

## Case Study: Energy Modernization of the State Heart Hospital in Balatonfüred

**Background:** The history of the State Heart Hospital in Balatonfüred dates back to the 18th century. The building complex has undergone multiple construction phases over the centuries, incorporating elements of classical, eclectic, and Art Nouveau architectural styles. The hospital came under state management in 1949, and significant modernizations and expansions took place in the 1960s and 1970s.

The energy efficiency of the building complex did not meet modern standards. Due to the building's protected status as a historic monument, a special solution was required for insulation to preserve its architectural value.

**Solution:** In 2013, a comprehensive energy renovation was carried out under the KEOP-5.3.0/A program. The key elements of the project included:

### 1. Facade Insulation:

- The external walls were insulated using Thermie-S Basic and FrontPress products from HungaroWatt Kft.
- This solution was applied over an area of 6000 square meters in multiple colors.
- The 1 mm thick coating preserved the original appearance of the building.

### 2. Window Replacement:

- Energy-efficient windows were installed.

**Results:** According to the performance statement issued on October 14, 2019, by the hospital's Chief Director, Prof. Dr. Gábor Veress, and Deputy Economic Director, Zsuzsanna Törökné Kaufmann:

### 1. Energy Savings:

- Since the 2013 renovation, the building's energy consumption has decreased by 20-30% during both the heating and cooling seasons.

### 2. Environmental Protection:

- The ultra-thin insulating coating poses minimal environmental impact in the long term.

### 3. Historic Preservation:

- The original architectural values of the building were successfully preserved.

### 4. Continuous Operation:

- Patient care continued uninterrupted during the renovation.

## Lessons Learned:

1. **Innovative Solutions:** Applying innovative insulation technologies is necessary to meet specific requirements.
2. **Comprehensive Approach:** Addressing multiple areas (insulation, windows) simultaneously during energy modernization ensures maximum efficiency.
3. **Balancing Historic Preservation and Modernization:** With the appropriate technology, it is possible to modernize historic buildings while preserving their architectural value.

4. **Long-Term Thinking:** Investments in energy efficiency result in significant long-term savings, both financially and environmentally.

This case study clearly illustrates that with proper planning and innovative solutions, even protected historic buildings can be modernized, significantly improving their energy efficiency and comfort levels.

