Case Study:

Colchester United´s Training Centre, Florence Park

blueflame

Energy Efficiency Excellence

Fields of green...

Like any large business in the 21st century, professional football clubs are expected to lead the way in protecting the environment.

Until July 2012, when work was completed on Colchester United's new permanent training centre, the first and youth teams had to rely on the amenities, and work within the schedules, at Essex University and the Garrison.

The Club's chairman, Robbie Cowling, had a vision: to provide much-needed facilities, which would complement the Club's 10,000-seat Weston Homes Community Stadium, and help further its ambition to regain its place in the Championship League. There was only one caveat; Cowling wanted his £3.5M investment to be a sustainable one: it should not only benefit Colchester United players but the environment too.

Control, integration and quality were our watchwords throughout the build. All the systems needed to complement each other and we needed to work with world class companies.

KEVIN BULL
Director, Blueflame

FAMILY TIES

After a protracted and complicated planning process lasting two years, permission was granted by Colchester Borough Council to build the centre. APH Projects acted as main contractor for the design and build of Florence Park (so-named in honour of Robbie Cowling's grandmother). The multifaceted build on a nine hectare site in Tiptree, Essex included: five high tech football pitches and associated drainage; a three-storey clubhouse designed to resemble a typical Essex barn; a car park and multiple soft landscaped areas. Although timescales were very tight, and Cowling made a number of design modifications during the build, the project was delivered in time for the new football season in 2012.

After competitive tender, Essex-based Blueflame was appointed to design, install and commission the M&E and renewable energy systems for the 685m2 centre, which would house meeting, training and physiotherapy rooms, as well as a gym, canteen and wash and change facilities.

It took four months from Blueflame's initial expression of interest to arriving on site to begin work on the installations. During the planning phase they received the news that Colchester United had been given Category 2 status under the new Elite Player Performance Plan (EPPP). The EPPP is a youth development scheme to help increase the number of home-grown players gain professional contracts. This was good for Colchester United, but to comply with the EPPP guidelines significant changes would have to be made to design of the wash and change facilities – already a major part of the plan – to separate the adult and youth areas. It wasn't quite back to the drawing board and Blueflame never lost sight of the bigger picture, which was to seamlessly combine sustainability with the practical demands of a training centre.

A Solar thermal and vast hot water storage deliver 80 showers a day economically.

B Florence Park under construction.

C Poor weather didn't delay completion of the build.

A

B

C

IN HOT WATER

With 80 showers in use virtually every day, running out of hot water wasn't an option, nor was running up large heating bills. The best system to deliver performance and energy efficiency at this level was a bespoke Oventrop solar thermal system. Eight OKF CK22 solar collectors were installed which would produce an output of 8.51MWh and provide 44% of all the hot water needed over the course of the year. For water storage two Oventrop 500L carbon steel, twin coil, ceramic-lined, hot water calorifiers were installed in the boiler room. A Regtronic multifunctional solar controller, with its preinstalled switching schemes for heating circuit regulation, ensured that 990L of water would be delivered to the showers at a maximum temperature of 50°C every day.

Thanks to this solar thermal system, the training centre will have reduced its carbon emissions by over three tonnes, that's the equivalent to the work of over 250,000 trees, by the end of the season.

Two Broag Quinta 90kW condensing gas boilers were installed to keep the centre warm, and the water hot when the solar thermal wasn't generating energy. Powerful yet light and compact (all Quinta Pro boilers measure h750mm x w500mm x d500mm), they were ideal for modular installation and the perfect choice for Florence Park where every square inch of available space counts.

LEADING LIGHTS

Blueflame wanted to ensure that the lighting could be controlled to make even greater energy savings so there really was only one answer – LEDs. Working closely with JCC Lighting, a system was designed to combine maximum efficiency with aesthetic appeal. 62 Skytiles were installed in the offices, corridors and changing rooms and are all operated by motion sensors. These innovative LED recessed panels, which each measure 600mm x 600mm, the size of a regular ceiling tile, use up to 60% less energy than fluorescent tubes. Skytile incorporates a light transmitter which works in a similar way to fibre optics; LED light enters from the sides and travels within the central core, bouncing off the outer surfaces, the surface properties ensure that all light is reflected back into the light transmitter and the light spreads evenly across the fitting. The net result is that each panel provides an output of 2,700 Lumens, which offers a 'like for like' comparison with a traditional 4 x 18W CAT 2 modular fitting. It also has a colour temperature of 4,700K, which is near to daylight and easier on the eye than the harsh bright light emitted by its fluorescent alternative.

Taking the most conservative estimate, each Skytile will provide 40,000 hours of use before it needs to be replaced. Even if it was on for eight hours a day, seven days a week, that's a lifespan of well over 10 years.

Despite the wet weather experienced over the winter months, there were few hold ups during construction. Building work, including pitch preparation, which began in April 2011, was completed and Florence Park was open for training by July 2012.

This won't just benefit the club's players, local footballers will gain too as one of the five pitches is for the use of the community.

ROBBIE COWLING
Club Chairman

If you´d like to find out more about Blueflame and the services we offer, please do not hesitate to get in touch:

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