

CASE STUDY: Murrayfield Curling Ltd

PROJECT: Ice rink floor

MURRAYFIELD CURLING LTD GETS ENERGY REDUCING ICE UPGRADE AFTER 40 YEARS IN OPERATION

Star Refrigeration were appointed as principal contractor for the replacement of Murrayfield Curling Ltd's ice rink floor in central Edinburgh. The new solution has significantly improved the levelness and efficiency of the ice floor while safeguarding it from future renovations.

Murrayfield Curling Ltd is a seven-sheet curling rink in the heart of the Scottish capital, which is home to more than 80 individual clubs and over 1600 members. The club hosts prestigious tournaments and events throughout the year. It has been operational for almost seven decades and open to the public in its current format for almost 40 years, with curlers using it to play matches and practice their skills all through the calendar year.

As a result, Murrayfield Curling Ltd has received a lot of traffic over the decades and Star Refrigeration were called in for some well-deserved renovation. Specifically, the floor had become uneven and the ice layers had thickened over the years, which meant the plant was inefficient due to increased energy consumption.

In the role of principal contractor, Star were in control of the execution of the rink floor replacement works on site, from the removal and controlled disposal of all of the existing elements to

the design, supply and installation of their replacements. In addition to the ice rink floor itself, Star also oversaw the installation of a header system designed to supply the cold and warm glycol mats, as well as a heat recovery pump skid to feed the latter and all of the associated pipework to connect the various components to one another.



Throughout the works, the main challenge was that the rink floor surface had become uneven and inefficient due to overuse, resulting in issues surrounding the irregular formation and thickness of the ice. The greater the thickness of the ice, the greater the impact in the ability of the plant to freeze the ice surface will be, thus occasioning higher running costs and difficulties with the playability of the surface.

Star Refrigeration provided consistent technical support and guidance to all involved parties and was able to bring the rink floor to the desired temperature and allow the facility to become operational.

The first phase of the project consisted of the removal and disposal of the existing ice rink floor. This included the current brine charge from the cooling floor, the rink headers and the site pipework, as well as isolation of the cooling mat pipework and the stripping away of the ice rink floor itself down to the sub-base. With the sub-base exposed, Star ensured that its condition was “made good” to comply with the new installation and consequently laid the standard composite floor. This consisted of a 1,200 gauge Visqueen vapour sealing membrane atop the base slab, with all joints (including those along the perimeter edge) adequately lapped and sealed. On top of that, the team laid two layers of overlapping insulation.



As well as putting the floor in place, Star also designed, manufactured, and installed a glycol

pump skid for the warm mat circuit. By pumping glycol through a heat exchanger which obtained its heat source from a warm water circuit and distribute it through the underfloor heater mat matrix across the ice rink.

Additionally, Star were also responsible for all mechanical and electrical services, including the supply and installation of all interconnecting pipework to and from the existing hire chiller.

Star Refrigeration’s project manager in charge of the works from start to handover, Stuart Rankin, lead an on-site team of up to 15 people in order to coordinate all subcontractors over the five-month period the project lasted. Mr Rankin said, “The new ice floor installed is first and foremost more level than the old one, creating more consistent conditions and improving its playability. This allows for a better curling experience, ensuring loyalty from existing customers and increasing the likelihood of attracting new ones.”

“The solid foundations put in place also safeguard the floors longevity, reducing the need for future maintenance or renovations, both of which are further guaranteed by the incorporation of a warm heater mat which will prevent any frost heave from damaging the floor in the future.”

 <p>Thornliebank Ind Est Glasgow UK G46 8JW</p> <p>T: +44 (0)141 638 7916 E: star@star-ref.co.uk W: www.star-ref.co.uk</p>	 <p>Thornliebank Ind Est Glasgow UK G46 8JW</p> <p>T: +44 (0)141 638 7916 E: dblackhurst@star-ts.co.uk W: www.star-ts.co.uk</p>	 <p>Wincanton Close Ascot Drive Derby DE24 8NB</p> <p>T: +44 (0)1332 861370 E: info@star-mesolutions.co.uk W: www.star-mesolutions.co.uk</p>	 <p>Thornliebank Ind Est Glasgow UK G46 8JW</p> <p>T: +44 (0)141 638 7916 E: info@i-know.com W: www.i-know.com</p>	 <p>Craftsman's Way Lowestoft Suffolk NR32 3LQ</p> <p>T: +44 (0)1502 562206 E: info@star-frost.co.uk W: www.star-frost.co.uk</p>
--	--	--	---	--

The finished product significantly improves upon the previous floor both in terms of quality and consistency. The new floor has also reduced the site's refrigeration plant energy consumption by up to 9% due to the consistent layer of ice - being significantly thinner than the previous floor allowed - that needs to be formed to deliver a level playing surface.

Star's Bellshill service and maintenance branch are currently in discussions with the site to agree a maintenance plan to ensure the system continues to run reliably and efficiently for years to come.

Paul Stevenson, Director of Murrayfield Curling Ltd
"We chose Star Refrigeration to carry out this project based upon their excellent reputation in the refrigeration and ice leisure community and we have been very pleased with their work."

"The old floor has been efficiently removed and disposed of and the new one put in place on time and within budget, meeting all our expectations and specifications. We're looking forward to many years of playing on this top quality new surface, allowing us to attract a wider number of curling enthusiasts and raising the standard of the game here in Edinburgh."

 Thornliebank Ind Est Glasgow UK G46 8JW T: +44 (0)141 638 7916 E: star@star-ref.co.uk W: www.star-ref.co.uk	 Thornliebank Ind Est Glasgow UK G46 8JW T: +44 (0)141 638 7916 E: dblackhurst@star-ts.co.uk W: www.star-ts.co.uk	 Wincanton Close Ascot Drive Derby DE24 8NB T: +44 (0)1332 861370 E: info@star-mesolutions.co.uk W: www.star-mesolutions.co.uk	 Thornliebank Ind Est Glasgow UK G46 8JW T: +44 (0)141 638 7916 E: info@i-know.com W: www.i-know.com	 Craftsman's Way Lowestoft Suffolk NR32 3LQ T: +44 (0)1502 562206 E: info@star-frost.co.uk W: www.star-frost.co.uk
--	---	--	---	--