

Economical cosiness for a luxury hotel

Innovative hotel concepts and a wide variety of relaxation facilities are the hallmark of the high-class hotels and resorts of the Lindner Hotel Group. One of their top establishments is the Lindner Congress Hotel, Düsseldorf. Excessive energy costs and warmth that no longer met modern requirements on comfort made it necessary to renovate the heating system. Two ELCO modulating gas condensing boilers formed the heart of the new system. The result was flexible, comfortable heating and warm water that met all requirements - with the highest reliability and at calculable cost. The renovation was carried out parallel to the daily running of the hotel.



Customer

Lindner Hotels AG
Emanuel-Leutze-Straße 17
D-40547 Düsseldorf

Executing technical partner

F. Schwenzer GmbH & Co. KG
Ulmenstraße 5
D-40476 Düsseldorf

BENEFITS

Efficiency

- Reduction of operating costs by 20 %
- Quick amortisation through energy savings and reduced operating costs

Convenience

- Flexible adjustment of power through wide modulation range

- Hygienic warm water processing
- Quick installation parallel to daily running of the hotel

Reliability

- One hundred percent operating reliability through cascaded systems
- Calculable costs through maintenance contract
- Guaranteed service dispatch within 4 hours

Renovation: Lindner Congress Hotel, Düsseldorf

From standard boilers to modern gas condensing solution

The starting point

The old heating no longer met the requirements

A standard boiler with a jet burner and return riser and a power of 1 Gcal served to cover the base load. A second boiler of the same type covered the peak loads. Heating and warm water processing were distributed over 3 equipment rooms.

Hotel Lindner had rigorous requirements on warm water and heating comfort

The energy costs made up too large a portion of the overall operating costs of the hotel. The convenience of the heating and warm water did not meet the requirements. Hotel Lindner therefore decided on a new, modern heating solution. The greatest challenge was that the renovation was to be carried out parallel to the daily running of the hotel.

- Hotel with 230 rooms, 10,500 m² heated area
- Energy consumption: 3,900 MWh

Equipment	Old system
Boilers	Standard boilers with jet burners
Rated power	2 Gcal/2,400 kW
Total power	< 80 %
Buffers	4 warm-water buffers of 2,000 litres each with external heat exchanger
Total energy consumption	3,900 MWh per year



The new system

Cascaded gas condensing boilers

Two RENDAMAX 3603 gas condensing boilers are arranged in a cascade. This gives a total power of 1,692 kW, which is adjusted by modulation. The condensing boilers are of split HT/LT construction. This makes it possible for some 75 % of the annual heating operation to be kept within the condensing range. The heating solution achieves a standard efficiency factor of 106/109.8 %.

The new heating system further reduces the temperature of the waste gases to below 80 degrees. Stand-by losses are reduced by the gradually raised boiler temperature. The central heating and the warm-water processing are located in 2 equipment rooms. The harmonised, modular construction simplifies installation. It was possible to maintain the daily running of the hotel.

Equipment	New system
Boilers	2 R 3603 gas condensing boilers, cascaded
Rated power	2 x 846 kW
Total power	1,692 kW
Standard efficiency factor	106 %/109.8 %
Buffers	4 high-performance buffers of 1,000 litres each with external heat exchanger
Total energy consumption	3,200 MWh per year



Consistent calculation and planning through fixed-price Longlife Service Package

The services to match the system:

COMFORT Service for flexible coverage

With the COMFORT Service, the new heating system is always optimally maintained. Fault-free operation is assured year after year.

• Cost transparency

The COMFORT maintenance package protects the Hotel Lindner for at least 1 year from increasing maintenance costs. At the end of each year, the contract is automatically renewed for a further year. Signing the contract at commissioning prolongs the guarantee period to 5 years, including original ELCO replacement and wear parts.

• Protection of investment

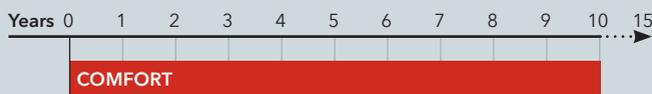
System commissioning and the annual maintenance keep the entire system in perfect condition at all times.

• Reliability

The COMFORT Service offers everything necessary for reliable operation, from the annual maintenance with defect removal free of charge (24 hours a day, 365 days a year) to the main inspection.

Remote monitoring minimises the risk of failure

The existing remote monitoring system was taken over by ELCO. This permits remote diagnosis at any time and from anywhere, even before the operator of the heating notices anything. The risk of damage through failure of the heating is thus minimised.



Hotel Lindner AG

One of the few family-owned hotel groups.

Hotels

33 attractive business addresses, relaxation oases and sophisticated golf and sports hotels all over Europe.

Boarding houses

5 (3x Düsseldorf, Frankfurt and Leipzig).

Rooms

A total of 4,131 (as of 12/2008). Since the year 2000 alone, the number of Lindner Hotels has tripled.

Baths

Hot bath and bathing landscape "Alpentherme", Leukerbad.

Employees (as of 12/2008)

2,150 in Germany, Austria, Switzerland and Spain.

International marketing cooperative

WORLDHOTELS



LINDNER
HOTELS & RESORTS
NICHT NUR BESSER. ANDERS.



Renovation: Lindner Congress Hotel, Düsseldorf

RENDAMAX 3600: Gas condensing boilers for highest efficiency

The RENDAMAX 3600

Double condensation for high energy utilisation

The RENDAMAX 3600 low-temperature gas condensing boilers offer convincing figures at an attractive price in the upper performance range of 639 to 1,043 kW. Thanks to double condensation through a smooth-pipe and a ribbed-pipe heat exchanger, the standard efficiency factor of the RENDAMAX 3600 is 109.8 %. All parts that come into contact with condensation are made of stainless steel, and are therefore extremely resistant to corrosion. There is no return temperature limit. A three-stage boiler-circuit pump is installed ex works.

- Compact system unit comprising boiler and burner.
- Modulation ratio 1:4.
- High standard efficiency factor (109.8 %).
- Extremely low emissions.
- Particularly quiet operation.
- Timer and weather-influenced controls for up to 14 mixer circuits.
- Integration in existing control systems and factory master control systems possible (DDC 2-10 V).
- Low weight.
- Built-in premix burner.



Technical Data			R 3601	R 3602	R 3603	R 3604	R 3605
Power, full load	at 80/60°C	kW	639	747	846	945	1,043
Power, minimum load		kW	183	213	242	270	298
Standard efficiency factor	at 40/30°C	%	109.8	109.8	109.8	109.8	109.8
Width overall		mm	1,330	1,130	1,130	1,330	1,330
Height overall		mm	1,405	1,405	1,405	1,405	1,405
Length overall, including connections		mm	2,265	2,653	2,653	2,653	2,658
Weight		kg	890	1,040	1,150	1,280	1,410

Prepared for solar energy

The heating solution for the Hotel Lindner is prepared for optional retrofitting of a thermal solar plant. For this, 20 flat collectors with a gross area of 46 m² were installed. It was possible to claim the BAFA subsidy for solar collector plants for this enhancement. There are also benefits from the KfW climatic protection fund and regional subsidisation programmes.

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