenance is limited to periodic checking to ensure that the system is still energized and recording and reviewing the current levels in each of the electrode circuits. The systems have been running since 2008 and continues to keep Guildhall basement dry.

AOP system

Hydrotech the original company terminated in 2011, Triton Norway remains as the authority on AOP as the system was developed by the Triton Norway team. The latest generation of AOP is now called AOP (Advanced Osmotic Puls). The AOP System is a revolutionary technology based on an accepted theory of electro osmotic. It gives new life to existing brick, masonry and concrete structures avoiding expensive reconstruction and has a broad field of application in new concrete structures. The "state of the art" methods in use in the building industry today can be characterised as temporary solutions to a problem for which there is no apparent cost effective permanent solution. The AOP System provides a permanent solution. The AOP System is utilised for transporting water encapsulated within the capillaries out of structures, as well as permanently preventing the penetration of water into structures. A control unit produces a low voltage electrical charge, which is passed through electrodes in the form of probes or wires strategically placed within portions of the walls and/or floors which are wet.