

TIMEPAC Academy

Session 5 Planning Re-Co Activities

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di Torino



What are the key steps of a successful planning of Re-Co activities?

A list of key steps that facilitate further work:

- **Clearly define objectives and scope** in accordance with the **expectations of the client** (regarding improving energy efficiency or/and occupant comfort, scope of systems and equipment...)
- **Gathering Information and Documentation** (design drawings, manuals, utility bills, and performance data...)
- **Assemble project team and assign roles and responsibilities**
- **Conduct Preliminary Assessment** (walkthrough inspections to identify potential performance issues, inefficiencies, and opportunities for optimization)
- **Identify Performance Baselines** (to benchmark current performance levels and track improvements over time)
- **Develop a detailed Re-Co plan** (outlining the specific activities, tasks, and timelines, methodology for data collection, analysis, performance testing, and implementation of corrective actions, communication and co-ordination, documenting and reporting findings ...)
- **Kick off meeting and establish a relationship with the building's management and personnel**
- **Establish effective lines of communication and co-ordination between the project team and building's management and personnel**

Honest communication and co-operation

Honest communication facilitate effective communication with building owners, facility managers, and other stakeholders.

By presenting assessment findings and recommendations in a clear, transparent, and collaborative manner, experts and building owner and operators can build trust, and encourage buy-in for energy efficiency initiatives.

Communication and cooperation are essential for several reasons:

- **Comprehensive Understanding** (experts bring diverse perspectives and specialized knowledge)
- **Identification of Opportunities** (collaboration between experts and building operators facilitates the identification of energy-saving opportunities and potential improvements)
- **Optimized Solutions** (integrated and optimized solutions that address multiple aspects)
- **Continuous Improvement** (establish culture of continuous learning and improvement)

What needs to be agreed upon with the owner/users before the site visit?

- Before conducting a site visit for the assessment of a building's energy performance, it's important to **establish clear agreements** with the **building owner** to ensure a smooth and productive process:
 - **Purpose and Scope of the visit** (define the objectives and scope of the energy performance assessment, including the specific goals, areas of focus, and desired outcomes)
 - **Obtain permission** from the owner (ensure access to the building and relevant facilities for the site visit. Agree upon the date, time, and duration of the visit, ensuring that **does not disrupt normal operations or activities**)
 - **Information Sharing and Documentation** (building plans, utility bills, maintenance records, and occupancy schedules)
 - **Expectations and Responsibilities:** Clarify the roles, responsibilities, and expectations of both parties (data collection, measurements, observations, and interviews, and agree upon the level of involvement and assistance required from the building operators)
 - **Communication and Reporting:** Establish channels for communication and reporting (frequency and format of updates, progress reports, and final deliverables, ensuring that the owner is informed and involved at all stages of the assessment)
 - **Follow-Up Actions:** based on the findings of the assessment (recommendations for energy-saving measures, potential improvements, opportunities for further collaboration or support in implementing energy efficiency initiatives)

Which data needs to be collected during the site visit?

- Various types of **data need** to be collected to evaluate building's energy **performance**, identify **opportunities** for improvement, and develop **recommendations** for energy-saving measures.
- Key data points that typically need to be collected:
 - **Building type**, size, and layout (e.g., floor area, number of stories, building orientation)
 - **Occupancy details** (e.g., number of occupants, occupancy patterns, usage hours)
 - **Utility Bills and Energy Consumption** (historical energy consumption data - electricity, natural gas, fuel oil..., for a period of at least three years)
 - **HVAC Systems** (types, equipment specifications, operating schedules, setpoints, and control strategies)
 - **Lighting Systems** (Types, controls and automation systems, Lighting levels and distribution)
 - **Building Automation and Controls** - building automation systems, building management systems (control strategies, settings, schedules, and programming parameters, energy performance data...)
 - **Occupant behaviour** and comfort (temperature, humidity, and indoor air quality, opportunities for behaviour change)
 - **Site observations and inspections** (visual inspections of building systems, components, and equipment for signs of wear, damage, or inefficiencies)
 - **Plug Loads and Equipment**

