

Energy Advanced

PROJECT OF ENERGY RETROFIT
OF BUILDINGS IN LJUBLJANA
2021

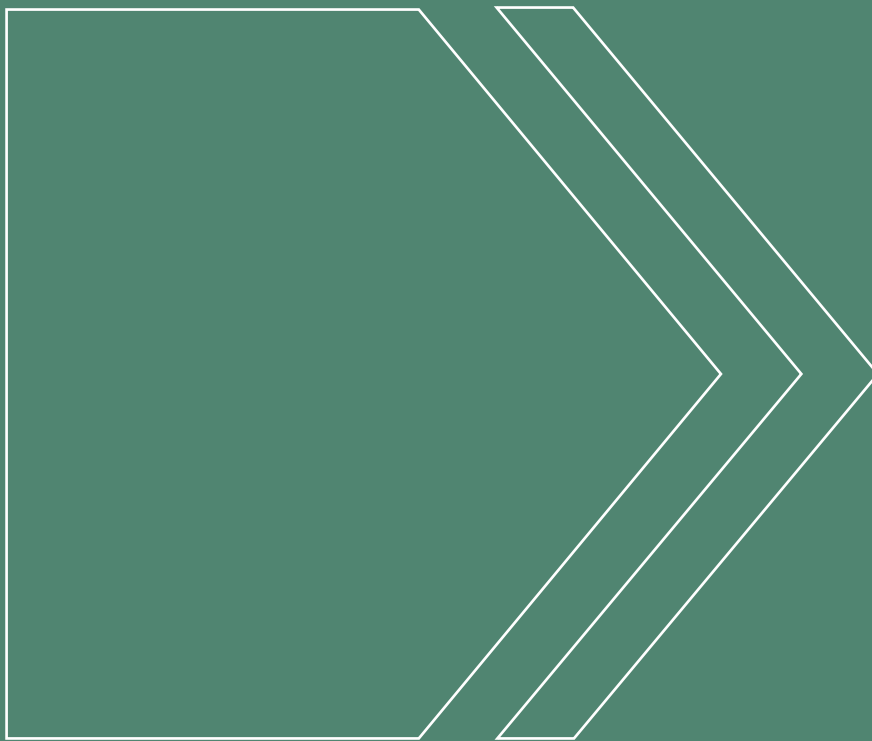


City of
Ljubljana



EUROPEAN UNION
COHESION FUND
INVESTING IN YOUR FUTURE

LJUBLJANA.
For you.



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OF BUILDINGS IN LJUBLJANA
2021



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Address by Mayor Zoran Janković

Photo: Uroš Hočevar

Energy efficiency for a green future

In Ljubljana, we resolutely implement the sustainable development of our city, in which we take care of the quality of life of our citizens in an orderly, green and clean city, in which at every step urban life is intertwined with care for our environment. Improving energy efficiency is also of paramount importance, which makes a critical contribution to reducing greenhouse gas emissions.

I am proud to present you the third set of energy retrofits of our buildings, which we renovated as part of a public-private partnership with a consortium of Petrol and Resalta, and for comprehensive retrofits we also received funds from the EU Cohesion Fund in the amount of 40%. I am especially pleased that in the current lot, our primary focus was on kindergartens and primary schools. We are aware that children are our future and that is also why this project is so very important for Ljubljana.

I am pleased that the Petrol and Resalta consortium also recognises the significance of this project for our city. Aware of the importance of preserving our environment for us as well as for generations to come, they are demonstrating their social responsibility and respect for the city in which they operate.

In the third set of the Energy Advanced project, we will retrofit a total of 27 buildings, 17 of them in full and 10 in part. By doing

so, we will achieve 968 tons less CO₂ emissions, which is equivalent to the amount absorbed annually by 108 ha of forest. For ease of illustration, this is an area the size of four Ljubljana Castle Hills. This year, we have already successfully completed 7 comprehensive retrofits and 3 partial ones.

I would like to thank all the participants in the project for their excellent work, professionalism and dedication. The greatest gratitude to all of us is certainly the joy of kindergarten children and pupils in the retrofitted premises of their kindergartens and schools.

We will continue to endeavour together to ensure that they grow up in an orderly, energy-efficient and, above all, solidary, tolerant and friendly city, where mutual respect comes first.

Zoran Janković
Mayor of the City of Ljubljana

Address by Energy Manager Alenka Loose

Address by
the Energy Manager

We do not run out of challenges

We are most pleased with the satisfied users, and we are also extremely pleased with the numerous awards from domestic and international organisations and associations. Among others, we were awarded the "2019 Best Energy Service Award" for the project within the European Energy Service Award, and at the Energy Days in Portorož in 2019, we received the 2019 award for energy efficiency project.



Photo: Stane Jeršič

In front of you is a brochure in which we present the continuation of our work in the field of energy retrofit of buildings owned by the City of Ljubljana (hereinafter ERL or Energy Retrofit of Ljubljana).

