

## iSERVcmb Best Practice

Electricity savings of 21% per year through optimisation of the air handling units' operating schedule

### Building number 14 HU

#### Introduction

This report summarizes the results of building number 14's participation to the iSERVcmb project with regard to its HVAC system energy consumption. The report refers to the period from 2013 to 2014.

#### iSERV Achievements

##### Energy Savings

Electricity: 1.00 kWh/m<sup>2</sup>

Gas: 0 kWh/m<sup>2</sup>

##### Cost Savings

Electricity: 0.096 €/m<sup>2</sup>

Gas: 0 €/m<sup>2</sup>

##### Emissions Reductions

Electricity: 0.000354 tCO<sub>2</sub>/m<sup>2</sup>

Gas: 0 tCO<sub>2</sub>/m<sup>2</sup>

##### Investment to achieve savings

0 €/m<sup>2</sup>

**21%**

Electrical consumption reduction of cooling and ventilation systems since participation



	Key Figures
Location	Hungary
Sector	Office
Construction Date	2008
Project Size	20,095 m <sup>2</sup>
EPC	C
Sub-metering Level	Party Metered
Data Frequency	Daily
Data Collection Protocol	Stand Alone system
Data Sending Protocol	Manually extract & send data to an address
Nature of Savings achieved	Improved Operating Schedule Improved HVAC Control
No. HVAC Systems	7
HVAC Components	<input checked="" type="checkbox"/> Heat Generators <input checked="" type="checkbox"/> Cold Generators <input type="checkbox"/> All-in-One Systems <input type="checkbox"/> Heat Pumps <input checked="" type="checkbox"/> Air Handling Units <input checked="" type="checkbox"/> Humidifiers <input type="checkbox"/> Dehumidifiers <input checked="" type="checkbox"/> Pumps <input type="checkbox"/> Storage Systems <input checked="" type="checkbox"/> Terminal Units <input type="checkbox"/> Heat Recovery <input type="checkbox"/> Heat Rejection

*The operating schedule was modified right at the beginning of the participation, based on the monitored electricity consumption and schedules of the air handling units. Thereby the electrical consumption of cooling and ventilation system is reduced by 21 %, compared to the data of the previous year.*

*Owner of the building number 14*



### Building Profile

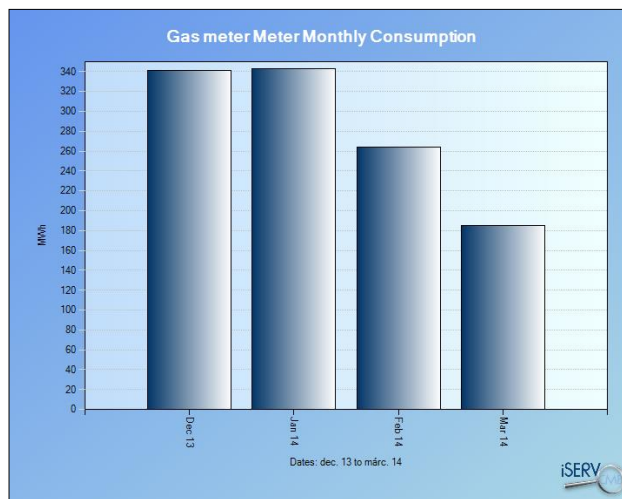
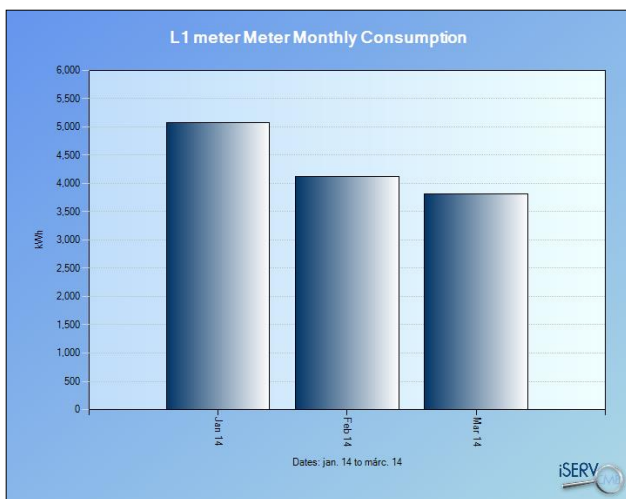
Office building is an office block of 20,095 m<sup>2</sup> conditioned gross internal area in Budapest, Hungary. The building is served by ventilation systems with heating, cooling, and humidification and 4-pipes fan-coil system. Cooling is provided by two packaged chillers, with a total Nominal Cooling Capacity of 2800 kW. The boiler plant consists of two gas fired condensing boilers with total heating capacity of 2400 kW.

### Building Management System installed

The building systems are controlled by a BMS, and the system operates on an optimized stop and start. The BMS was also used for data collection in this case study. The building is occupied from 07:00 to 20:00, from Monday to Friday. Outside of these hours, setback points are used.

### Electrical energy savings due to improved operating schedule

The data providing started on December 2013 and it includes the gas and electricity consumption. The electrical energy consumption data of liquid chillers, air handling units, humidifiers and pumps have been collected. The collected gas consumption data reflects the consumption of the whole building. The operation schedules of the air handling units were reduced, due to the monitoring for the project. The reducing of the air handling units' operation hours resulted 21% electricity saving. The electricity consumption of L1 air handling unit and the gas consumption of the boilers can be seen on the below figures.



[www.iSERVcmb.info](http://www.iSERVcmb.info)

how energy efficient are you really?

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