

Project Information

Client:

Bristol City Council

Description:

Refurbishment Works to original Victorian vaulted ceiling, corroded beams and pillars.

Value and Duration:

£110,000 over 13 weeks

Date Completed:

February 2020

Smith and Brenson Case Study

Bristol South Swimming Baths

Brief Summary

Due to extensive leaks in the fabric of the roof at the South Bristol Swimming baths, the original Victorian vaulted ceiling below had sustained extensive damage. Some of the original panels had come loose and debris had even fallen into the pool below.

Smith and Brenson were awarded the project by Bristol City Council for both Scaffolding and Refurbishment works as part of an extensive tender process

Description of Works

Asbestos R&D surveys had to be undertaken given the age of the building and the need to disturb and replace old ceiling panels. This revealed the existence of AIB asbestos which had to be notified to the Health and Safety Executive before removal. Removal was undertaken and subsequent air tests conducted to ensure the environment was safe for works to commence.

A specialist scaffolding structural engineer had to be sourced and appointed to design the tubular scaffolding required which had to stand inside the swimming pool and reach up to the vaulted ceiling. Computer Aided Designs of the proposed scaffolding design and structural calculations were produced for

Description of Works - Continued

approval by all stake holders before erection commenced.

The swimming pool had to be drained to allow for the scaffolding and lined with OSB boarding to prevent any damage to the heritage internal tiling. The local water board had to be consulted on draining of the pool to ensure the excess water didn't overwhelm the sewage system, hence this element of the work was conducted in the early hours of the morning, outside of peak demand.

A vast amount of scaffolding had to be brought into the building without causing damage to the historic infrastructure, this meant adding protection to walls, ceiling and ornate features. Specialist lifting equipment had to be installed to the scaffolding for material hoists in order to remove damaged ceiling sections and lift new sections up to the ceiling working scaffolding lifts.

Consultation was undertaken with the Council's conservation team to agree the materials used in replacing the panels - not only did they have to maintain the aesthetics of the original items but had to withstand the moisture and heat radiating from the pool below. An MDF panel treated designed to withstand high moisture environments was eventually chosen as this could also be formed to the curvature of the vaulted ceiling.

The team started with removing any damaged panels and using the old items as templates for the new panelling, it quickly became apparent that many of the old roof rafters and fillets was rotten and required replacement. This meant hand carving new fillets for the vaulted ceiling to sit under the rafters to form the curvature of the original ceiling.

Talbot Owen, a professional fastening supplier, was employed to source the most suitable mechanical fixings for the new panels, they supplied a variety of size screws to allow for the differing depths of panels in a marine grade stainless steel with counter sunk 30mm washers.

Due to the corrosive nature of pools chemicals, moisture and heat, selecting the correct finishing products (paint) was vital to provide longevity and prevent peeling. The assistance of Crown Paints were sourced as specialists, they kindly sent consultants to site to try out products in controlled tests to establish which paint coverings performed best. They also used sophisticated 'magic eye' colour matching technology to establish the original colours used as these had to be replicated in order to satisfy the conservation team. The bespoke products and colours were mixed and a series of test painting conducted to ensure the products performed as expected.

Once satisfied and approved by the client the full batch of finishing products was ordered and applied.

On exposing the roof structure it was discovered that a number of the roofs original cast concrete roof rafters were badly spalled with debris falling onto the underside of the ceiling. A design was proposed and signed off by a structural engineer to clad the concrete members in stainless steel mesh with Maine grade fixings to hold the spalling in place.

Several steel pillars between the changing cubicles and the pool edge were badly corroded, exposing sharp edges. Stainless steel collars were designed out of 316 grade stainless steel to wrap the base of the pillars and cover the corroded areas.

Challenges

Keeping the aesthetics of the building in line with the conservation officers requirements whilst sourcing products which could withstand the unique corrosive climate of a swimming pool for a long period of time.

Installing the huge amount of scaffolding inside the pool meant propping floors below to ensure the weight was distributed.

The time constraints on the project were tight as the pool was closed to the public during the construction phase.

Part way through the project a heavy storm revealed further leaks in the building roof, these should have been repaired by a separately appointed contractor by the Council. This caused damage to newly installed panels which had to be replaced.

Solutions

We worked closely with the conservation team and experts in fasteners, wooden panel construction, paint finishes, structural engineers and scaffolding consultants to reach agreements on products to ensure the historical character was maintained and the structural integrity of the Victorian building was maintained.

Smith and Brenson held regular site meetings with all stakeholders to ensure the project programme stayed on time and worked hard to ensure it did.

Extra staff had to be assigned to the project due to damage caused by storms which allowed rain water access because of poor repairs undertaken by other contractors.

Completion

The project was complete in time ready for the grand opening which attracted significant and favourable local media interest.

The client and the conservation team were extremely happy with the finished product and Bristol City Council have appointed Smith and Brenson on numerous further projects as a consequence.

Before Photos



During Photos



After Photos

