

STAR TURNS BLUE ICE GREEN AT SOLIHULL RINK

Location:	Solihull, Birmingham
Equipment:	Azanechiller
Refrigerant:	Ammonia
Capacity	416kW
Temperature	- 10°C Ethylene glycol

Leading cooling solutions specialist Star Refrigeration has designed and installed a new energy efficient ice rink system using natural refrigerants at the Blue Ice Solihull Rink near Birmingham.

Star has a proven track record in ice rink systems spanning four decades, having designed over 80 percent of facilities in the UK leisure industry. Star worked on behalf of regeneration specialist St. Modwen on the Blue Ice contract.

The Solihull ice rink is one of the busiest in the UK, with around 150,000 skaters using the facility each year. The client was looking to replace the rink's cooling system with environmentally conscious and cost effective solution.

The existing rink refrigeration plant at the Solihull facility was in excess of 20 years old and operated on HCFC refrigerant R22, which is currently being phased out. The system refrigerant charge was in excess of two tonnes.

Oil-clogged under floor cooling pipes and frost heave had also caused problems with the existing rink floor at Blue Ice. To maintain a level surface the rink required thicker ice, which increased both the refrigeration load and power consumption of the ageing plant.

Star replaced the 57m x 26m ice rink floor and installed a new Azanechiller packaged ammonia refrigeration plant to replace the R22 system. Azanechiller operates with a small refrigerant charge (under 200kg) and has a total cooling capacity of 416kW.



The new ice rink at Blue Ice, Solihull

With zero ozone depletion potential and zero global warming potential, ammonia is used to chill secondary refrigerant glycol to -10°C. Glycol is then pumped through a network of cooling pipes embedded in the ice rink floor. The system ensures that the temperature, quality and hardness of the ice remains even and constant.

Blue Ice Solihull Rink's General Manager Stuart Cummings says: "The installation of the Azanechiller refrigeration system has proved to be very successful, both in terms of maintaining high quality ice for our customers to enjoy skating on and in the reduction of the related operating costs. Star Refrigeration's professionalism and expertise during the installation proved to be invaluable in ensuring a smooth transition from the old system to the new."

Star Refrigeration's ice rink specialist Douglas Scott says: "As Azanechiller is a self contained air cooled package unit, we were able to locate it externally and avoided expensive building alterations to the existing plant room. The chiller is designed to allow easy internal access, ensuring straightforward maintenance and cleaning. This impacts directly on the lifelong efficiency of the plant."

As the Blue Ice Solihull Rink is located close to residential areas, Azanechiller's compressors and drive motors were enclosed in acoustic housing to achieve low noise levels. The condenser fans also feature inverter controls permitting varied speeds to reduce noise levels and power consumption.



Star's air cooled Azanechiller

Azanechiller is a complete refrigeration package, with each unit pre-charged and factory tested ready for installation. It offers exceptional operating efficiency and has a robust construction designed to provide over 20 yrs of hassle-free performance.

Douglas Scott adds: "Azanechiller is ideally suited for retrofit projects where customers typically have limited space for new plant and need to keep project costs to a minimum."

Star developed the Azanechiller range of ammonia packaged chillers to meet cooling requirements in a wide range of markets. Suitable for cooling both water and glycol, Azanechiller is available as an air-cooled or water-cooled unit with cooling capacity from 200kW to 850kW.

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Case Study: Solihull Ice Rink