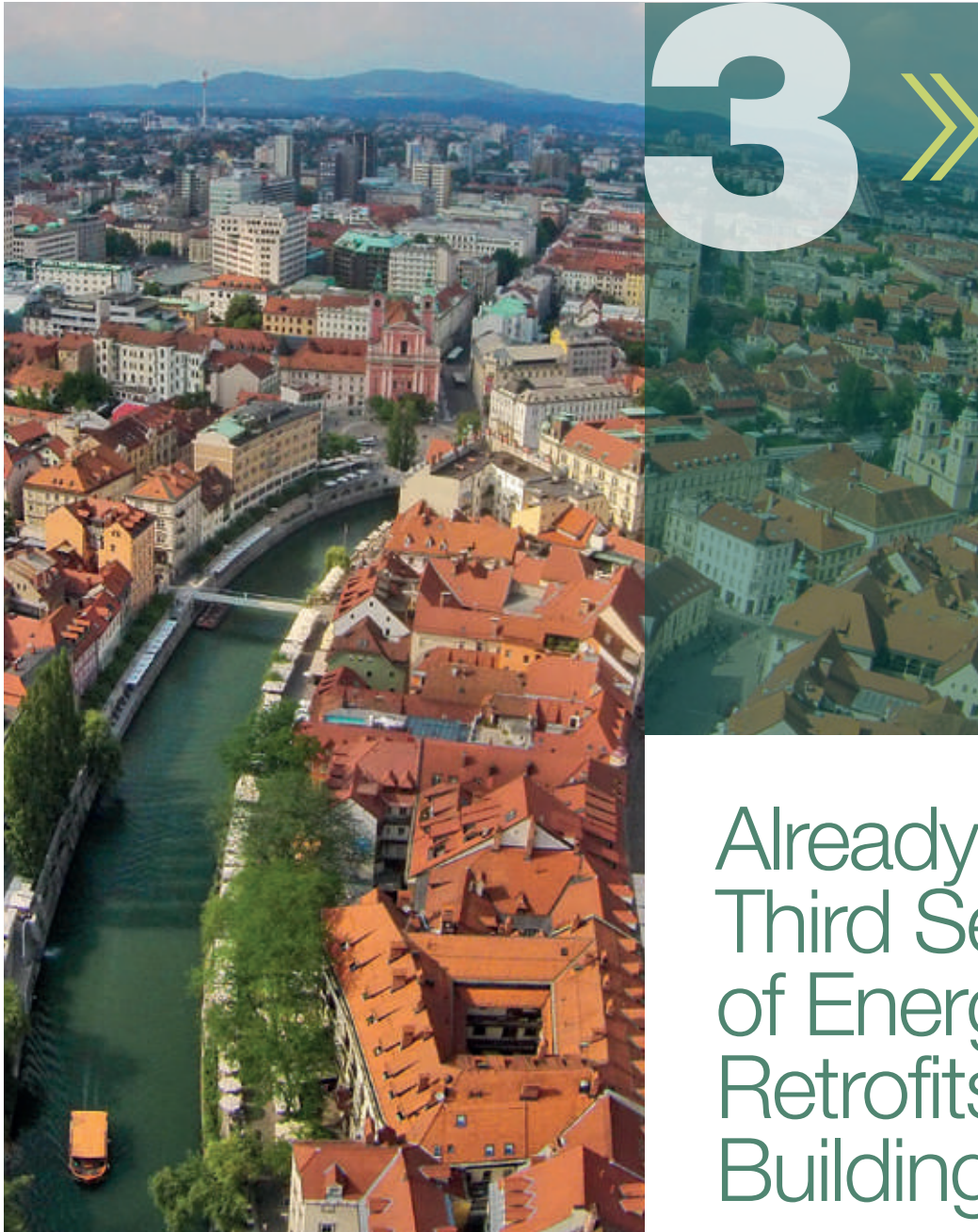
As announced at the conclusion of the first ERL1 energy retrofit project, we continued our work and renovated an additional 11 buildings as part of the ERL2 project. We are continuing the work by retrofitting 10 facilities within the first part of the ERL3 project, of which 7 are comprehensive and 3 are partial.

As before, we also checked seismic safety in all the facilities within the ERL3 and took care of static resistance, where necessary, we use fire-retardant materials and take care of living comfort following the regulations.

All retrofitted facilities were connected to the central control system (CCS) and, where possible, we took care of the use of renewable energy sources.

As we do not run out of challenges, we will continue our work in the future.

Alenka Loose
Energy manager



Already the Third Set of Energy Retrofits of Buildings

In the City of Ljubljana, we are successfully continuing the energy retrofits of buildings owned by us. Ten more energy retrofits were added this year to fifty-nine energy retrofitted buildings from the first two sets of the Energy Advanced project – two primary schools, six kindergartens, a music school and a sports arena. The total value of the investment is almost 5 million euros.

