

## What **could be saved?**

Savings of up to **33%** in a building's total electrical energy use – often for little capital outlay.

Annual energy savings around **9% - 15%** on average.

Projected annual electrical energy savings across the EU Member States are 0.3 to 5% of its total annual primary energy use.

Projected **annual electrical cost savings between €1,400M – €60,000M**, based on achieved savings in operational buildings.

Time – staff resources, time spent investing in the wrong areas, quicker reduction of unnecessary resource use.

### “Project Overview”

at [www.iservcmb.info/results](http://www.iservcmb.info/results) for more detail.

## Have these **savings** been **checked?**

The project **concurrently measured Indoor Air Quality in a sample of 62 systems across Europe and Physically Inspected 64 iSERVcmb HVAC systems.**

These tests showed that **individual system findings from the iSERVcmb process generally reflected the observations from the Inspections, and the IAQ measurements did not reveal problems concerning Indoor Air Quality being achieved, based on currently accepted IAQ standards.**

### “Indoor Air Quality” and “Physical Inspections”

at [www.iservcmb.info/results](http://www.iservcmb.info/results) for more detail.

## What do the **Professional Associations** say?

“*The iSERV data entry spreadsheet is an invaluable tool for gaining an overall understanding of the HVAC system described and for collating information essential for Inspections.*”

**Hywel Davies, CIBSE**

“*iSERVcmb will change the guidelines on achieving energy efficiency in HVAC systems.*”

**Olli Seppänen, REHVA**

“*The reports produced within the iSERVcmb will be a useful information regarding real energy use of HVAC&R products.*”

**Sylvain Courty, Eurovent Certita Certification**

## Where can I **find out more?**

Cardiff University  
**Ian Knight – Co-ordinator**  
[knight@cf.ac.uk](mailto:knight@cf.ac.uk)

Intelligent Energy – Europe (IEE) SAVE  
Project  
IEE/10/272

May 7th 2011 to May 6th 2014

Project results:

<http://www.iservcmb.info/results>

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# HOW ENERGY EFFICIENT ARE YOU REALLY?



PROJECT

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



AUSTRIAN ENERGY AGENCY

University of Ljubljana  
Faculty of Mechanical Engineering



INSPECTION OF HVAC SYSTEMS THROUGH  
CONTINUOUS MONITORING AND BENCHMARKING

# How should you describe a building to **reduce** its energy use?

Common format to allow comparison between buildings and systems throughout Europe

**CUBRIC Building IT Suite - Example of Single Space Configuration Heating, Ventilation and Air Conditioning System Details**

Building	System	System Name	System Type	System Location	System Status	System Details	System Notes
Building	System	System Name	System Type	System Location	System Status	System Details	System Notes
Building	System	System Name	System Type	System Location	System Status	System Details	System Notes

**Utility Meter**

System	System Name	System Type	System Location	System Status	System Details	System Notes
System	System Name	System Type	System Location	System Status	System Details	System Notes

**HVAC Sensor**

System	System Name	System Type	System Location	System Status	System Details	System Notes
System	System Name	System Type	System Location	System Status	System Details	System Notes

**HVAC System**

System	System Name	System Type	System Location	System Status	System Details	System Notes
System	System Name	System Type	System Location	System Status	System Details	System Notes

**HVAC Component**

System	System Name	System Type	System Location	System Status	System Details	System Notes
System	System Name	System Type	System Location	System Status	System Details	System Notes

**Small Power System**

System	System Name	System Type	System Location	System Status	System Details	System Notes
System	System Name	System Type	System Location	System Status	System Details	System Notes

**Lighting System**

System	System Name	System Type	System Location	System Status	System Details	System Notes
System	System Name	System Type	System Location	System Status	System Details	System Notes

**Other System**

System	System Name	System Type	System Location	System Status	System Details	System Notes
System	System Name	System Type	System Location	System Status	System Details	System Notes

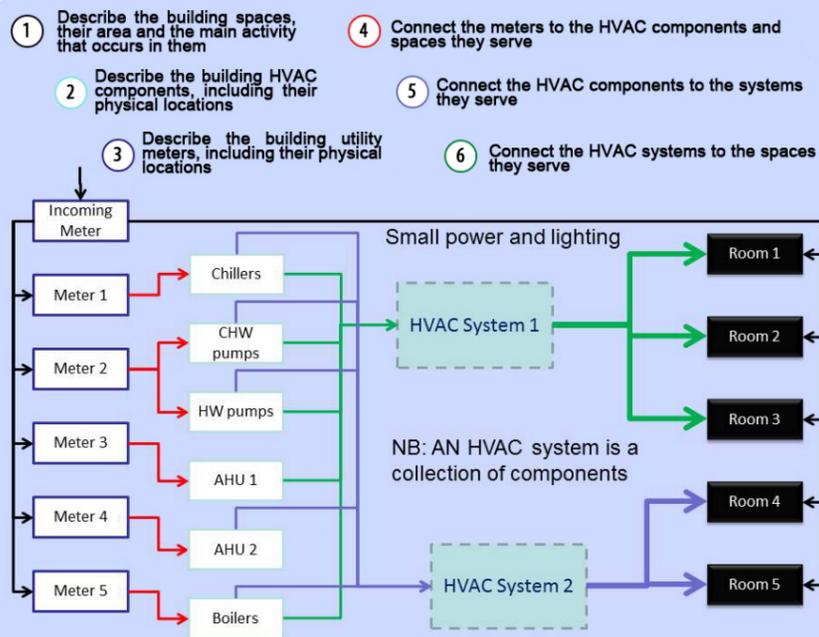
**Schedules of Setpoint and Occupation**

