

National Theatre Prague

SEVEN & ENESA



The National Theatre is the Czech Republic's representative stage. It is one of the symbols of Czech national identity and a part of the European cultural arena. It is a bearer of national cultural heritage and at the same time an arena for free artistic creativity. Today's National Theatre comprises three artistic ensembles – opera, drama and ballet – which alternate in performances in the historic building of the National Theatre, the Estates Theatre and the Kolowrat Theatre.

The National Theatre representatives are undergoing a long standing effort in decreasing the energy costs related to the Theatre buildings operation. The main part of energy, used for heating and cooling, has been decreased with the Energy Performance Contracting (EPC) project organised in cooperation with the ENESA (Energy Services Company – ESCO).

As a separate part of this effort, a focus on lighting has identified another significant potential for energy efficiency with relatively quick payback time.



Building data

Building type
National Theater

Location
Czech Republic, Prague

Year of construction
modernized in 20th century

Energy savings:

- The total achieved savings equal 33 % of the original energy costs.
- new light sources annual savings of
 - 460 MWh of electrical energy,
 - 542 tons of CO2 emissions
 - about one million Czech crowns yearly.
- the total lighting electricity consumption in the National Theatre facilities will decrease by about a half.
- waste heat, which brings savings in the order of thousands of crowns every day
- more economical operation of the theatre reduced carbon dioxide emissions by more than a thousand tonnes
- second photovoltaic power station at the National Theatre will save a further 25 tonnes, and generate electricity that would suffice for 7-8 households that do not use electricity for heating.

Measures performed

- photovoltaic power station
- uses for example waste heat
- overall rationalization of energy consumption in the National Theatre buildings
- air-conditioning
- Heating and cooling decrease with the Energy contracting (EPC) project organized in cooperation with ENESA
- lighting (selecting of appropriate light sources) technical evaluation conducted by SEVEN, The Energy Efficiency Center
- replacement of the original light with energy saving compact fluorescent lamps and LED diodes
- the replacement of linear fluorescent tubes with more up-to-date and more economical linear fluorescent tubes and the installation of regulation and control equipment. ENESA

