

SDG

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RESERVOIR ROOF REPLACEMENT CHURCHFIELD, CORK

MAIN CONTRACTOR

Sorensen Civil Engineering Ltd

ENGINEER

Irish Water

DATE

February 2023

PROJECT SUMMARY

SDG were proud to have played a part in the Churchfield Reservoir Roof Replacement project. This significant infrastructure upgrade project consisted of the challenging task of removing and replacing the existing reinforced concrete (RC) roof structure spanning a 40 mega-litre reservoir. Despite its complexity, the reservoir remained fully operational, ensuring a continuous supply of drinking water to Cork City.

The removal phase included the careful removal of 4,200m² of reinforced concrete roof. To allow for long term operation of the reconstructed roof, cutting-edge movement technologies were utilised through SDG.

THE CHALLENGE

The replacement of the Churchfield Reservoir Roof posed significant challenges due to its complex nature. This ambitious project involved the meticulous removal and subsequent replacement of the existing reinforced concrete (RC) roof structure spanning across the 40 mega-litre reservoir.

OUR SOLUTION

The removal process encompassed the careful extraction of more than 80% of the 4,200m² RC roof structure. To reconstruct the roof, Calenberg S65, S70, BiTtrapez, and Ciparall Sliding Bearings were employed. These innovative bearings enabled the concrete slabs to adapt and move in tandem with the structure over time, effectively minimising the potential for cracks and fractures in the slabs.

The Calenberg Ciparall® sliding bearings supplied are both combined sliding and deformation bearings with sliding and deformation layers which act separately from one another. They consist of elastomer layers combined with vulcanised reinforcement layers and a PTFE coating plus a sliding plate made of glass-fibre reinforced composite (GRP).

THE RESULTS

By utilising these advanced Calenberg bearing, the new roof structure exhibited improved structural resilience compared to the previous design. This enhanced capability allows the con-

crete slabs to withstand the dynamic forces and stresses exerted on them, ensuring long-term durability and stability.

The Churchfield Reservoir Roof Replacement project stands as a testament to the ingenuity and expertise required to execute such a complex undertaking. The successful completion of this project not only ensured the continued functionality of this vital infrastructure but also safeguarded the integrity of the clean water supply to Cork City, reinforcing Irish Water's commitment to delivering high-quality water resources to the community.