In addition to greater safety and comfort for our users, we also take care to reduce the consumption of heat, electricity and greenhouse gas emissions. This year's retrofits bring guaranteed annual savings of heat and electric energy in the amount of more than 300,000 euros or 2,300 MWh. **This year and next year, we will complete the third set of the project by retrofitting another 17 buildings.**

At the beginning of the project, we performed the energy retrofits through public tenders and the use of all financial incentives that were available. In 2017, we concluded a public-private partnership with the Petrol and Resalta consortium for the first set of energy retrofits, within which we renovated 48 public buildings owned by the City of Ljubljana. A year later, we concluded a new public-private partnership with the Petrol, Resalta and Javna razsvetljava Ltd consortium, within which we retrofitted 11 more facilities. In 2020, by concluding a public-private partnership with the Petrol and Resalta consortium, we included 27 buildings in the third set of the energy retrofit project, which are divided into two parts. In this brochure, we present the first part, which we completed in early 2021. All three sets were implemented with the assistance of the EU Cohesion Fund.

All energy retrofits are carried out at a high quality level, but simultaneously we also perform other measures, such as static repairs, ensuring fire safety, renovating the interior of the buildings and replacing worn-out equipment. An additional value of the project is the setting-up of the central control system (CCS) on all retrofitted buildings, which creates even more savings, as we can monitor the factors in a particular facility at any time and adjust the operation of the systems accordingly.

With the energy retrofits, we, as well as the generations to come, are paving the way for a healthy, clean and tidy environment that will continue to enable a healthy and quality life in our city.



10
energy retrofitted
buildings

We included 10 public buildings in the energy retrofit project. We performed a comprehensive energy retrofit at 7 facilities and obtained cohesion grants for them. On the remaining 3 facilities, we carried out a partial energy retrofit.



2,300 MWh
Guaranteed annual savings
(heat and electric energy)



EUR 288,877



CO₂
(eq)

413 tonnes
less emissions

This is the amount absorbed per year by **19,700** average-sized trees.



Public-private partnership based on the principle of energy performance contracting – PPP EP ERL 3

Comprehensive energy retrofits of buildings

- 1 Nove Fužine Primary School
- 2 Ciciban Kindergarten – Ajda Branch
- 3 Črnuče Kindergarten – Sonček Branch
- 4 Jelka Kindergarten – Palčki Branch
- 5 Kolezija Kindergarten – Murgle Branch
- 6 Miškolin Kindergarten – Rjava cesta Branch
- 7 Viški gaj Kindergarten – Zarja Branch

Partial energy retrofits of buildings

- 1 Franc Šturm Music School – Šentvid Branch
- 2 Vižmarje-Brod Primary School
- 3 The Stožice Arena

