

OLOMOUC, CZECH REPUBLIC

Salm Palace



Modernizing HVAC in a 17th-Century Landmark

At Salm Palace, a registered cultural monument in Olomouc, major renovations come with added cost, permits, and coordination with conservation authorities. When its 15-year-old Daikin VRV III system began nearing the end of its service life, the building's owner needed a modernization path that would improve energy efficiency and system performance without disrupting daily operations or compromising the building's protected heritage.

Installed system:

- Daikin VRV IV heat pump system
- Outdoor unit replacement only (no interior modifications)
- 6 outdoor units, 241 kW total capacity
- Existing indoor units and piping retained

Location

Country: Czech Republic

City: Olomouc




The original VRV III outdoor units served four floors of the building reliably for 15 years.

Preserving history while supporting modern use

Salm Palace sits on Horní náměstí in the center of Olomouc. The 17th-century building is the largest secular palace in the city and once served as the residence of the Salm family. Today, it houses commercial spaces across multiple floors, requiring reliable cooling to support daily operations.

As part of a major reconstruction in 2010, the building was equipped with a Daikin VRV III system across four floors. The system included six outdoor units with a total cooling capacity of 241 kW and provided dependable performance for more than a decade.

After 15 years of operation, some compressors were nearing the end of their service life. At the same time, the newer VRV IV generation offered updated technology, enhanced control functions and the potential for lower operating costs depending on operating conditions, while remaining compatible with the existing system's R-410A refrigerant circuit.

"From our point of view, replacing the VRV units in Salm Palace is an ideal way to modernize an existing cooling or heating system. There's no point in changing a fully functional system when a smooth replacement of the outdoor units, with no construction work, is enough."

Ing. Jan Lakomý, CEO, I-THERM

A VRV IV upgrade without starting from scratch

After careful evaluation by Daikin and installation partner I-THERM, the building's owner chose a targeted replacement strategy for the HVAC system. Rather than replacing the entire installation, the project focused on upgrading the outdoor units while retaining the existing indoor units and refrigerant piping.

Because the existing system could be preserved, the upgrade avoided major construction work inside the building.

The new VRV IV outdoor units also support up to 64 connectable indoor units—more than double the original system's capacity—giving the building owner flexibility for future system changes.

Project requirements

Year of installation
2025

Building type
Historic commercial building /
cultural monument

Application
Cooling (with heating capability
via VRV system)

Original system
6 units of Daikin VRV III (installed 2010)

New system
6 units of Daikin VRV IV outdoor
units (Module: RXYQ18U / RXYQ12U
/ RXYQ8U)

Scope
Outdoor unit replacement only

Cooling capacity
241 kW

Replacement lead time
Core replacement completed in
approximately 4–5 hours

A carefully planned replacement with minimal disruption

The upgrade involved replacing six outdoor units, but the work was structured to keep building operations unaffected. Because the project was confined to rooftop equipment, the most disruptive activities were completed within a single working day.

The installation team from I-THERM coordinated all logistics, including crane access and temporary street closure, to safely remove the existing units and position the new VRV IV units on the existing base structure.

The core replacement work was completed over the course of a single Saturday, with the remaining installation, testing, and commissioning activities carried out over the following days.

The replacement followed a structured process designed to minimize downtime and preserve the existing system:

1

Preparation

Start 08:00
Uncovering units
Disconnecting electrical installation
Extracting refrigerant

2

Removal

Cutting piping
Dismantling units
Lowering by crane

3

Installation

End 13:00
Lifting new units
Placing on base structure
Connecting piping

4

Testing & commissioning

Pressure testing
Evacuation
Filling with new refrigerant
Commissioning by Daikin



Pumping out the refrigerant into special containers for recovery and subsequent handling in accordance with applicable regulations.



Electrical work formed part of the system's testing and commissioning phase.



Inside Salm Palace, the original indoor cassette units and interior spaces remained untouched.

Modernization without starting from scratch

The upgrade at Salm Palace demonstrates how an existing VRV system can be modernized without starting from scratch. By replacing only the outdoor units and retaining the existing indoor units and refrigerant piping, the project upgraded the building to current-generation VRV technology with updated technical features. Supporting the long-term operation of the existing HVAC installation while minimizing disruption to daily operations.

Daikin's replacement technology is engineered for projects exactly like this one. Learn more on the VRV Replacement Technology website:



Why Replace With Daikin?



Minimal disruption: Reuse existing pipework and indoor units while keeping commercial spaces operational.



Improved efficiency and extended system life: Current-generation VRV technology improves performance while helping the existing system operate reliably for longer.



Reduced renovation scope and simplified installation process: Use less new equipment and reduce renovation work compared with a full system replacement.



Daikin's L[∞]P program: reuses certified reclaimed refrigerant to reduce the need for virgin refrigerant production and support refrigerant circularity.