

Alameda Open Air Theatre Gibraltar



AOP System



Industry: Entertainment.
Region: Gibraltar.

Summary: Changing Rooms, Office and Storage.

System and design: Delivered by PCL.

Timing: The design of the AOP system took 2 weeks. Structure was available for fit out 5 months after work starting on site.

Estimated drying time: Less than 3 months.

Success Criteria: The rear of the structure is a cavity wall and the floor a concrete slab. The changing room complex is set below the grassed seating area. Design layout according to proven design solutions for this structure. The roof of the changing room complex is not part of the installation.

Pulse Boxes: One AOP control unit was required for this project.

Problem

Alameda is Gibraltar's botanical gardens. It contains an open air theatre that is used throughout the year for a variety of activities. The audience are seated on a grassed area that covers the changing room and main office. The grassed area is watered regularly in the summer months. The changing rooms and office areas were extremely damp with 100% humidity in places (water running down the walls). There were also instances of rising damp. Upon inspection of the roof it became obvious due to its construction that the AOP system would not be suitable instead a water proof membrane was utilised. The AOP system was installed in the walls and floor. The cathodes were inserted into the ground over 3 metres below the seating area into the water source.

Challenges

The Alameda Botanic Gardens date from 1816 and the buildings within the open air theatre posed several engineering challenges. The roof and one wall were completely covered by soil and grass as the building is effectively built into the side of a hill. The walls are of a double brick cavity construction and the floor is a concrete slab design. Upon close inspection of the ceiling this involved the removal of the grass and soil that covered the roof, it was found that it is constructed of a hollow ceramic brick design which can not be protected by the AOP system. It was decided that the roof would be covered by a membrane, to protect the structure from root penetration. This is very common in green roof design. The walls and floor are protected by the AOP system.

The cathode placement was to the rear of the building and given the severity of the ingress problem, it was decided to place 4 electrodes below the level of the floor slab.

Contract

The contract to install the AOP system was given to a local contractor, with supervision by PCL. This led to several delays in completion. The final testing and electrical connections were undertaken by PCL.

Outcome

The first month of operation has all the signs that the system is operating to design specification. The current draw of the system is settling to a level of approximately 1.5 amps. The system will be monitored for the next 3 months when we expect the drying to be complete and the internal humidity will be below 90%

AOP system

The installation used 2mm grade 1 titanium wire and the cathodes are copper covered steel 1.2 metre probes. The feeder cables are 1.5 mm and 6 mm respectively. One AOP Pulse box is fitted.