

## Renovation: Castle of Hohenzollern

# Cosy, modern warmth behind historic castle walls

The Castle of Hohenzollern near Hechingen is the ancestral home of the Prussian-Brandenburg and the Princely-Catholic lines of the house of Hohenzollern. It is one of the most beautiful and most visited castles in Europe. In addition to the displayed rooms, historically important works of art from the collection of the house of Hohenzollern await your visit. The treasure chamber in the castle houses, among other things, the crown of the kings of Prussia and many more mementos of Frederick the Great and Queen Louise. Many cultural events are also held in the castle courtyard all year round. Renovation of historic and very unusual buildings like Hohenzollern Castle require careful planning. ELCO therefore assisted the executing specialist firm of Restle from the beginning to the implementation of an individual, tailor-made heating solution.



### Customer

Consortium  
Fürst von Hohenzollern  
Karl-Anton-Platz 7  
D-72488 Sigmaringen

### Executing specialist partner

Joachim Restle  
Schlatter Straße 51  
D-72379 Hechingen

## BENEFITS

### Efficiency

- Utilisation of the existing liquid gas
- Flexible adjustment of output through wide modulation range
- Standard efficiency factor 111 %

### Convenience

- Fully electronic, convenient controls
- Low weight - simple installation

### Reliability

- Fault-free operation is ensured afresh every year
- Calculable costs through maintenance contract
- Guaranteed service dispatch within 4 hours

## Renovation: Castle of Hohenzollern

# From frozen oil lines to reliable gas condensing heating solution

### The starting point

In winter, the oil lines frequently froze. Apart from that, the oil consumption was very high, making operation uneconomical, so the operator regarded renovation as inevitable. It was therefore decided to avoid these problems with a modern gas system. Liquid gas was already being used for cooking in the castle, and as there was no connection to the natural-gas mains, this was the obvious choice of fuel. In addition, a number of regulations for listed buildings had to be taken into account.

### The new system

As part of the development of the casemate (a vault in the fortress wall) the administrators of the Castle of Hohenzollern decided to modernise the heating system with ELCO. The heart of the new heating solution is the TRIGON L. This is suitable for renovation projects or for use in commercial and public buildings. A high modulation ratio ensures an optimum standard efficiency factor of 111 %. The TRIGON L has convenient, fully electronic, weather-dependent controls and a pre-mix burner. A tremendous advantage is its light weight, which made delivery and set-up quick and easy, even in this case with the unusual, historic interior.

Equipment	Old system
Boiler	One 30-year-old oil-fired boiler with oil fan burner
Total power	160 kW

Equipment	New system
Boiler	TRIGON L
Rated power	19.7-96.3 kW
Standard efficiency factor	111.0 %
Modulation	1:5



## The services to match the system:

### COMFORT Service for flexible protection

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

#### • Cost transparency

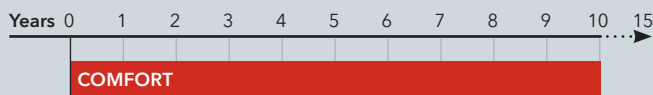
The COMFORT maintenance package protects the Castle of Hohenzollern from increasing maintenance and repair costs for at least 1 year. At the end of each year, the contract is automatically extended for a further year. If the contract is signed at commissioning, the guarantee period is extended to 5 years, including original ELCO replacement and wear parts.

#### • Protection of investment

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

#### • Reliability

The COMFORT Service offers everything that is necessary for reliable operation, from the annual maintenance with free fault removal (round the clock, 365 days a year) to the main inspection.



## Castle of Hohenzollern

### Situation

The castle is situated on the Hohenzollern, an isolated, prominent, conical hill 855 meters high. Geologically, it is a stack that has been cut off from the escarpment of the Swabian Alb; geographically it gives its name to the region surrounding it: the Zollernalb.

### Form

The complex covers almost the whole hilltop. Its four main elements are the fortifications, the castle buildings, the chapels and the castle garden.

### Owner

Two-thirds of the Castle of Hohenzollern belongs to the Brandenburg-Prussian line of the house of Hohenzollern, and one-third to the Swabian-catholic line.

### Use

Today, the Castle of Hohenzollern is a tourist attraction with more than 300,000 visitors a year. Since 1954 the castle has also been used by the Princess Kira of Prussia Foundation. This organisation arranges holidays for needy children.



## Renovation: Castle of Hohenzollern

# TRIGON L: The gas condensing boiler for maximum performance

### The TRIGON L

Where many condensing boilers reach their limitations, the TRIGON L opens up new room to manoeuvre. Thanks to its maximum power of 120 kW, this extremely compact gas condensing boiler has enough in reserve to supply even larger buildings conveniently and reliably with heat.

- Wide modulation range.
- Optimum standard efficiency factor (111 %).
- Fully electronic, weather-dependent, convenient controls.
- Extremely low pollutant emissions.
- Built-in pre-mix burner.
- Stainless-steel heat exchanger.
- Particularly quiet operation.
- Low weight, simple set-up.
- Quick assembly.
- Maintenance and service-friendly.



Technical Data			65	85	100	120
Rated heating power	at 80/60°C	kW	9.4 - 59.1	15.6 - 78.0	17.6 - 87.8	22.0 - 109.8
Rated heating power	at 40/30°C	kW	9.4 - 64.7	17.5 - 85.6	19.7 - 96.3	24.7 - 120.6
Rated heating load		kW	8.6 - 60.7	17.5 - 85.6	19.7 - 96.3	24.7 - 120.6
Standard efficiency factor	at 40/30°C	%	110.7	111.0	111.0	111.0
Height overall		mm	1,120	1,120	1,120	1,120
Width overall		mm	710	710	710	710
Depth overall		mm	538	538	718	718
Weight (empty)		kg	115	120	145	150
Water content		l	6.6	8.4	10.3	12.0
Max. permitted water pressure		bar	3	3	3	3
Waste gas temperature	at 80/60°C	°C	70	70	70	70

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](http://www.elco.net)