

## Two historical buildings benefitting from the most modern heat comfort

The "Hôtel de Ville" in Lyon is one of the city's most important historical monuments. It is found between Place des Terreaux and Place de la Comédie, directly across from the opera. The building has been protected as a historical monument since 1886. The "Opéra Nouvel" houses the National Opera of Lyon. The opera house was originally built in 1831, before well-known French architect Jean Nouvel put significant time and effort into converting it between 1985 and 1993. As a result, the building was then named after him.

The heating systems of the two buildings were, like in many other communities, technically outdated and oversized. The result was high exhaust gas temperatures, discomfort and significantly excessive heating costs. ELCO had scored with the city for many years with its reliable customer service. The old system registered virtually no disruptions. This also played a role in the deci-



sion to go with a modern heating solution by ELCO in the course of the renovation. Two RENDAMAX 3504 gas condensing boilers today provide both buildings with central, energy-saving heat.

### Customer

Ville de Lyon  
1, Place de la Comédie  
F-69001 Lyon

### Planning

Services Techniques -  
Direction de la Construction  
Place Louis Pradel  
F-69205 Lyon

BE Tellitech  
62 Rue du Professeur Roux  
F-69200 Venissieux

### Installation

IDEX 26  
Rue 35ème Régiment d'Aviation  
F-69500 Bron

## BENEFITS

### Efficiency

- Normal supply level 105.1%
- Flexible adjustment of output: modulation ratio 1:4
- Investment quickly pays off

### Convenience

- Boilers can be dismantled in the case of difficult placement
- Easy assembly and maintenance
- Fully electronic, easy-to-operate controls

- Low emissions and quiet operation
- Low weight

### Savings

- Significantly lower energy use
- Minimal, space-saving installation
- Low maintenance

## Renovation: Lyon town hall and opera

# Custom-made, energy-saving technology

### The new system

In order to provide the "Hôtel de Ville" and, as needed, the "Opéra Nouvel" with central heat from a boiler room, two modulating RENDAMAX 3504 gas condensing boilers were connected in a cascade. The advanced boiler management with load control and automatic digital firing devices also enabled the system to be connected to the existing building control system. The two buildings are connected by pipe systems underground. When needed, the opera house can also be heated easily and at low cost in addition to the base heating system installed there. The low volume of water and the compact heat exchangers allow for a fast, direct and efficient transfer of heat. The central digital control offers the most operating and maintenance ease.

The RENDAMAX 3504 had another advantage. It had very close access to the historical building's central engineering room. Because the ELCO boilers can be dismantled and reassembled easily and quickly on site, this led to no problems whatsoever.

### RENDAMAX 3504 condensing boilers: strong, efficient and compact

Very high heat output in compact form, low consumption and low NOx and CO values - these are the characteristics of the RENDAMAX 3500 series gas condensing boilers. The series includes a total of five different sizes, which cover outputs ranging from 613 to 1,000 kW. The model series is also excellent for both renovation and new buildings. Long assembly times are not an issue: RENDAMAX 3500 gas condensing boilers are delivered complete from the plant with a built-in pre-mix boiler and custom-fitted mountings. All components are pre-set and tested before delivery.



Equipment	New System
Gas condensing boiler	Two R 3504
Nominal heat output	2 x 906 kW
Normal supply level	105.1 %
Overall height	1,400 mm
Overall width	1,330 mm**
Weight	1,070 kg
<small>**without encasement less 64 mm</small>	

### The "Opéra Nouvel": An architectural milestone

The theatre and later opera house of Lyon was originally built in an Italian style in 1831. It had a horseshoe-shaped hall, which was lined with rows of loges. The new construction still has the same lobby and exterior. Nouvel tripled the area of the building. He achieved this by excavating one of the underground storeys, where the rehearsal rooms were located, and through an attention-grabbing barrel-shaped construction of steel and glass on the roof. This doubled the height of the building and covered the stage area.

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