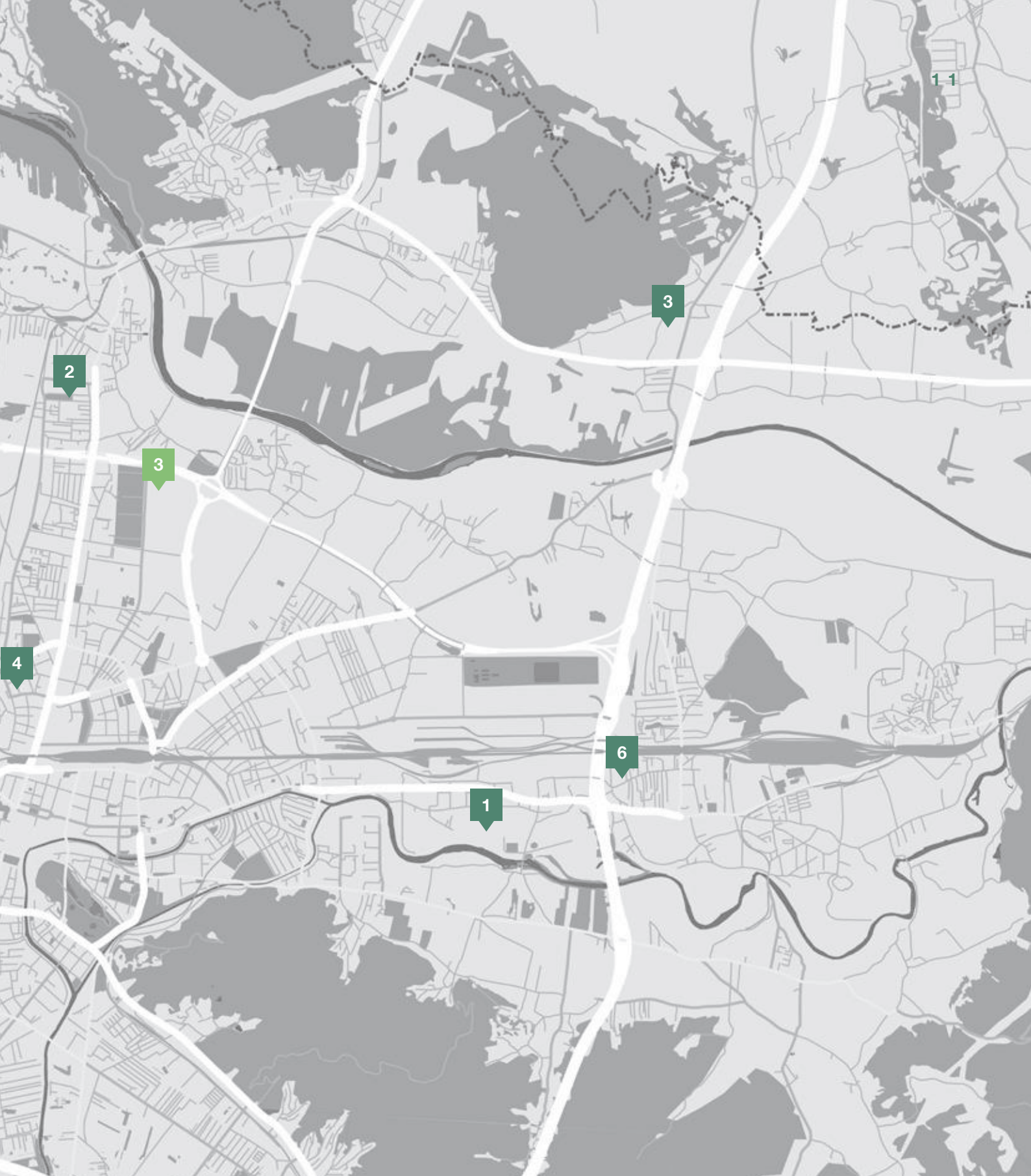


7,600 m²
of building envelope on 6
buildings.

2,400 m²
windows and doors on 6
buildings.

Installation of thermal insulation
of the roof or attic on

4,200 m²
on 6 buildings.

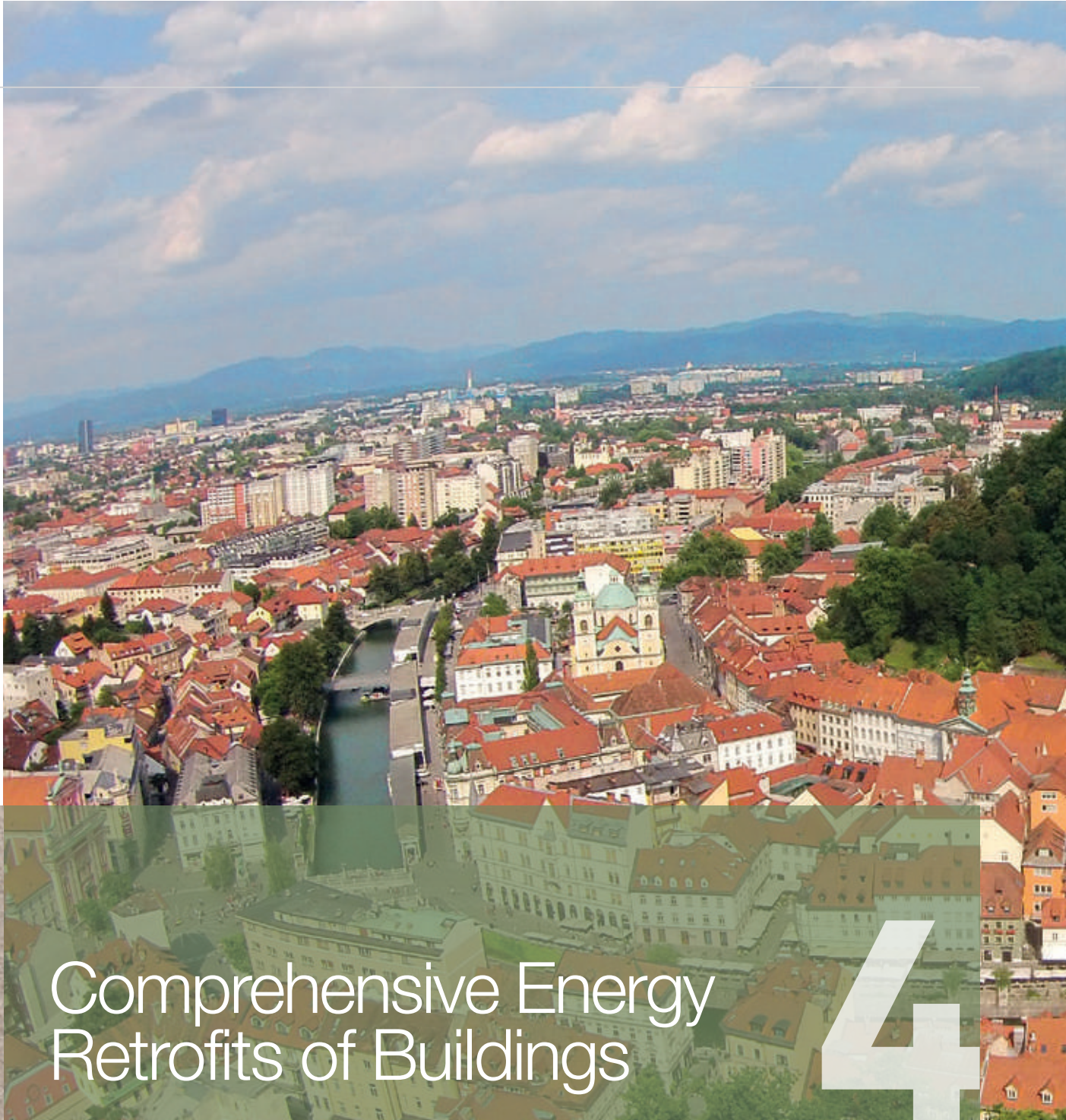


» Renovation of **5 gas boiler rooms**, renovation of heating sources with **installation of heat pumps** at **6 buildings**, renovation of **3 district heating plants**.

