

CASE STUDY

Roof Refurbishment

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PROJECT

MAIN STAND CHELTENHAM
RACECOURSE

STRUCTURE

CONCRETE BARREL
ROOFS

CLIENT

THE JOCKEY CLUB

CONTRACT



Home of arguably the greatest flat horse racing event in the world, Cheltenham Racecourse is set in a scenic location in a natural amphitheatre, just below the escarpment of the Cotswold Hills at Cleeve Hill.

The Jockey Club engaged Makers Construction to carry out a survey on the Main Stand Roof. The unique cantilevered reinforced concrete barrel roofs had visible signs of water ingress due to existing coatings failing allowing water to penetrate and to corrode the steel rebar within the concrete. Left untreated this could in time cause the roof structure to fail. There were also issues with water ingress in to the buildings and on to the punters below. Makers engaged Polyroof Products to carry out testing and produce a specification for the project. Polyroofs Protec flexible hybrid polymer was the selected product to carry out this 2300m2 overlay project.

Protec is a highly versatile, fast curing, fully reinforced cold liquid applied membrane system ideal for a wide range of roofing and waterproofing applications. The Protec *RapidCure* technology utilises catalyst, accelerators and inhibitors allowing full control over cure times across a wide range of temperatures all year round.

The seamless Protec membrane features the optimum combination of flexibility and toughness.

There were many difficulties and challenges regarding this project. Due to the location of this roof, height 18 -20 m and the ongoing use of the conference facilities meant an external access tower wasn't an option for the client.

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Before



Before



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During



During



During

A designated internal access route was devised for the delivery team with full protection to all surfaces and lifts. Makers engaged a crane company to lift all materials on to the roof in one hit, therefore accurate measures were taken to ensure all materials were ordered and onsite. Once the works were complete the waste was then craned to ground level.

The existing coating had failed in many places, this required stripping back by mechanical means to get back to a sound surface that was ready to coat. Due to the barrel of the roof the perimeter gutters running parallel were extremely difficult to access and required the operatives to lie down to coat the gutter bases. Each section of roof has its own large concrete upstand that divides each roof. These upstands have indentations and column sections which made it extremely difficult to detail and was a slow process, the liquid had to be carefully applied in thin coats so the product didn't slump.

Each barrel section of roof (65 in total) has an expansion joint, Makers and Polyroof had to come up with an effective detail for each of these joints to ensure continuous waterproofing. Plywood upstands were created to enable the operatives to effectively waterproof these areas creating a watertight finish.

The upstand to the external edge had a number of failing concrete areas. We highlighted these as an area of concern and repaired as part of the water proofing system.

This roof is heavily used for camera equipment during the main race meetings. The team had to carry out intricate area of detailing around the steel work that the cameras sit on. There is also a large amount of thick armoured cabling that was sitting in gutters and on parapets that had to be lifted and worked around.

Once works were completed a 20 year single point warranty was issued. This project has been recognised nationally by receiving a "Highly Commended" award at the Liquid Roofing and Waterproofing Association Awards 2023.



During



After



After

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