System	System Name	System Type	System Location	System Status	System Details	System Notes
System	System Name	System Type	System Location	System Status	System Details	System Notes

**Space**

System	System Name	System Type	System Location	System Status	System Details	System Notes
System	System Name	System Type	System Location	System Status	System Details	System Notes

Physical asset descriptions allow actions to be focussed  
Understand what connects to what



**“iSERVcmb Spreadsheet”**  
at [www.iservcmb.info/results](http://www.iservcmb.info/results) for more detail

# The industry’s view

“iSERVcmb is the independent evidence which can sort out the wheat from the chaff.”

John Woollett, Swegon AB

“The iSERVcmb database provides a good first step on the road to help ensure healthy sustainable buildings for the next generations of people working in our city based economies.”

Peter Dyment, Camfil Farr Ltd

# How much energy and power should my building services systems use?

Measured figures for operational energy use and power demands from EU buildings and systems

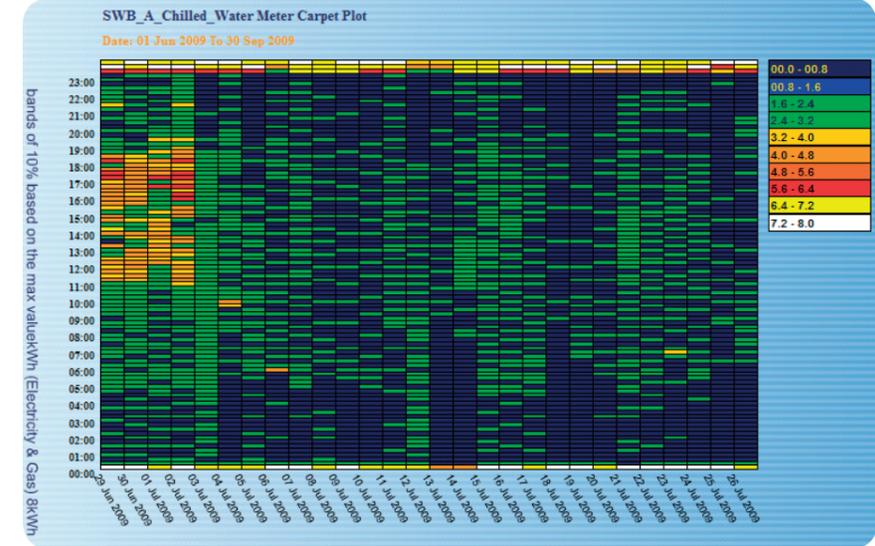
**Electricity - Average Power Demand and Standard Deviation in W/m<sup>2</sup> by Component Type and Activity**

| Activity Name | System Type | Sample Size | Avg | SD |
|---------------|-------------|-------------|-----|----|-----|----|-----|----|-----|----|-----|----|-----|----|-----|----|-----|----|-----|----|
| Activity Name | System Type | Sample Size | Avg | SD |

**“Power and Energy Benchmarks”**  
at [www.iservcmb.info/results](http://www.iservcmb.info/results) for more detail

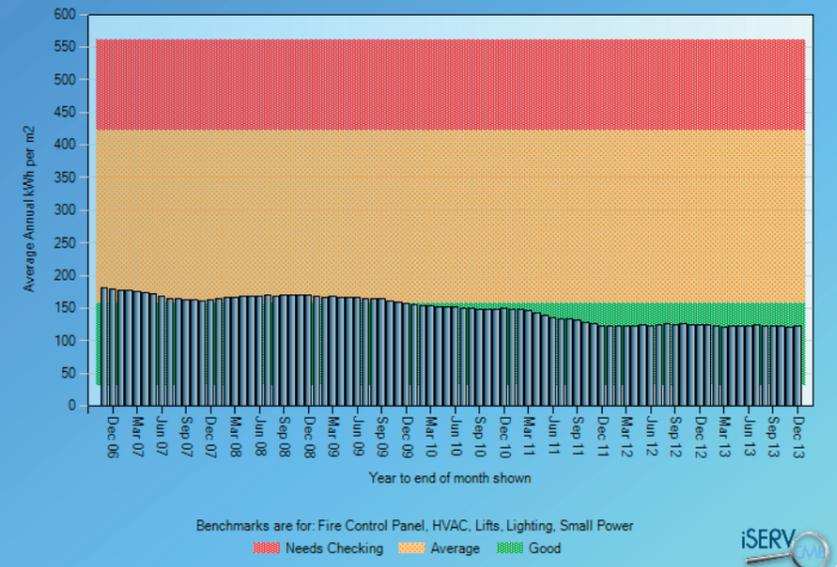
# What happens when you understand where the energy goes?

Confidence to invest  
Better control



Sustainable energy savings

# McKenzie House Average Rolling Annual Electricity Consumption per m<sup>2</sup> - Total Benchmark Ranges for Configured Systems



**“iSERVcmb Case Studies”**  
at [www.iservcmb.info/results](http://www.iservcmb.info/results) for more detail