SMART PRAGUE and the City's ENERGY SAVINGS

SMART PRAGUE

G U E G A



13 NOVEMBER 2019 JIRKA PETERKA

The Vision of Smart Prague 2030

A better QUALITY OF LIFE in a PROSPEROUS CITY thanks to the ACTIVE USE of MODERN TECHNOLOGIES



Key Areas in the Vision and Thematic Spheres



Mobility of the future



Smart buildings and energy



Attractive tourism



A waste-free city



People and the urban environment



Data fields

OIOPERÁTOR CTICT



The Vision 2030 - Climate Commitment

The Prague City Council has authorized the climate commitment

By 2030 reduce CO_2 emissions by 45% versus the production of CO_2 in 2010

These goals are achievable also thanks to the huge potential of energy savings in buildings



Strategic Projects of Smart Prague



energy system Energy savings thanks to the EPC method



Energy management

> O I OPERÁTOR C T ICT

Building Energy System

- Prague owns more than 1,200 buildings and municipalities own another 3,000
- Initial building analysis using a proprietary methodology
- A system for rating the suitability of buildings for various energy measures
- Allows for qualified decision-making regarding investments in energy measures and innovations in buildings





Building Energy System used at Aquacentrum Šutka



Building card

Karta hodnocení budovy dle Metodiky

	Hate V ballovy							
			Aquacentrum Šutka	9				
	Kód budovy v ENO		11104470)				
	KÚ		Troja [730190]]				
	List vlastnictví		885	i				
	Ulice		Čimická	à				
	č.p.		848	1				
	par. č.		1087/2	2				
	Způsob využití		Budova pro kulturu					
	Způsob ochrany		památkově chráněné územi	í				
	Rok výstavby	•						
	Poslední technické zhodnocení (Inocení (r						
Obalka budovy								
č.	kritérium	Průměrné váhy	Hodnota	Zateplení	Body			
1	Obvodové stěny	0,31	Cihelené bloky (Porotherm apod.)	ANO	9,06			
2	Výplně otvorů	0,47	Kovová s izolačním zasklením		7,78			
3	Střecha	0,16	Plochá střecha	Částečně	5,93			
	Podlaha nejnižšího vytápěného							
4	podlaží	0,05	Podlaha vytápěného suterénu	ANO	8,95			
		Vážený so		7,94				

Recommendation methodology



	Vážený součet bodů		7,94	
	Technické zařízení budovy	Vedlejší		Roof insulation
č. kritérium	Hlavní zdroj	% využití zdroj	Body	riournsulation
1 Vytápění	0,20 CZT	100 2005	8,23	
2 Chlazení	0,18 Lokální zdroje chladu	5	0,35	
3 Větrání	0,15 Nucené větrání s rekuperací		7,50	Technolo
4 Uprava vlhkosti	0,18 Pro celou budovu		10,00	
5 Priprava TV	0,05 CZT	Průtočný	8,23	
7 Další technologické prvky	0,01 Zarrykove 0,06 kabina;Výtah;Serverovna;Kuchvně	<u>.</u>	9,54	measure
8 Způsob měření	0,04 Fakturační měřidla		2,00	modeare
9 Zavedený EM	0,04 NE		0,00	Lod light
	Vážený součet bodů		6,17	Lea iigiil
PENB	Kategorie			0
Celková dodaná energie		kWh/m²/rok		Efficient oc
Neobnovitelná primární energie		kWh/m²/rok		
Celková energeticky vztažná plocha		m²		
Doporučení				ot heat e
Obálka budovy	Zateplení střechy/stropu,		-	orribute
Technické zařízení budovy	Instalace podružného měření a regulace, Zavedení Energ	etického managementu		
				O L OPERATOR

tion

chnology easures d lighting ent source heat etc.

- A basic tool for monitoring energy consumption
- In place in 21 buildings e.g., the Jedličkův ústav facility, schools, seniors homes
- We are monitoring all the commodities







- Special combined sensors for monitoring temperature, CO2 and humidity levels
- A special sensor for monitoring volatile substances and oder
- Can for example detect colour fumes during restoration work in a museum
- Is a base for additional installation of the ventilation system in seniors homes







Graphic display of the consumption of commodities and measured levels from the sensors of indoor environment











- Based on this data we are able to uncover water leaks, optimize heating and regulate the quarter-hour maximum of electricity
- This data also serves as a base for group buying of all commodities and as a detailed analysis for the realization of EPC projects
- Evaluation of potential savings
- **Cost-savings** achieved for the city by organisational measures: more than 50 000. And **1t/year of CO2**





Energy Performance Contracting is a type of a contractual relationship in which:

- The supplier guarantees to the customer the contracted savings
- If the guaranteed savings are not achieved, the supplier compensates the difference to the customer
- The investment is paid for by the supplier of the solution and it is paid for from the savings



The buildings in which Prague will save



The Municipal house



The Holešovice Exhibition Grounds



Municipal Police Directorate



The Oliva Children's Sanatorium



The Šutka Aquacentre



The headquarters of the Technical Road Administration Company

> O I OPERÁTOR C T ICT

Standard technologies used in the buildings:

- Energy management
- Replacement of existing lighting fixtures with cost-saving LED panels
- Water savings with the use of water flow controllers
- Installation of thermostatic radiator heads
- Installation of new and more efficient sources of heat









Standard technologies used in the buildings:

- Installation of new and more efficient sources of heat
- Installation of thermostatic radiator heads











Special technologies employed in specific buildings:

- Energy Saver adjusts the voltage fluctuation and other parameters of electricity. This technology extends life time of electricity devices and saves 15% in consumption
- Installation of photovoltaic panels electricity for direct use









Special technologies employed in specific buildings:

- Preheating of pool water with waste shower water using a heat pump
- European technological innovation for cleaning and the reuse of pool water. This technology saves 30% in water consumption







O I OPERÁTOR C T ICT





Where we plan to save





How much will we save?

Guaranteed savings over 12 years of this project

€4 million



Guaranteed savings over 12 years of this project

37 615 t of CO₂







THANK YOU FOR YOUR ATTENTION

0 | C T

THERE AND ALL