



ideal
HEATING
COMMERCIAL

Four Evomax 2 80kW boilers deliver 320kW of power.

Plasmor, Goole

CASE STUDY





Evomax 2 boilers deliver sustainable concrete curing.

Established in 1959, Plasmor is one of Britain's largest independent concrete block and block paving manufacturers, supplying over 300 concrete products to the building industry throughout the UK.

Putting sustainability first

Plasmor is at the forefront of innovative, sustainable block construction. All aspects of the company's product development, manufacturing and distribution processes, as well as its continuing investment in technical innovation, are intrinsically committed to the social, economic and environmental elements of sustainability.

Plasmor has already achieved some major milestones in sustainability, including cutting 423 tonnes of CO2 off its carbon footprint annually by investing in "auto-cut off" technology and operator engagement across all its production facilities; reducing raw material from quarries by 80% thanks to a unique expanded clay process; and reducing carbon emissions at one of its largest concrete production plants by 862 tonnes of CO2 annually.

One of its latest steps in its sustainability journey has been to implement a new curing process as its site in Goole in the East Riding of Yorkshire. Long standing

Ideal Commercial Heating customer Thorpe Eco has worked closely alongside concrete block curing and tile drying specialist ROTHO to produce what they claim to be the greenest curing process in the world!

Increasing capacity, decreasing gas consumption

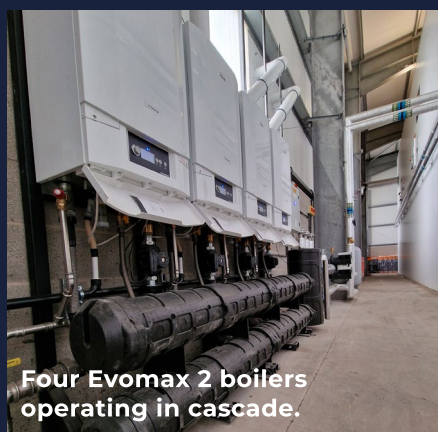
The original 2,400kW forced pressure jet hot water boiler installed at the Goole plant to heat the oven and deliver the humidity required for the curing process was significantly oversized and not energy efficient.

CASE STUDY FACTS: LOCATION: Plasmor, Goole, East Riding of Yorkshire | **BUILDING TYPE:** Concrete block manufacturing site
EQUIPMENT: Four Evomax 2 80kW condensing boilers on frame & header kit with magnetic low loss header and insulation.

Thorpe Eco and ROTHO have developed a new curing system that does not require the addition of humidity, and instead works at a lower temperature (35 to 40°C as opposed to 80°C), thus reducing the load required to just 240kW, but extending the curing process from a single day to four. By lowering the temperature and extending the curing timeframe, the humidity inherent in the concrete blocks is sufficient. To accommodate the extra curing time required, the capacity of the oven has been doubled and it is operated in zones.

With the energy load slashed, the existing boiler has been replaced with **four Ideal Heating Evomax 2 80kW** commercial condensing boilers operating in cascade. The boilers have been installed with a fully insulated Ideal Heating header kit with a magnetic low loss header to achieve hydraulic separation. "A magnetic low loss header means we are able to keep the system as clean as possible" explains Ashley Thorpe, Director of Thorpe Eco Ltd. "Even though the system is mainly stainless steel, with the Ideal header being made of steel. We just wanted to make sure no debris could get through the system with it operating 9 heat exchangers with small water ways."

The decision to opt for several smaller boilers rather than a single larger boiler was made by Thorpe Eco for several reasons: "By spreading the load over four boilers, they're always working at a partial load rather than a full load, which makes them a lot more efficient. It also means its more reliable and makes maintenance easier and less disruptive" states Ashley.



Four Evomax 2 boilers operating in cascade.

This innovative system has been designed and installed by Thorpe Eco, without the input of a consultant, yet Ashley Thorpe remains modest about his company's achievements: "It's quite a simple installation really, although we have produced our own BMS to directly control the boilers to deliver the heat needed by the oven. So, when the oven's working at 100%, the boilers know they need 80% of their power to achieve the load. And when the oven is running at the minimum load of 15 - 20%, the boilers know they only have to run at 10%. They basically modulate perfectly to the oven, rather than operating on/off. This stops a lot of wasted energy just being dumped from the oven into the atmosphere to maintain the correct process temperature, which was a real concern with the previous system."

Ideal Commercial Heating: the reliable option

Thorpe Eco has been installing Evomax 2 boilers for many years and their familiarity with them was one of the determining factors in product selection for the Plasmor project. "We look after about 15 schools and a lot of them have Evomax 2 boilers, so we work with them quite a bit. They are a very simple boiler to install and use. With Plasmor, this is our first time doing quite a large instal like this without a drawing or consultant diagram, so we wanted to use a boiler that we were familiar with and that we knew to be reliable, as well as one that most suited the installation."

But product wasn't the whole story in their choice: "The backup service was just as key to us. We're quite familiar with some of the Ideal Heating engineers that work on the commercial side and we know if we have a problem we can always get someone out, or we can always get it resolved. I'd say Ideal are market leaders when it comes to customer service. We can see they're investing heavily in things like training. They are second to none."

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Ashley Thorpe, Thorpe Eco.



Free commissioning



Made in the UK



Wall hung



BIM



NOx class 6



Flueing options

Terms and conditions apply: * 2 year warranty extended to 5 years if commissioned by Ideal Heating.

Delivering ground breaking results

Thorpe Eco had predicted a 75% reduction in Plasmor's gas consumption at the Goole site using the new block curing system, which they equate to the carbon saving achieved by installing 450 domestic heat pumps. It's early days – the new process has only been running for two months – but this figure is actually closer to a 90% reduction; an incredible reduction by any means.

For Plasmor, this has obvious cost as well as sustainability benefits, but the new system also provides them with greater flexibility with regards to processing time. For their customers – primarily in construction – they benefit from a greener building material; one that is locally produced and has a very low carbon footprint.

Future proofing

With these incredible achievements, you might think Plasmor and Thorpe Eco would be happy to sit back for a bit, but the two companies are already

planning on the next stage of decarbonisation of the curing process through the addition of Ideal Heating ECOMOD 290HT natural refrigerant heat pumps powered by solar panels.

"We wanted to see that the new system could deliver on the gas side to start off with" explains Ashley "and then collect data from the BMS system to find the average output of the boilers to enable us to size the heat pumps accordingly. Again, we want to be able to not just offer one big heat pump, but to operate several smaller ones in cascade. We want to be able to modulate them so when the demand is lower, we're not wasting energy. At peak loads, the boilers will kick in."

The ECOMOD 290HT monobloc air source heat pump is able to achieve high temperatures up to 75°C, whilst benefitting from an ultra-low global warming potential (GWP) of just three as a result of the use of R290 natural refrigerant, making it an ideal choice for the Plasmor site.

"By spreading the load over four boilers, they're always working at a partial load rather than a full load, which makes them a lot more efficient."

Ashley Thorpe, Thorpe Eco.

Available in four chassis sizes and six outputs ranging from 15kW through to 65kW, it can be used in cascade and can also be installed alongside other Ideal Heating commercial solutions, including the Evomax 2 boiler, to build a low carbon hybrid heating system.

Support and contacts

Commercial Products

Sales, orders, availability, literature and pricing

T: 03330 040 393*

E: commercial@idealheating.com

*Calls cost no more than calls to geographic numbers (01 or 02) and will be included in any inclusive minutes you have with your telephone service provider.

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