

## Long-term guarantee gives planners a reliable basis for calculation

A unique assurance of guarantee by ELCO made it possible to implement an energy-saving contract project in Weiden (Oberpfalz). The contracting helped the town to open up extremely economical potentials for savings in their properties. The ELCO service contracts covered the entire run time of the project of up to 12 years. This gives the contractor, an association of engineers and planners, a long-term, reliable basis for calculation and planning with regard to the heating equipment. In total, the order in Weiden embraced 44 of the latest gas condensing boilers. The result now is that the increase in energy efficiency reduces the energy consumption and the CO<sub>2</sub> emission, year in, year out, by more than 25 %. The savings in energy costs are distributed, with the contractors financing their costs and the town council its investments.

### Customer

Public Utilities Department,  
Weiden (Oberpfalz)

### Contractor

Association for  
Energy-saving contracting (ESC)



## BENEFITS

### Efficiency

- Realisation of potential for energy saving in the town through energy-saving contracting
- Reduction of energy costs in 28 properties by up to 27 %
- Quick amortisation through energy savings and reduced operating costs

### Convenience

- Compact construction, low space requirement
- Extremely low emissions and quiet operation
- Flexible adjustment of performance through wide modulation range

### Reliability

- One hundred percent operating reliability through cascaded system
- Calculable maintenance costs through Longlife flat rate service contract
- Guaranteed service dispatch within 3 hours

## Modern heating technology opens up great potential for energy savings

### The starting point

#### 28 properties with excessive energy consumption

The heating systems in Weiden, as in many other municipalities, were technically obsolescent and over-proportioned. High waste-gas temperatures, lack of efficiency through the year and high losses through heat dissipation meant that, year after year, tens of thousands of Euros more than necessary were spent on heating costs. Those responsible at the Town Council were well aware of this, and that a lot of energy can be saved with modern technology and optimisation of the hydraulics and the mode of operation. But who was to provide the investments? The problem, not only in Weiden, was the narrow budget.

### The solution

#### The Association for Energy-saving Contracting (ESC) decides on ELCO

The contractor in Weiden was an association of planners and engineers with an office in Berlin. They chose ELCO's well thought out overall solution in preference to competitors of repute. One convincing argument was the comprehensive service package with its fixed price and guarantee assurance for the entire project run-time of twelve years. In addition, ELCO was able to meet the planners' profile with regard to equipment, function and power of the delivered heating boilers.

### The new system

#### Gas condensing boiler with stainless-steel surface burner

The Weiden order embraced 40 floor-mounted gas condensing boilers with customer-specific modifications, and four wall-mounted gas condensing boilers.

For optimal regulation of the performance, 17 of the systems were implemented as cascaded solutions. Because of special requirements, the boilers had to allow an operating mode with very great differences between flow and return temperatures without suffering damage.

In addition, there were to be communication and control capabilities for centrally controlled, power-dependent operation of the boilers. The contractor can thus fully control each boiler from his central office in Berlin.

#### Temperature resistant and compact

The contractor relies on a wide spread of temperatures, in order to be able to transmit a lot of energy with a low volume of water. At the same time, the return temperatures should be as low as possible, so as to allow efficient utilisation of the condensation. These extremes - very cold water into the boiler, and very hot water out of it - presents material problems for many of the boilers on the market.



# Efficient, compact heating equipment with centralised controls

## RENDAMAX 3400: Fast heat transfer, flexible mounting

RENDAMAX 3400 gas condensing boilers offered the ideal solution because of their special design, with low volumes of water and compact heat exchangers for fast, direct, efficient heat transfer.

Further benefits are the low space requirement, reduced electricity consumption, and fast, flexible heat transmission. And one other aspect turned out to be important. The access paths to the boiler rooms were often very narrow, but because the ELCO boilers can be stripped down and reassembled quickly and easily on site, this caused no problems.

## Optimised waste-gas systems

Finally, special attention was paid to the waste-gas systems – for the purpose of optimising the combustion process, and to prevent a negative influence on the calculated performance data right from the start. ELCO suggested always operating the systems with under-pressure. With appropriate air-bleeder equipment, the behaviour of the chimney can then be kept under control at all times.

