Case study provided by GoGaS Goch GmbH & Co. KG, Dortmund, Germany

Uniting a long tradition of German engineering and the ambition to actively cut energy consumption and reduce CO2 emissions worldwide, GoGaS is one of the international leaders in highly energy efficient heating.

GoGaS®
Ecothermal Engineering

Saving Energy with GoGaS Condensing Technology

Smart heating systems can be used to solve even the most complex problems. Take the example of a production hall built in 1980, needing renovation for the purpose of improving energy efficiency. All those involved are very satisfied with the results – comfortable heat is now distributed ideally throughout the hall. The energy costs have been reduced considerably and the carbon dioxide emissions have been sustainably decreased.

THE CUSTOMER:
MICHELS (GELDERN, GERMANY)

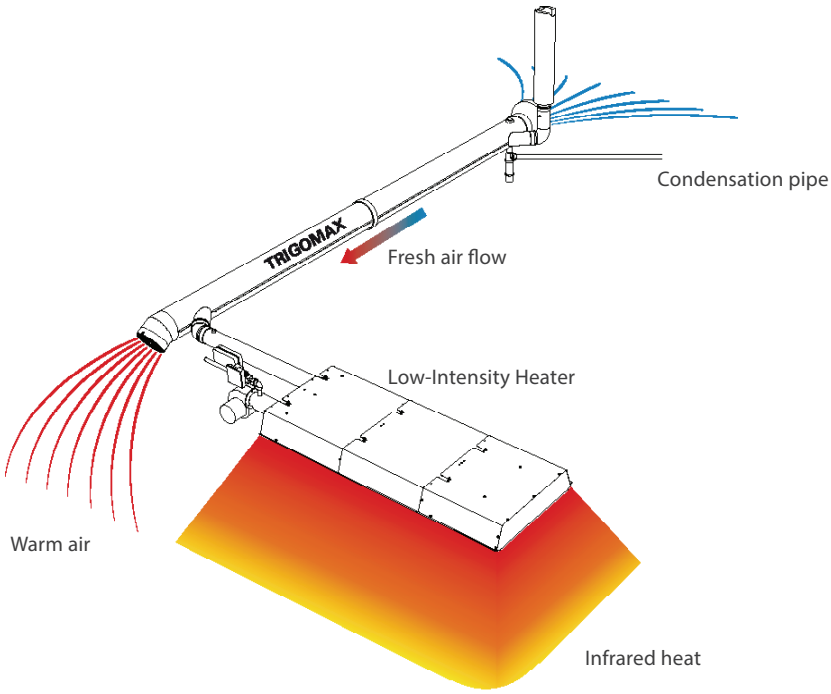
Michels' construction equipment and vehicle construction services make them one of the full-liners in the construction equipment market for earthmoving and excavation. Its HGV division has been expanded consistently with dumper trucks, flatbed trucks and box trucks, tippers and roll-off trucks, which complement now the product range for the transport sector. One of the company's greatest strengths is its problem-solver mentality. And this is precisely what Michels expects of its suppliers as well.

THE CHALLENGE:
PROVIDING HIGHLY EFFICIENT HEATING

The production hall built in 1980, together with all of the problems arising from the age and usage needed highly efficient heating. Until the renovation, eight large gates had allowed the heat produced by thirty year old warm air generators to escape unhindered.
The constant input of cold air into the working area caused employee dissatisfaction and very high heating costs for decades. Also, most of the heat gathered below the ceiling whereby higher placed working areas could easily reach temperatures of 25 °C.

The 100 x 22 metre hall is used six days a week, ten hours a day. Special shifts and working longer hours is normal.

The management had examined various heating concepts. Mr. Michels was immediately impressed by the solution using GoGaS low-intensity heaters. GoGaS is specialized in heating systems and process heat, and ideally positioned to address specific customer demands. The company offers innovative heating solutions – environmentally friendly and extremely energy efficient. The latest GoGaS development, the condensing low-intensity heater TRIGOMAX, has established itself on the infrared heater market as the presently most efficient heating system.



THE SOLUTION:
CONDENSING LOW-INTENSITY HEATERS

GoGaS worked closely with its client Michels to develop an innovative installation design. Eight DSU 40/2 type gas-fired infrared heaters are used, the novelty being in their combination with the new TRIGOMAX. This flue gas heat exchanger is GoGaS' own development and is a first in enabling the use of condensing technology for low-intensity heaters. The hot exhaust gases from the low-intensity heater are cooled using ambient air. The resulted heat is transferred into the ambient air with the help of a fan by way of countercurrent heat exchange. Depending on the loads placed upon the system, the temperature of the exhaust gases measured after the TRIGOMAX is between 35 and 43.4°C.

The heating system was fitted and commissioned in 2012 within a very short time and without any disruption to production or maintenance.

THE ADVANTAGES:
LOW ENERGY COST AND HIGH COMFORT LEVEL

The eight TRIGOMAX condensing low-intensity heaters are separated into two control circuits. The system is controlled by GoGaS' Infratronic regulation system. Using GoGaS' InfraControl software, which is integrated into the customer's network, the system can be remotely controlled by authorised PCs. Overtime? No problem. Outside of normal working hours, employees can use a simple working time button to switch on the heater for an hour at a time to work at normal temperatures.

THE RESULT:
MAXIMUM ENERGY SAVINGS

Up to 50% energy savings in comparison to the replaced warm air generators and uniform heating of the various working areas are the proud results of the renovation. The infrared radiation heats the surface of tools and vehicles, which in turn transfer their heat to the surrounding area. Gates opened for manoeuvring now no longer cause all the heat to escape. The hall is reheated quickly and cost-effectively. Thanks to the condensing low-intensity heater, the ground-floor area is now held at a constant and pleasant 16°C, while the employees in the upper working area don't have to sweat but rather enjoy temperatures between 16 and 18°C. The employees were enthusiastic from the get-go.

The master chimney sweeper was highly impressed too. The use of the new TRIGOMAX system means that record values are achieved with directly gas-fired space heating systems – 105% efficiency (considering LHV) resp. 95.5% (considering HHV) – even at full load operation. With this sustainable system, energy use is cost-effectively kept below the limits set by the German Energy Saving Regulation and kept in compliance with the German Renewable Energies Act.

This example shows how smart heating systems can be used to solve even the most complex problems. The optimum distribution of the comfortable heat, the considerable reduction in energy costs and the sustainable reduction in CO2 emissions ensure that all those involved have something to gain.

GoGaS®

Ecothermal Engineering

GoGaS Goch GmbH & Co. KG
Zum Ihnedieck 18
D-44265 Dortmund (Germany)
Telefon + 49 231 46505-0
Telefax + 49 231 46505-88
info@gogas.com
www.gogas.com