



Best Practice Example

Project title	Indoor swimming hall Floridsdorf: Overall renovation with Performance Contracting
Title picture	<ul style="list-style-type: none">* Indoor swimming hall Floridsdorf, Vienna. (359 K)* The roof of the of the swimming hall with more than 1.000 m2 solar collectors. (137 K)* Inside the swimming hall. (320 K)
Type of building	Others
Street	Franklinstraße 22
Postcode	1210
City	Vienna
Country	Austria
Year of construction	1961
Construction period	2005
Investment	3.128.491 (exkl. VAT)
Annual savings in €/a	366.000 (exl. VAT)
Improving measures	<ul style="list-style-type: none">* Heating* Air Conditioning* Ventilation* Distribution Transformers* Renewable Energy Sources* Control Systems* Contracting
Energy demand before refurbishment	6400 MWh district heating
Resulting energy savings	64%
Resulting CO2-Emissions-Savings	600 t
Effective area (m²)	18400
Short description	The indoor swimming hall, located in Vienna, in the district Floridsdorf, was renovated using Performance Contracting. The



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retrofitting included the installation of a solar power system, heat pumps for the outlet air of the swimming hall and a heat recovery system for the outlet air of the sauna. The regulation system of the ventilation was exchanged and a control technology was installed for the whole building. The bathwater filters were retrofitted and the filter flushing was optimised. Measuring technique and chemical dosage were refurbished. The heat energy consumption was reduced by about 64%, the water consumption by about 40%. The pay back time of this investment is about 8,5 years.

Energy concept

General information

The building was constructed in 1961 to 1964. Since then it was only slightly modernised, thus some components have reached the end of their life span. The renewal of these technical installations and construction measures was part of the tender for Performance Contracting and it should be financed by energy-saving and consequently reduced energy costs. Apart from the energy consumption focus was given to water-saving and water technology. The dimension of the measures made an service interruption necessary, whereas the interruption should be as short as possible in respect to the requirements of the building owner, associations and schools. In fact the retrofitting was finished within five weeks. The size of the swimming hall is 18.400 m² and about 770 m² swimming area. The whole building is heated by district heating.

Energy-savings

The heat energy-savings were reached by installing a solar power system including absorber mats by 1050m². Depending on the time of the year the solar power system is warming up a 30m³ water storage directly or indirectly by a heat pump. The heat of the outlet air of the swimming hall is also delivered to the heat pump. The heat gained by this heat pump is used for preliminary heating of supply air, underfloor heating and hot water. A heat recovery system was installed for the outlet air of the sauna. The reconstruction of the ventilation system covered the exchange of the pneumatic regulation inclusive switching cabinets. A control technology was installed for the whole building.

- * Exchange of the wattless current compensation
- * Ventilation by motorised skylight and door switch
- * Regulation of the sauna
- * Condensate return at the high-speed steam generator
- * General optimisation of the whole control system with night-time heating reduction and peak load management
- * CO₂ and dew point steered operation with circulating air



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Water savings

The filters of the bathwater were refurbished or exchanged and the flushing of the filters were optimised by means of new pumps. Single-layer filters were reconstructed to multi-layer filters and a storage for the flushing water was installed. The existing bathwater pumps were equipped with frequency converter in order to be able to adapt the circulation power to the demand.

Measuring technique and chemical dosage were refurbished or renewed and the control system for the bathwater technology was exchanged as well in order to optimise the operation. The regulation installed was merged into the building control technology. The waste water of the filter flushing is collected in a storage tank and treated by means of membran filters. So far this kind of technology had not been installed in any Austrian swimming pool. Additionally te showering armatures were retrofitted.

Communication

The employees of the swimming hall were informed about the goals and the measures of the performance contracting by brochures and informative meetings. During the contract period the effects of the measures on the energy consumption are displayed and discussed. The contractor controls regularly the performance and the operation of the technical installations by remote monitoring. The effectiveness (quality) of the measures is constantly examined by monthly updated energy statistics and sub metering.

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Energy concept files

* [KonzeptFloridsdorf.pdf](#) (260 K)

Costs

The whole project was financed in the way of Performance



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Contracting. The investment was about 3.128.491 Euro (exkl. VAT).
The pay back time is about 8,5 years.

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