

'Energy Station' does the *power* of good at Eton College



The installation of an innovative "Energy Station" is helping GRAHAM to reduce its carbon footprint and manage power demands more efficiently at Eton College.

In the summer, the privately-owned contractor was appointed to complete the Eton Sports and Aquatic Centre (ESAC), the first phase of the college's capital development scheme to improve indoor sports facilities for its 1,300 pupils. Local schools and community groups will also benefit from, and be inspired by, the state-of-the-art sporting and training environment.



A 78-week construction programme commenced in July 2020 and will see the creation of a 25m indoor swimming pool with diving facilities and a moveable floor, a multi-sports hall, as well as spectator and changing facilities.

The college, which is a preeminent Windsor-based boarding school for boys aged 13 to 18, is renowned for its forward-thinking approach. Across its vast estate, the school has invested in sustainable features and measures. For example, a ground source heat pump was installed at Bekynton which provides sustainable heating to the Jafar Gallery and Hall, Elliott Schools, Lyttelton Schools and Birley Schools. Additionally, photovoltaic (PV) panels, which adorn the distinctive parallelogram roof at the existing Queen's Schools campus, generate much of its power requirements.

This approach is embedded into the plans for the ESAC, with provision made for natural ventilation and PV cells on the sports hall's roof. Notably, a combined heat and power plant is also a key feature.

'Green credentials'

Demonstrating its own "green credentials", GRAHAM has partnered with renewable energy specialists, EnviroTech Energy Management, to devise a bespoke energy management plan that aligns the construction programme with Eton's environmental ethos.

Among the principal priorities was access to a viable alternative energy source, and a solution was identified in the installation of an EnviroTech Energy Station.

From the outside, its appearance is similar in size and scale to a shipping container - the mainstays of construction sites across the country. In contrast, the interior is much more than a storage area. Lined with reflective metallic insulation, it houses complex, integrated components that harness and streamline energy production.

The benefits are enormous.

Principally, the energy station provides an uninterrupted, continuous power supply to the site, with the capacity to flexibly meet variations in demand.

And no generators are required to make up for any potential shortfalls in the permanent supply required for running the site. This significantly reduces the carbon footprint and emissions.

With that, there are zero diesel costs, and noise levels are also considerably reduced to support the aims of considerate construction in the local community.

It is estimated that cost savings of around 35% are achieved from the utilisation of the night-time off-peak tariff, plus the associated savings in generator hire, fuel and maintenance costs.

GRAHAM Senior Project Manager, Neil Douglas, is delighted with the performance of the Energy Station so far and he is confident that, upon project completion, the cumulative outputs will be meaningful. He said:

"At GRAHAM, we have aligned our sustainability agenda with the UN Sustainable Development Goals and Goal 13, Climate Action, is all about promoting developments in cleaner energy. We are motivated to adopt and promote sustainable energy technologies, which is a core reason why we partnered with EnviroTech to introduce the Energy Station to our

operations at Eton College. Of course, we also recognise the emphasis the college places on environmental performance.

"The Energy Station has delivered more than just a reliable, consistent energy source. It also allows us to seamlessly ramp up and down our energy requirements based on the demands of a particular day. The benefits are clear to see and are making our lives easier. Noise has been significantly reduced in comparison to previous construction sites I have been responsible for, while the reduced air pollution is a real advantage. I am excited to see the compiled data and metrics, and the positive environmental impact, that will be recorded at the end of the programme."

Future-proof

Moving forward, the Energy Station will facilitate the charging of electric vehicles and plant on site.

At the end of this, or any, project, there is also the option for the unit to be retained by the client and embedded as part of the permanent infrastructure for a 20-year period. This could deliver further efficiencies, year on year, with minimal maintenance and running costs. Equally, the unit can be disconnected and relocated, before being set up to support the operations of another GRAHAM site.

EnviroTech CEO, Stephen Jones, has worked closely with the GRAHAM team at Eton College to ensure the success of the Energy Station. He added:

"From the outset, we recognised that GRAHAM is forward-thinking in its approach to sustainability. The company's alignment with the UN Goals demonstrated that to us. This is particularly important as the UK Government has also subscribed to the UN Goals, with the aim to generate at least 15% of its energy via renewable sources. Notably, construction continues to face many challenges including pollution from diesel generators, noise and the cost of electricity.

"Our Energy Stations intelligently and sustainably circumvent these issues. This is a game changer for construction sites up and down the country, and the fact that the stations can be wrapped after completion in a client's logo, or indeed camouflaged to stay hidden, means they can remain in place to continue to mitigate energy costs and to strengthen the client's green credentials. We are proud to be partnering with GRAHAM at Eton College and look forward to working together on future projects."



UN Sustainable Development Goals

GRAHAM has recently released its latest accounts and its strong financial performance is strengthened by a record £1.8bn order book. Moving forward, its strategy is to work in support of the UN Sustainable Development Goals – a global blueprint to achieve a better and more sustainable future for all.

Its focus is on positively influencing the SDGs most applicable to it in its role as a national leading contractor. Everything from carbon emissions, water reduction, social value, health and wellbeing, community engagement, apprenticeships and safe working, feed into and align with these SDGs.

GRAHAM Group Corporate Development Director, John McDonald, explains how the Energy Station at Eton College is just one example of how the business is rolling out sustainable measures that, collectively, will help it contribute to tackling climate change. He added.

“We see ourselves as a sustainable, responsible business, and the UN SDGs are helping us to prioritise and achieve our ambitious future targets. We are committed to introducing green technologies on sites to reduce the carbon generated from our activities. We believe that innovation and collaboration are critical accelerators in this regard. This is why the Energy Station at Eton College is so important. This is not a one off and it represents our strategy moving forward. The benefits from an environmental perspective are very encouraging for us.”

Further information

For more information on GRAHAM and its CSR commitments, please visit:

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