## Services to match the system:

### Longlife 12 Plus with guaranteed technical availability

The Longlife service package ensures reliable operation of the overall system with exactly calculable costs.

#### • Cost transparency

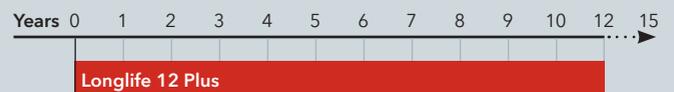
The 12-year system contract allows exact calculation of the maintenance and repair costs on the basis of annual lump sums with constant costs. All original ELCO replacement and wear parts are included.

#### • Protection of investment

With system commissioning and the annual maintenance, the entire system is in perfect condition at all times.

#### • Reliability

Reliable operation of the gas condensing boilers is guaranteed for 12 years. In addition, ELCO offers repair of faults within 24 hours, 365 days a year, including nights.



## Weiden in Oberpfalz

### Situation:

Weiden is a town with county rights in the Eastern Bavarian district of Oberpfalz. It is 100 km to the East of Nuremberg, and 35 km West of the Czech border.

### Population:

Some 42,000 people live in Weiden, in an area of 70.5 km<sup>2</sup>.

### Importance:

In terms of the Bavarian State Development Programme, Weiden is a major centre and, with a hinterland of some 300,000 people, it is the trade and service centre for the region of Northern Oberpfalz.

### Economy:

Companies that are known beyond the borders are the mail-order company Witt Weiden, the Hotel Porcelain Bauscher Weiden company, and the porcelain manufacturer Seltmann Weiden. Weiden is also the headquarters of the company Auto Teile Unger.

# Reliable, flexible, easy to install: Gas condensing boiler R600

## The R600

### The solution for the wider power range

R600 is the new generation of gas condensing boilers, and was developed specially for higher power requirements in trade, industry and public housing. The boilers in the R600 series combine extreme system flexibility with excellent quality and a unique Longlife guarantee for up to 10 years.

### Stainless-steel quality for sustained, high efficiency

In the R600, stainless-steel heat exchangers and the patented combustion technology ensure minimal wear and sustained, high efficiency – and that for decades! Thanks to excellent heat transfer, the R600 achieves a standard efficiency factor of 110.4 %.



Technical Data R600		601	602	603	604	605	606	607
Rated heating power at 80/60 °C	kW	142.1 - 23.3	190.1 - 39.5	237.2 - 39.5	285.2 - 39.5	380.2 - 76.6	475.3 - 76.6	539.0 - 76.6
Rated heating power at 40/30 °C	kW	150.7 - 26.7	201.6 - 45.2	251.4 - 45.1	302.3 - 45.2	403.1 - 87.7	503.9 - 87.7	571.5 - 87.7
Rated heating load	kW	145.0 - 24.5	194.0 - 41.5	242.0 - 41.5	291.0 - 41.5	388.0 - 80.5	485.0 - 80.5	550.0 - 80.5
Standard efficiency factor at 40/30 °C	%	110.4	110.4	110.4	110.4	110.4	110.4	110.4
Total height	mm	1,480	1,480	1,500	1,500	1,500	1,500	1,500
Total width	mm	670	670	670	770	770	770	770
Total depth	mm	1,220	1,375	1,585	1,335	1,550	1,700	1,850
Weight (empty)	kg	295	345	400	465	535	590	650
Water content	l	27	31	35	61	68	75	82
Max. permitted water pressure	bar	8	8	8	8	8	8	8
Waste gas temperature at 80/60 °C	°C	78	78	78	78	78	78	78

- Maximum reliability of installation through pre-assembled system kits.
- Unique reliability through 10-year Longlife guarantee.
- Sustained high efficiency through corrosion-proof stainless-steel heat exchangers.
- Highly efficient (110.4 %).
- Environmentally friendly through extremely low pollutant emissions.
- Convincing modulation range (1:7).
- Extension to up to 8 boilers and 15 mixer circuits possible.
- Simple assembly.
- Unusually quiet operation.
- Low weight.

ELCO GmbH  
Dreieichstraße 10  
D-64546 Mörfelden-Walldorf

Tel. +49 (0) 61 05/9 68-0  
Fax +49 (0) 61 05/9 68-119  
www.elco.net