» Installation of mechanical ventilation with high efficiency of waste air heat recovery.

» Renovation of interior lighting of buildings with the installation of more than **2,500 new LED lights** and retrofiting **112 LED lights**.

» Installation of 694 thermostatic valves.



Comprehensive Energy Retrofits of Buildings

In the City of Ljubljana, as part of the first part of the third public-private partnership and based on the energy performance contracting model, we comprehensively retrofitted 7 buildings.

In the energy retrofit, we followed the Rules on Efficient Use of Energy in Buildings with a Technical Guideline (PURES), which set out the technical requirements that must be met for efficient use of energy in buildings in the field of thermal protection, heating, cooling, ventilation or their combination, sanitary hot water preparation and lighting in buildings, providing their own renewable energy sources for the operation of systems in the building. We retrofitted one school and six kindergartens, thus improving the conditions for the users of the facilities, which are our youngest. By reducing energy consumption and increasing the share of renewable energy sources, we will significantly contribute to reducing the CO₂ emissions.



7

comprehensively
retrofitted buildings



4,134,995

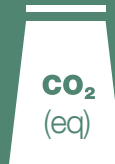
EUR

Investment value



12,930
m²

total renovated area



CO₂
(eq)

191 tonnes
less emissions



...

9,100
average-sized trees

Nove Fužine Primary School



📄	Title	Nove Fužine Primary School
✉	Address	Preglov trg 8, 1000 Ljubljana
📅	Year of construction	1977

As part of the Energy Retrofit of Ljubljana project, we comprehensively retrofitted the building. Simultaneously, static, fire and other renovation of the building was carried out and superstructure of the main school building was erected.

Baseline

The external walls of the building were insufficiently thermally insulated. The builders' joinery was mostly from the construction period and as such was very energy intense. Parts of the roof were insufficiently thermally insulated and in need of renovation. The building is connected to district heating, the heating station was, with the exception of minor renovations, from the time of construction of the building and as such did not allow modern regulation of heating. The system was hydraulically unbalanced. Most radiators could not be locally regulated. Ventilation equipment from the time of construction of the building was, except for the kitchen and dining room, inoperable. The lighting was mostly implemented in fluorescent technique with classic ballasts. The building was in a poor state of energy efficiency.



- » **Start of works:** June 2020
- **Completion of works:** January 2021
- **Investment value:** € 1,370,299.90



today



Implemented measures of comprehensive energy retrofit

Facade: The facade was additionally thermally insulated in all parts of the building.

Roof: Insufficiently insulated parts of the roofs were additionally thermally insulated, flat roofs were newly waterproofed.

Builders' joinery: In fact, the entire builders' joinery was replaced with three-layer glazing in PVC or ALU design, and new external blinds were installed.

Heating system: The heating station for heating and preparation of hot sanitary water was completely renovated. Thermostatic valves and heads were installed on the radiator heating, and the heating system was hydraulically balanced.

Ventilation: The mechanical ventilation in the gym and accompanying changing rooms, as well as in the school and kindergarten changing rooms, was completely renovated. The new ventilation is equipped with units with high efficiency of waste air heat recovery.

Lighting renovation: We replaced all the older, energy-wasting lighting with new ones in LED technology. Smart lighting control was installed in much of the school.

Energy management: We introduced energy monitoring at the facility, through which we monitor the energy consumption in the facility and thus achieve the set goals – energy savings.

Contractually guaranteed results

Energy consumption* before the retrofit: 148.58 kWh/m²a

Energy consumption* after the retrofit: 105.65 kWh/m²a

* Energy consumption is the consumption of energy for sanitary hot water and heating.

Ciciban Kindergarten, Ajda Branch



	Title	Ciciban Kindergarten – Ajda Branch
	Address	Ulica prvoborcev 16, 1000 Ljubljana
	Year of construction	1974

As part of the Energy Retrofit of Ljubljana project, we comprehensively retrofitted the building. Simultaneously, the static renovation of the building was carried out and the extension of the building was erected (separate project).

Baseline

According to the guidelines in force today, the building envelope was insufficiently insulated with old wooden builders' joinery installed. The heating station needed renovation, the radiator heating did allow for local regulation, but it was hydraulically unbalanced. The lighting was mostly implemented in fluorescent technique with classic ballasts. The building was in a poor state of energy efficiency and is under cultural heritage protection.



- » **Start of works:** August 2020
- **Completion of works:** March 2021
- **Investment value:** € 829,907.80



today



Implemented measures of comprehensive energy retrofit

Building envelope: We thermally insulated the entire facade. New wooden parts of the facade and attic were installed, imitating the original appearance of the building. We additionally insulated the ceiling towards the building attic.