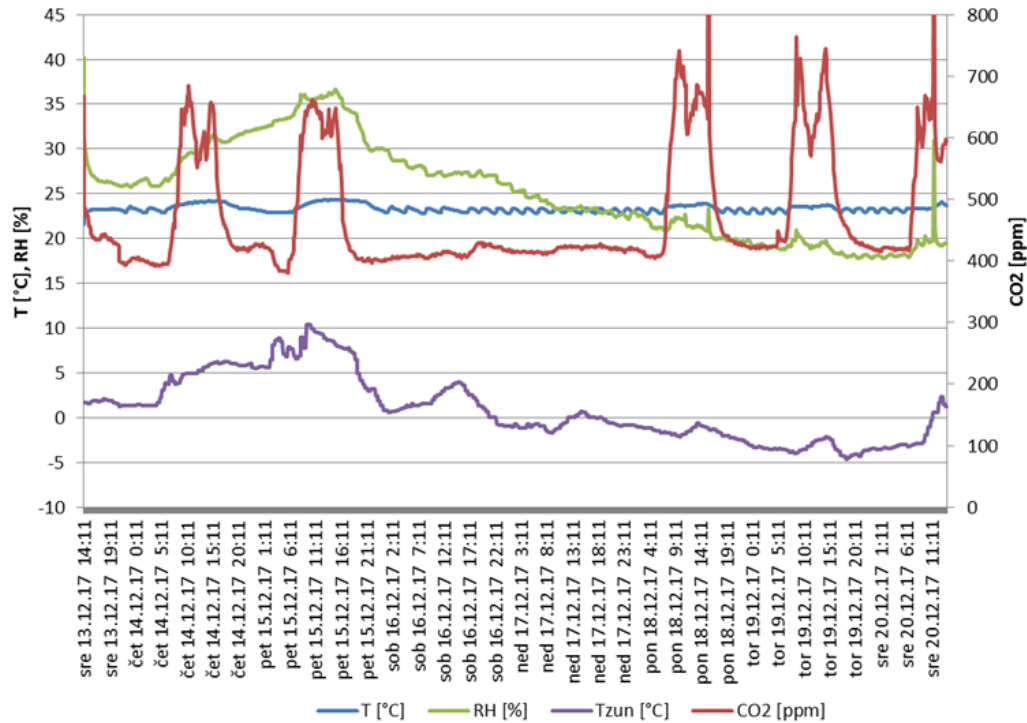
What are the main systems and end-user equipment that need to be checked during the Re-Co activities

Main systems and equipment:

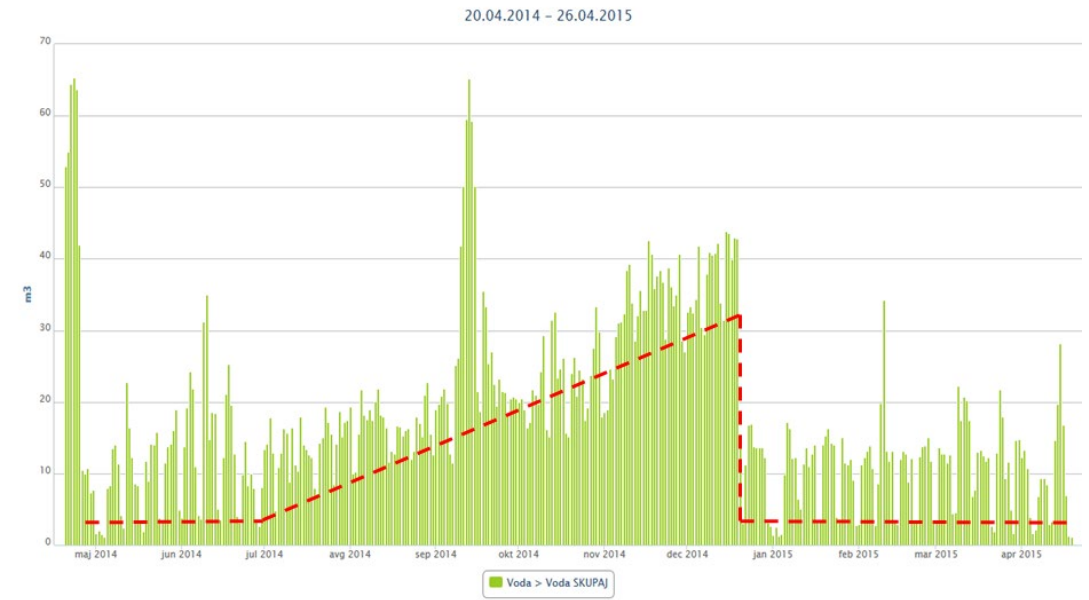
- **HVAC (Heating, Ventilation, and Air Conditioning) Systems**
 - Heating (boilers, chillers, air handlers, cooling towers, heat pumps, and rooftop units)
 - Air distribution systems (ductwork, dampers, diffusers, and air filters)
 - Control systems and thermostats for HVAC operation and temperature control
 - Ventilation systems for indoor air quality management and occupant comfort.
- **Lighting Systems**
 - Lighting fixtures, lamps, and bulbs used for interior and exterior lighting.
 - Lighting controls, including occupancy sensors, daylight harvesting controls, timers, and dimmers.
- **Water supply systems** (including pipes, valves, fittings, and fixtures)
- **End-User Equipment and Appliances**
 - Office equipment, computers, printers, copiers, and other electronic devices
 - Kitchen appliances, refrigerators, stoves, ovens, and dishwashers
 - Medical equipment, laboratory instruments, and specialized equipment for healthcare facilities...
 - Elevators, escalators, generators, backup power systems, renewable energy systems...

