

How the European AuditAC project can benefit the air conditioning sector

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Field Benchmarking and Market Development for Audit Methods in Air Conditioning

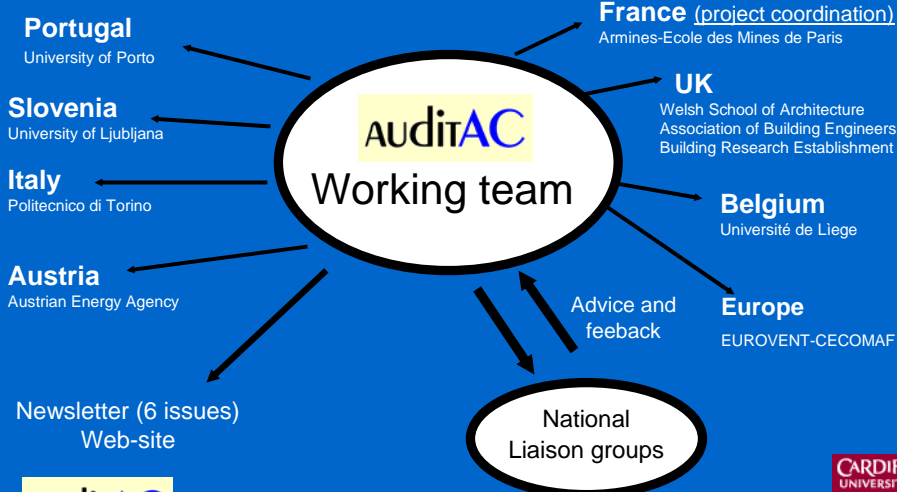
www.energyagency.at/projekte/auditac.htm

What does the title mean?

The project aims to establish:

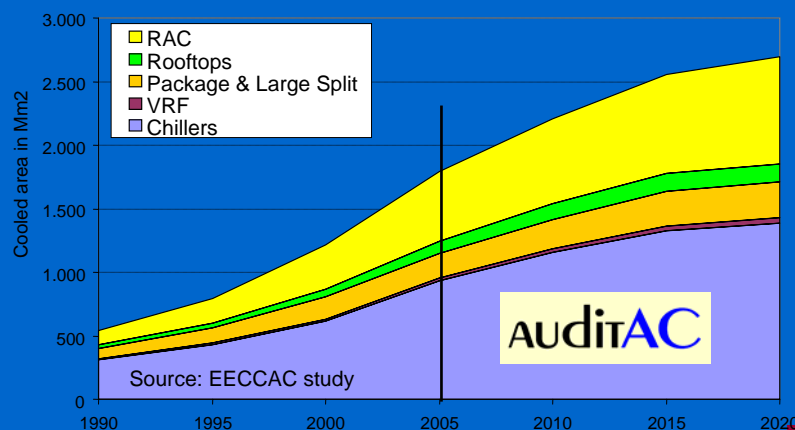
1. Information to assist inspectors and auditors in assessing the potential scope for improving the energy performance of A/C systems in buildings in Europe
2. The benefits of actually implementing energy efficiency measures, thereby encouraging more detailed audits to be undertaken following the inspection, eventually leading to a greater uptake of A/C system energy efficiency improvements

Structure of AUDITAC

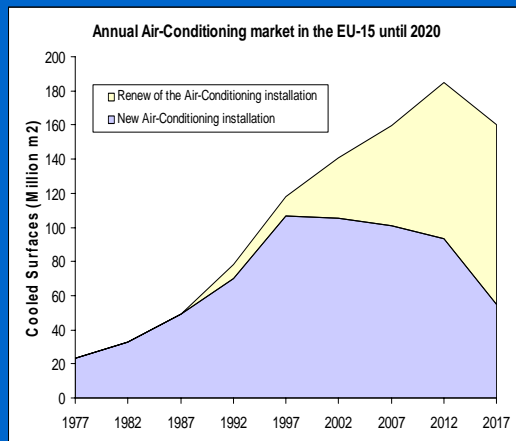


What is the market for A/C in Europe?

Cooled area in Europe 1990 - 2020

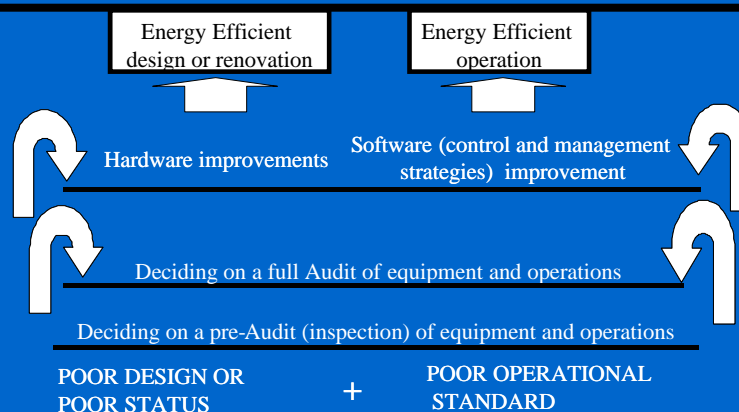


The 90's A/C boom and energy efficiency opportunities



- Many systems are reaching renewal age
 - Potential to improve system performance by up to 50% (EECCAC)
- Building renovation
 - Opportunity to reduce loads

Two opportunities for improving energy efficiency in A/C systems: gains in equipment and operation



The three steps of performance improvement

So where does AUDITAC fit in this market?