Renovation of terraces: We renovated the terraces in front of the playing rooms, thermally insulated them and poured new concrete pavement.

Builders' joinery: We replaced old, energy-consuming builders' joinery with the new one, following the instructions of the Cultural Heritage Protection Institute.

Heating system: The heating station for heating and preparation of hot sanitary water was renovated. We installed new thermostatic valves and heads on the radiator heating and hydraulically balanced the heating system. We also energy retrofitted the kitchen ventilation.

Lighting renovation: We replaced all the older, energy-wasting lighting with the new one in LED technology.

Energy management: We introduced energy monitoring at the facility, through which we monitor the energy consumption in the facility and thus the achievement of the set goals (savings).

Contractually guaranteed results

Energy consumption* before the retrofit: 186.59 kWh/m²a

Energy consumption* after the retrofit: 138.37 kWh/m²a

* Energy consumption is the consumption of energy for sanitary hot water and heating.

Črnuče Kindergarten, Sonček Branch



📄	Title	Črnuče Kindergarten – Sonček Branch
✉	Address	Kraljeva 10, Šentjakob, 1000 Ljubljana
📅	Year of construction	1978

As part of the Energy Retrofit of Ljubljana project, we comprehensively retrofitted the building to meet the currently valid guidelines.

Baseline

According to the guidelines in force today, the building envelope was sufficiently insulated. There was a natural gas boiler in the boiler room, and the gym was inadequately ventilated. The radiator heating was hydraulically unbalanced and without the possibility of local regulation. The lighting was mostly done in fluorescent technique with classic ballasts. The building was in a poor state of energy efficiency.



- » **Start of works:** September 2020
- **Completion of works:** March 2021
- **Investment value:** € 199,305.20



today



Implemented measures of comprehensive energy retrofit

Heating system: A new geothermal heat pump for heating and pre-treatment of hot sanitary water was installed. Thermostatic valves and heads were installed on the radiator heating and the heating system was hydraulically balanced.

Energy renovation of ventilation: We renovated the ventilation in the gym and improved the energy efficiency.

Lighting renovation: We replaced all the older, energy-wasting lighting with the new one in LED technology.

Energy management: We introduced energy monitoring at the facility, through which we monitor the energy consumption in the facility and thus the achievement of the set goals (savings).

Contractually guaranteed results

Energy consumption* before the retrofit: 182.74 kWh/m²a

Energy consumption* after the retrofit: 81.3 kWh/m²a

* Energy consumption is the consumption of energy for sanitary hot water and heating.

Jelka Kindergarten, Palčki Branch



📄	Title	Jelka Kindergarten – Palčki Branch
✉	Address	Lavričeva ulica 5a, 1000 Ljubljana
📅	Year of construction	1938

As part of the Energy Retrofit of Ljubljana project, we comprehensively retrofitted the building. Simultaneously, static, fire and other renovation of the building was carried out and superstructure of a part of the building was erected.

Baseline

There have been no major interventions in the facade since the construction of the building, which was reflected in the condition of the building envelope and energy consumption. Older wooden builders' joinery was installed on individual parts, as well as older PVC, which no longer complied with the regulations in force today. Most parts of the roof were insufficiently thermally insulated, and the roofing over the main part of the building was dilapidated. Also, asbestos-based roofing was partially installed. The heating station did not allow sectoral regulation, the radiator heating was hydraulically unbalanced and without the possibility of local regulation. The lighting was mostly done in fluorescent technique with classic ballasts. The building was in a poor state of energy efficiency.



- » **Start of works:** June 2020
- **Completion of works:** October 2020
- **Investment value:** € 309,255.00



today



Implemented measures of comprehensive energy retrofit

Facade: We thermally insulated the entire facade of the building.

Roof: We thermally insulated all roofs that lacked sufficient thermal protection. A new sheet metal roofing was installed on the main part of the building, and the flat roof on the extension was made as a green extensive roof.

Builders' joinery: The builders' joinery was completely replaced with a newer one with three-layer glazing in PVC and partly ALU. New outside blinds were installed.

Heating system: We renovated the heating station and improved the possibilities of heating regulation. Thermostatic valves and heads were installed on the radiator heating and the heating system was hydraulically balanced.

Ventilation: The mechanical ventilation in the kitchen was comprehensively renovated with the installation of an energy-saving hood with the possibility of recovering the heat generated during cooking.

Lighting renovation: We replaced all the older, energy-wasting lighting with new ones in LED technology. Smart lighting control was installed in much of the kindergarten.

Energy management: We introduced energy monitoring at the facility, through which we monitor the energy consumption in the facility and thus achieve the set goals – energy savings.

Contractually guaranteed results

Energy consumption* before the retrofit: 166.38 kWh/m²a

Energy consumption* after the retrofit: 113.46 kWh/m²a

* Energy consumption is the consumption of energy for sanitary hot water and heating.

Kolezija Kindergarten, Murgle Branch



📄	Title	Kolezija Kindergarten – Murgle Branch
✉	Address	Pod bukvami 11, 1000 Ljubljana
📅	Year of construction	1978

As part of the Energy Retrofit of Ljubljana project, we comprehensively retrofitted the building. At the same time, a building was added and the kitchen was renovated (separate project).