Sometimes solutions are easy... (1/3)

Data logger and CO₂ concentration in the room

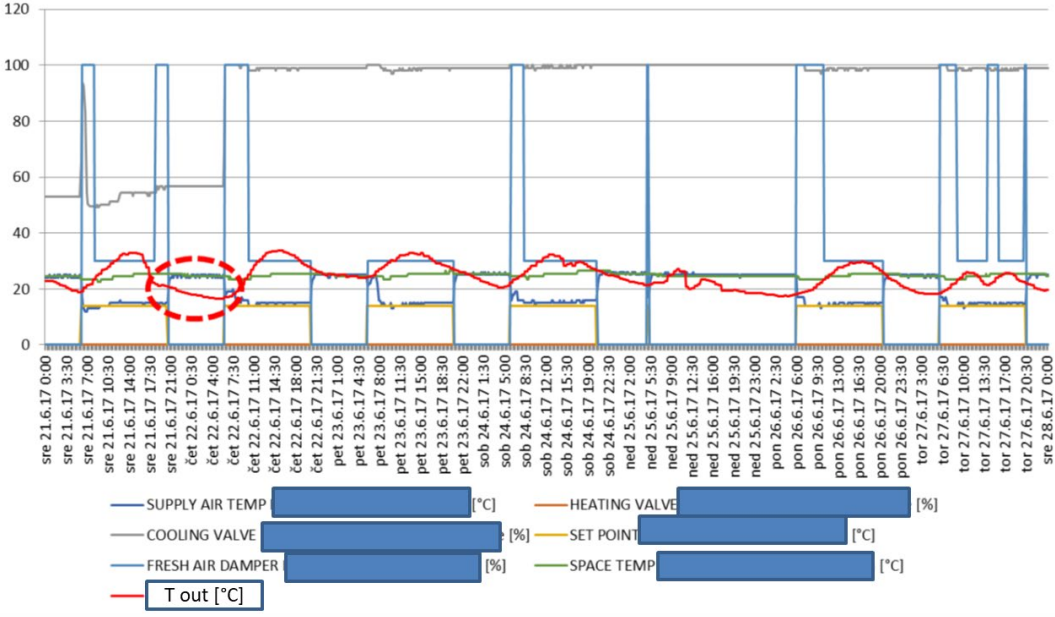


Water supply leakage



Sometimes solutions are easy... (2/3)

