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Emirates Stadium gets hi-tech pitch with help from ABB

ABB supplied a variable speed drive that helps Arsenal Football club play in all weathers, while ensuring harmonics do not affect TV cameras covering the game.

An ABB industrial drive, supplied by ABB Drives Alliance partner Central Electrical, feeds an ABB motor used to power a fan that provides air to an under-pitch aeration system that promotes healthy turf and helps drain the soil.

The high-tech pitch at the new Arsenal Emirates Stadium was designed and built by John Hewitt of Hewitt Sportsturf Ltd, with heating, mechanical and electrical equipment provided by Arthur Pollard Ltd.

“Emirates Stadium will create a very different environment to Highbury,” says John Hewitt. “Paul Burgess, the Head Groundsman, and I worked together with the architects in the early stages to make sure they understood what grass needs to grow well. Because it is a completely new build, we can incorporate all the latest technology, which will help maintain the pitch in tip-top condition.”

The pitch at the club’s new Emirates Stadium is a hi-tech design with special and unique features provided by the Hewitt Sportsturf design in conjunction with heating and pipework specialists Arthur Pollard Ltd promote healthy turf and help to drain the soil.

Below the turf, the root system is made up of sand and various grades of gravel to form a permeable bed. The air pipe-work is situated in this gravel bed, above a wet heating system.

The air system can work in two directions. In the forward direction, it provides aeration through the gravel bed and through the root zone. Reversing the air system can provide drainage from the root zone down to pull moisture away from the surface.

The air system is powered by an extremely large fan in the plant room, which is fitted with a large ABB motor and a 160 kW ABB low harmonic drive. Low harmonics were essential to prevent interference with TV cameras and possible disruption of coverage of the games.

The plant room incorporates a micro-processor control panel. This communicates with the ABB drive, monitoring the air movement at ground level and adjusting it according to pre-set variables or the groundsman’s requirements. When no air is required, the ABB drive powers down the system to save energy.

As well as the drive and motor, ABB also supplied four packaged substations for the stadium, each complete with two 2000kVA cast resin transformers, 11kV ring main units and main low voltage switchboards, with a designed total load of 16,000 kVA..

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pushing the boundaries of e-mobility to contribute to a sustainable future. ABB operates in more than 100 countries with about 147,000 employees. www.abb.com



Caption: ABB supplied a variable speed drive that helps Arsenal Football Club play in all weathers, while ensuring harmonics do not affect TV cameras covering the game.

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