AUDITAC does NOT define how to undertake the Inspection of AC required by the EPBD

- EU Member States are in charge of implementation of Article 9 of the Energy Performance in Buildings Directive (Inspection of AC systems)
- However, further efforts are needed to ensure that Article 9 of the EPBD has the desired impact after national implementation.
- AUDITAC intends to provide the information required to DELIVER the savings identified by the Inspection.
- The main issues are:
 - How to raise the acceptance of inspections,
 - How to move from inspection to audit,
 - How to move from audit to implementation of improvements.

Inspection: a pre-audit subject to national regulation

- Limited time spent by the inspector,
- Closed frame of reference (precise list of defects or required improvements),
- Reproducibility (the observations do not depend on the quality of the expert),
- Obligatory and periodic (marking, dates...).
- If measurements are done, they should be mainly non invasive.
- There is a CEN draft standard for undertaking Inspection, which is not compulsory for MS

What can inspection achieve?

- Identify what systems exist
- Identify visible faults – perhaps 5% to 10% saving?
- Give a rough idea of the scale of potential savings (from the size of the existing consumption)
- Identify systems that justify further investigation
- As defined in the EPBD, there is no requirement to check the quality of the indoor environment provided
 - **Energy efficiency without satisfactory conditions is false economy**

AUDITAC information

- AUDITAC will provide a matrix of information covering the predicted energy performance of a range of generic building forms and generic A/C system types throughout the EU.
- This information will be supplemented and reinforced by Case Studies and published information on the energy performance of whole systems and components
- The range of information available means that a searchable database will be used to present information more closely tailored to the user's needs.
- The information will allow an estimate of the savings to be achieved through various actions

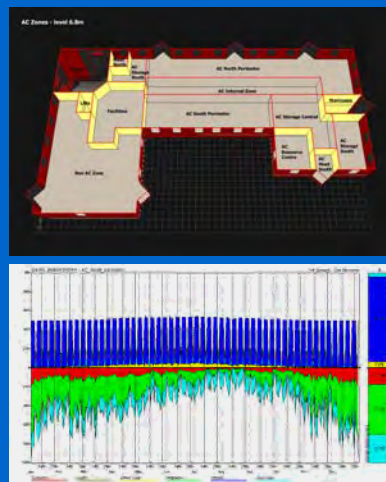
What AUDITAC does NOT provide

- AUDITAC is not an alternative to an Audit or Inspection. It simply provides information that assists these processes.
- The current draft CEN standard applicable to Inspection is prEN 15240: 'Ventilation for buildings - Energy performance of buildings - Guidelines for inspection of air-conditioning systems'
- AUDITAC does not provide VERIFIABLE savings applicable to the specific building and system combination being assessed. It simply provides generic guidance on the likely issues and savings to be obtained for the particular combination of criteria and parameters identified.

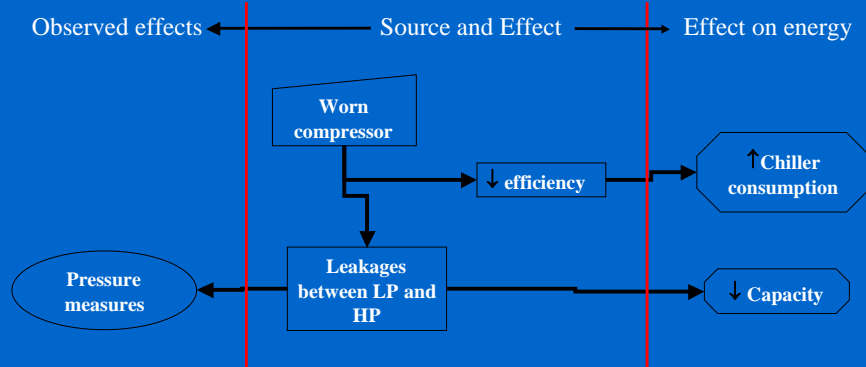
Examples of information that will be provided from AUDITAC

wsa Breakdown of A/C system loads in real and generic buildings

From analysing a range of generic building and A/C system types, the AUDITAC database will enable the inspector and auditor to obtain generic information about where the loads on the A/C systems are likely to be generated, and therefore where their time and effort should best be focussed.



Assessment of effects of equipment defects on efficiency



Presentation of the measured, observed and/or recorded energy use effects of various situations and actions will enable the user to access a rich information source on improving the energy efficiency of the systems they are assessing

Benefits of AUDITAC to the A/C sector

- AUDITAC will provide advice on improving A/C energy efficiency that is valid across the EU
- AUDITAC will help establish A/C system design general guidance that should raise the efficiency of A/C systems installed.
- AUDITAC will be a major asset in the establishment of a commercially viable inspection and audit market, which will in turn increase the market for energy efficient A/C systems and components

AUDITAC Deliverables

- A teaching package on AC inspection, audit and renovation
- A matrix of information on buildings, climate and system interactions, leading to information on improving energy efficiency of the A/C systems through addressing various aspects.
- Oral and written publications
- Information on the existing structures for training and reporting in Europe
- Information on structure of the implementation of article 9 in individual MS
- A searchable database of case studies and best practice, interwoven with the matrix described earlier
- Website and Newsletter

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