Baseline

According to the current guidelines, the building envelope was insufficiently insulated. Old, also unsuitable, builders' joinery was installed on some parts. The building was heated exclusively with natural gas, and the radiator heating was hydraulically unbalanced and with limited possibilities of local regulation. The lighting was mostly implemented in fluorescent technique with classic ballasts. The building was in a poor state of energy efficiency.



- » **Start of works:** August 2020
- **Completion of works:** March 2021
- **Investment value:** € 572,865.20



today



Implemented measures of comprehensive energy retrofit

Building envelope: We thermally insulated the entire facade. The wooden parts of the facade and attic were also rebuilt and additionally insulated.

Builders' joinery: We replaced the old, energy-wasting joinery.

Heating system: We newly installed a natural gas heating system to which a heat pump was added for heating. Thermostatic valves and heads were installed on the radiator heating and the heating system was hydraulically balanced. We remodelled the kitchen ventilation.

Lighting renovation: We replaced all the older, energy-wasting lighting with the new one in LED technology.

Energy management: We introduced energy monitoring at the facility, through which we monitor the energy consumption in the facility and thus the achievement of the set goals (savings).

Contractually guaranteed results

Energy consumption* before the retrofit: 156.43 kWh/m²a

Energy consumption* after the retrofit: 67.74 kWh/m²a

* Energy consumption is the consumption of energy for sanitary hot water and heating.

Miškolin Kindergarten, Rjava cesta Branch



before

📄	Title	Miškolin Kindergarten – Rjava cesta Branch
✉	Address	Rjava cesta 1, 1000 Ljubljana
📅	Year of construction	1978

As part of the Energy Retrofit of Ljubljana project, we comprehensively retrofitted the building. Simultaneously, static, fire and other renovation of the building was carried out.

Baseline

The building was built in several phases, and the external walls were insufficiently thermally insulated. A small part of the building had older glazing. The building was heated from a central natural gas boiler room for the surrounding block of flats, which was a very energy-inefficient way of heating, especially in the summer. The heating system was hydraulically unbalanced and the radiator heating was without the possibility of local regulation. The building was in a poor state of energy efficiency.



- » **Start of works:** June 2020
- **Completion of works:** December 2020
- **Investment value:** € 401,493.00



today



Implemented measures of comprehensive energy retrofit

Facade: Additional thermal insulation was installed on all external walls. The building received a new facade in a combination of a thin-layer and a brick finish.

Builders' joinery: The old glazing was replaced with a new three-layer ALU version.

Heating system: After energy retrofit, the building is heated from its own boiler room, and a water-to-water heat pump is used as the primary source of heating and preparation of hot sanitary water. For this purpose, two wells for the collection

and return of groundwater were drilled at the location of the kindergarten. Two wall-mounted gas condensing boilers were installed as a peak or alternative source, which are also used for overheating hot sanitary water. Thermostatic valves and heads were installed on the radiator heating, and the heating system was hydraulically balanced.

Energy management: We introduced energy monitoring at the facility, through which we monitor the energy consumption in the facility and thus achieve the set goals – energy savings.

Contractually guaranteed results

Energy consumption* before the retrofit: 323.14 kWh/m²a

Energy consumption* after the retrofit: 102 kWh/m²a

* Energy consumption is the consumption of energy for sanitary hot water and heating.

Viški gaj Kindergarten, Zarja Branch



📄	Title	Viški gaj Kindergarten – Zarja Branch
✉	Address	Reška ulica 31, 1000 Ljubljana
📅	Year of construction	1974

As part of the Energy Retrofit of Ljubljana project, we comprehensively retrofitted the building. Simultaneously, static, fire and other renovation of the building was carried out.

Baseline

The building has prefabricated wooden construction, the external walls were insufficiently thermally insulated, and the facade panels were asbestos-based. Some parts had older wooden builders' joinery. The building was heated via two natural gas boilers with limited regulation. The ventilation of the kitchen was dated and without the possibility of recuperating waste heat. The radiator heating lacked the possibility of local regulation. The lighting was mostly implemented in fluorescent technique with classic ballasts. The building was in a poor state of energy efficiency.



- » **Start of works:** June 2020
- **Completion of works:** February 2021
- **Investment value:** € 451,869.40



today



Implemented measures of comprehensive energy retrofit

Facade: Asbestos-based facade panels and old thermal insulation were removed. A new and thicker thermal insulation and a new contact thin-layer facade finish were installed.

Builders' joinery: The old wooden builders' joinery was completely replaced with a newer one in PVC with three-layer glazing.

Heating system: The primary heating source of the building is now a water-to-water heat pump. For this purpose, two wells for the collection and return of groundwater were drilled at the location of the kindergarten. Two wall-mounted gas condensing boilers were installed as a peak or alternative source, which are also used for overheating hot sanitary water. The boiler room is now operated from one central space. Thermostatic valves and heads were installed on the radiator heating, and the heating system was hydraulically balanced.

