



SIKA AT WORK

SIR CHRIS HOY VELODROME

GLASGOW

CONCRETE: Sika® ViscoFlow® 1000, Sika® Plastiment® 180

BUILDING TRUST



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Project Description

Admixtures from Sika Limited played a key role in the specialist concrete mix supplied by Hanson Concrete during the construction of the Sir Chris Hoy Velodrome in Glasgow.

A showpiece for the 2014 Commonwealth Games, the 2,500 seat Sir Chris Hoy Velodrome, forms part of the iconic new £113 million Emirates Arena and is operated by Glasgow Life. Featuring a 6,500 seat sports arena, health spa and a community sports hall, the state-of-the-art venue has been designed by architects 3DReid and built by main contractor Sir Robert McAlpine.

The indoor Velodrome, Scotland's first, features a 250 metres cycle track of Siberian timber, and has a regular capacity of 2,500 spectators, which can be increased by temporary seating for major events as required.

Project Requirements

Specialist concrete to enable the successful building of the service towers using slipform construction.

Sika Solution

600 cubic metres of the specialist concrete was supplied to contractors PC Harrington for the slipform construction of the service towers. Slipform construction involves vertically raising self-contained formwork on hydraulic jacks, in a continuous operation, while extruding the reinforced concrete section. It is a fast and cost effective solution suitable for the construction of core walls in high-rise buildings.

Successful slipform construction relies on a well-designed concrete mix, a skilled workforce and a well-planned delivery from the concrete supplier. The concrete needs to have controlled setting to match the rate of climb of the formwork. It requires a soft consistence to obtain full compaction around the steel and give an excellent surface finish but without segregation and grout loss. To retain the excellent surface finish, the concrete also needs to be 'drag free' as it leaves the formwork, eliminating any surface damage caused by friction. The inclusion of Sika concrete admixtures to the concrete mix allowed all these criteria to be successfully met.

A height of 4.5 metres a day was regularly met, ahead of the target figure, ensuring time-savings and cost and efficiency benefits on the project.

Project Participants

Owner:	Glasgow City Council
Architect:	3DReid
Main Contractor:	Sir Robert McAlpine
Slipform Contractor:	PC Harrington

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