



**Slovenske  
Konjice  
(Slovenia)**

**41 % energy saving**

**Total living expenses lower than before renovation**

**Nearly all users have chosen for energy saving measures**

### **Project data**

Location, address:	Slomškova ulica 5,7
Region:	Slovenske Konjice
Surroundings:	East of the country;
Climate:	Continental
Heating degree days:	3200
Year of construction and renovation:	1975-77(constructed); 2002 - 2004 (renovated)
Typology:	Apartment building
No of dwellings:	76 dwellings
Total floor area:	4566
Owner:	Various private owners, building management: Finance Operativa d.o.o.
Architect and Builder:	
Costs of energy saving measures:	€ 3.500
Renovation financed by:	The owners



**Figure 1: Apartment building on Slomškova ulica 5, 7 after renovation central heating regulation**

### **Renovation concept**

#### **Key renovation features**

- Central regulation
- Heat billing and metering of energy use

### **State-of-the-art**

Before renovation	After renovation
<i>Installations:</i>	<i>Installations:</i>
<ul style="list-style-type: none"><li>• No heat billing and metering of energy use</li></ul>	<ul style="list-style-type: none"><li>• heat billing and metering of energy use</li></ul>
<ul style="list-style-type: none"><li>• No central regulation</li></ul>	<ul style="list-style-type: none"><li>• Install central regulation</li></ul>

### **Energy saving and monitoring**

*Energy consumption before renovation:*  
KWh/m<sup>2</sup>: 136

*Energy consumption after renovation:*  
KWh/m<sup>2</sup>: 80  
Percentage saving<sup>1</sup>: 41%

### **Additional information**

- The main reasons for the renovation of installations have been an insufficient maintenance state, complaints of tenants regarding regulation and thermal comfort, further intention of the housing association to implement energy saving measures.
- An examination of energy efficiency of the building was carried out.

The recommended measures were the following:

- heat billing and metering of energy use,
- Install central regulation

### **Lessons learned and conclusions**

- The housing association has proved that it is possible to renovate apartments installations radically, reach high energy savings and prevent rising of total living expenses. The benefit for the occupants is manifested through lower heating costs and higher level of thermal comfort.

### **References**

[1] Housing Found of Slovenske Konjice Municipalities

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<sup>1</sup> Compared to the situation before renovation