(BACS) Introduction of free-cooling with fresh air

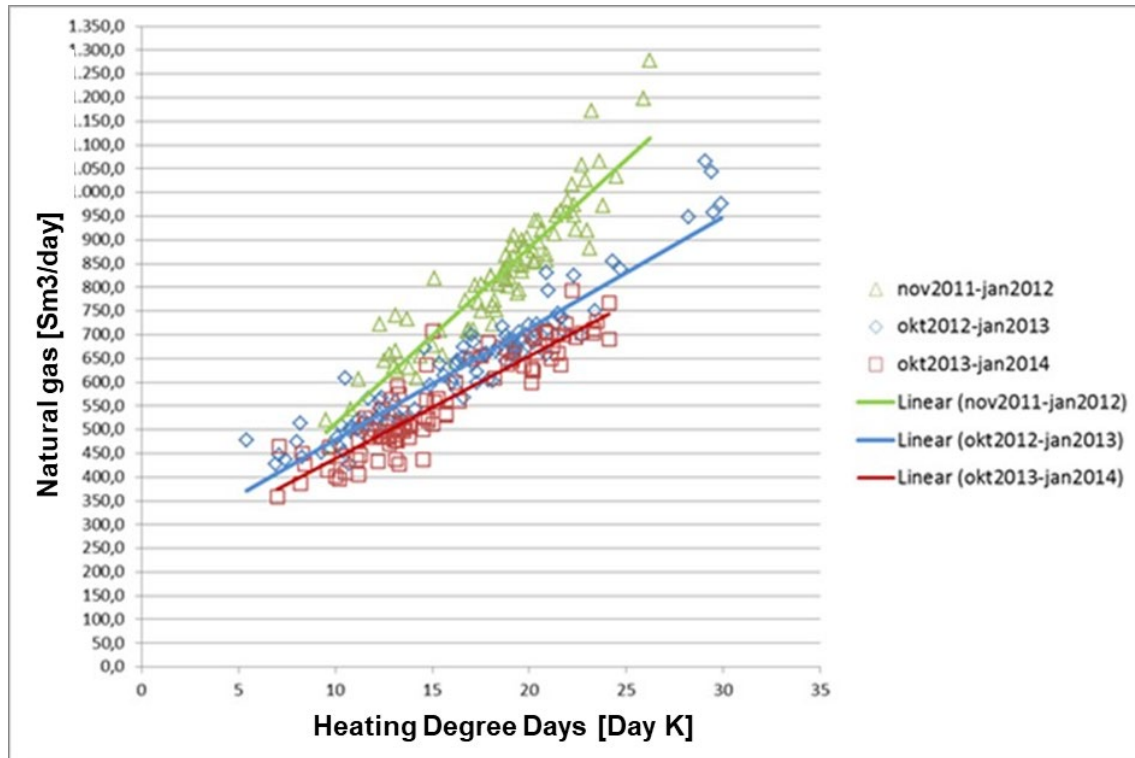


Mounting thermostatic heads and insulation of heat distribution pipes

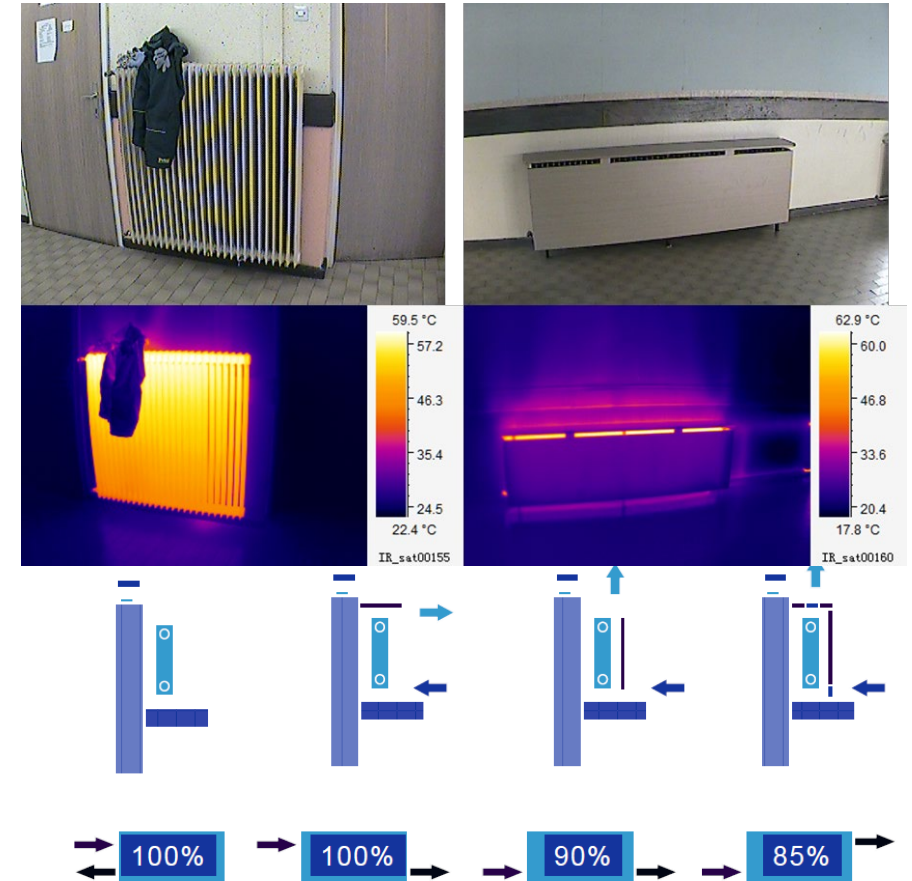


Sometimes solutions are easy... (3/3)

- Correct boiler operating schedules
- Hydronic balancing
- Boiler temperature settings
- Awareness campaign



Covered radiators - nice but not efficient



**If you would like more information,
please visit www.timepac.eu or contact us at
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Thanks for your attention!