Ventilation: The mechanical ventilation in the kitchen was comprehensively renovated with the installation of an energy-saving hood with the possibility of recovering the heat generated during cooking. Passive cooling of the air for kitchen ventilation is carried out via an additional heat exchanger at the groundwater return flow.

Lighting renovation: We replaced all the older, energy-wasting lighting with new ones in LED technology.

Energy management: We introduced energy monitoring at the facility, through which we monitor the energy consumption in the facility and thus achieve the set goals – energy savings.

Contractually guaranteed results

Energy consumption* before the retrofit: 201.04 kWh/m²a

Energy consumption* after the retrofit: 83.92 kWh/m²a

* Energy consumption is the consumption of energy for sanitary hot water and heating.

Comprehensive Energy Retrofits of Buildings

Building	Address
Nove Fužine Primary School	Preglov trg 8, 1000 Ljubljana
Ciciban Kindergarten – Ajda Branch	Ulica prvoborcev 16, 1000 Ljubljana
Črnuče Kindergarten – Sonček Branch	Kraljeva 10, Šentjakob, 1000 Ljubljana
Jelka Kindergarten – Palčki Branch	Lavričeva ulica 5a, 1000 Ljubljana
Kolezija Kindergarten – Murgle Branch	Pod bukvami 11, 1000 Ljubljana
Miškolin Kindergarten – Rjava cesta Branch	Rjava cesta 1, 1000 Ljubljana
Viški gaj Kindergarten – Zarja Branch	Reška ulica 31, 1000 Ljubljana



Investment amount	Energy consumption before the retrofit (kWh/m ² a)	Energy consumption after the retrofit (kWh/m ² a)
€ 1,370,299.90	148.58	105.65
€ 829,907.80	186.59	138.37
€ 199,305.20	182.74	81.3
€ 309,255.00	166.38	113.46
€ 572,865.20	156.43	67.74
€ 401,493.00	323.14	102
€ 451,869.40	201.04	83.92





Partial Energy Retrofits of Buildings

5

As part of the first part of the third public-private partnership under the energy performance contracting model, we partially retrofitted three additional facilities.

We partially energy retrofitted the Franc Šturm Music School, where we renovated the heating system and installed an air-to-water heat pump, renovated the lighting, installed thermostatic valves on the radiators and introduced a central control system in the building. The same measures were implemented at the Vižmarje-Brod Primary School, where a water-to-water heat pump was installed (exploitation of shallow geothermal energy). In the main Stožice Arena and the warming-up hall, we only carried out the measure of lighting renovation, but at the same time we increased the level of illumination: in the main hall to FIBA LEVEL 1, and in the warming-up hall to FIBA LEVEL 2. In the main arena, the latest technology for regulating LED lamps in sports facilities, the so-called DMX, was applied, which, in addition to adjusting the power of each lamp, also enables the creation of lighting effects and connection with other control systems. Despite the increased level of lighting in the main hall, the total load of the new lamps is lower than the previous one, thus ensuring energy savings.



3

Buildings
partially energy retrofitted



706,281

EUR

Investment value



23,042

m²

total renovated area

of which:

18,353

m²

The Stožice Arena, where
the lighting was renovated

CO₂
(eq)222 tonnes
less emissions

10,600

average-sized trees

Partial Energy Retrofits of Buildings

Building	Address
Franc Šturm Music School – Šentvid Branch	Prušnikova 100, 1000 Ljubljana
Vižmarje-Brod Primary School	Na gaju 2, 1000 Ljubljana
The Stožice Arena*	Vojkova cesta 100, 1000 Ljubljana

* savings only on electric energy

- » **Start of works:** September 2020
- **Completion of works:** March 2021



Investment amount	Energy consumption before the retrofit (kWh/m²a)	Energy consumption after the retrofit (kWh/m²a)
€ 89,253.60	126.4	66.8
€ 380,122.70	110.2	47.4
€ 199,305.20	159.03	141.52





6 >> The Works Continue

In 2021, we will continue the second part of the third public-private partnership under the energy performance contracting model covering an additional 17 buildings.

As part of the second part of ERL 3, we will comprehensively retrofit 11 buildings and partially retrofit 6. In the City of Ljubljana, in addition to energy-saving building renovation, we will make additional investments to ensure seismic and fire safety and user-friendly facilities. In 2021 and 2022, we will retrofit 17 buildings, and we will also use the Cohesion Fund for the comprehensive retrofits.



Comprehensive energy retrofits:

Janez Levec Center – Karlovška
 Kolezija Primary School, location Splitska
 Koseze Primary School
 Martin Krpan Primary School
 Prežihov Voranc Primary School
 Prule Primary School
 Rihard Jakopič Primary School
 Trnovo Primary School
 Zalog Primary School
 Vič Kindertens, Rožna dolina Branch
 Livada Primary School

Partial energy retrofits:

Miško Kranjec Primary School
 Vič Primary School
 Sports Center Bežigrad – Ježica
 Pedenjped Kindergarten, Učenjak Branch
 Šentvid Kindergarten, Sapramiška Branch
 Trnovo Kindergarten



Energy
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