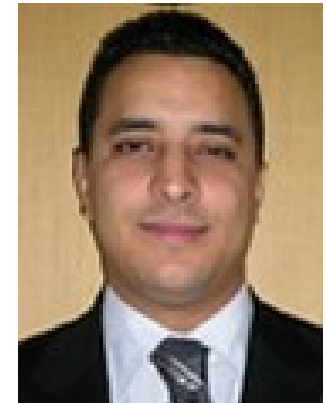


**March 31, 2010 - CENSE special web event
addressing the EPBD Concerted Action-II members**

**Towards a 2nd generation of energy performance
calculation procedures in Europe**
*to increase the accessibility and efficiency of the energy performance
calculation procedures in Europe*

**Examples related to heating,
ventilation and cooling systems**

**Johann ZIRNGIBL (CSTB)
Hicham LAHMIDI (CSTB)**



Building regulations, EPBD and HVAC systems



Past:

Traditionally building regulations are focussing on **building envelope**
Technical building systems (HVAC) are treated within “**product**” standards”



With EPBD:

EPBD requires an “**holistic**” approach
EPBD recast requires indicators for **HVAC system performance**
EPBD recast pays more attention to **inspection**
EPBD favours renewables, energy producing buildings

EPBD underlines importance of HVAC systems in overall energy use

HVAC standards – guidelines for revision

High quality buildings needs high quality tools and evaluation methods



Calculation standards will be applied by software (software proof)

Objective of the standards:

Create methods to improve energy efficiency (aim of the EPBD)

EU - Roadmap towards low energy houses

- Every « **detail** » is important (e.g: type of circulator)
 - Consider **interactions** between HVAC systems and building envelope
- For HVAC « **system** » approach is needed taking into account running conditions (e.g: heat pumps and source, condensing boilers and emitters)

High quality buildings needs high quality tools (detailed methods)

Evaluation methods (regulations) have **to be adapted** to reduced energy use

HVAC standards – guidelines for revision

Not only energy but also indoor air quality and comfort



- In the past, ventilation was important from the hygienic point of view. It **will be also an important factor for energy and comfort in low energy building**
- Monocriteria approach can lead to bad solutions
- **Control systems** will have an important position in the future
- Avoid regarding inspections as an isolated issue but as an integral part of the whole "EP package"

Not only energy is important, others aspects must be included:

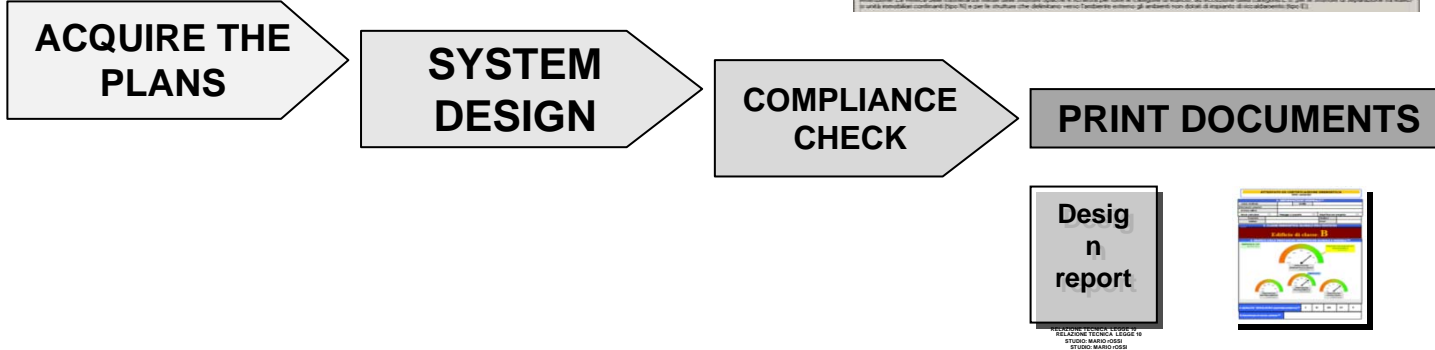
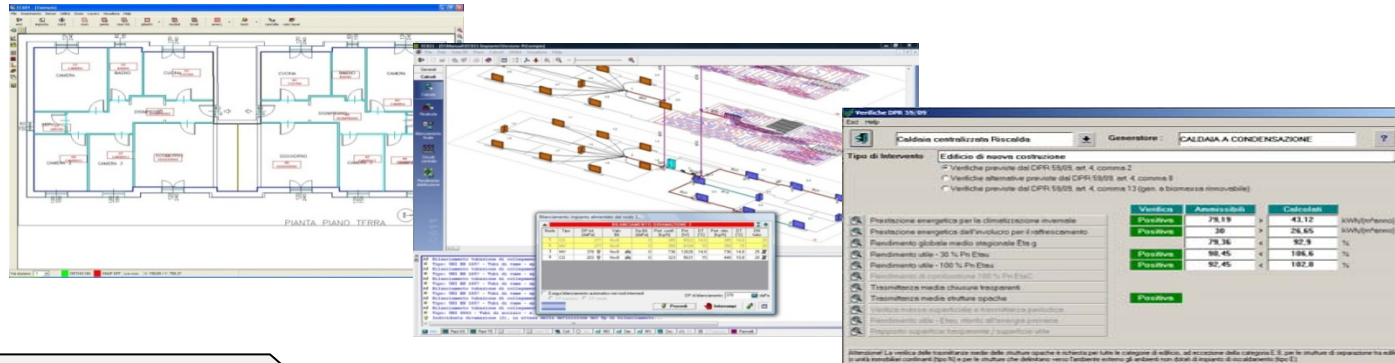
- indoor air quality
- comfort.

A connection must be made with control standards (EN 15232)

A need to build up the "big picture" of inspections, including elements of the EPBD (EP requirements and calculations, Certificates), and including clear definitions of "air conditioning systems".

HVAC standards – guidelines for revision

Linking design, building compliance and reliable information



From HVAC design, detailed information is available
>From system design to energy declaration: **one integrated software**

HVAC standards – guidelines for revision

Linking calculation methods and certified product data



- Calculation method should be based on certified product data (e.g: DHW storage tank)
- HVAC products should be described in the same way (> product testing on European level not on national level)
- HVAC systems and components are sold throughout Europe
- Interest for a European data base for HVAC systems (not only energy)

Reliable calculation has to be based on reliable product data



Synthesis



- ✓ **Technical building systems** are sold throughout all Europe and the world → Harmonized market conditions (evaluation methods) are needed
- ✓ **Building profess.** Needs high quality tools to design and realize low energy building throughout all Europe and the world → Integrated tools, linked to unique databases, will be developed only for an important market
- ✓ **Countries outside Europe** will refer only to high quality tools /standards which can be used throughout all Europe and the world → “Simplified” methods can be developed at national level >no need for internat. standardisation

- Urgent need to develop a **harmonized European method** based on standards
- Urgent need to create an **application field** for the European method

2nd mandate for EPBD-CEN standards

- EPBD-CEN stand. **option** on nat. level
- Use the EPBD-CEN standards for **benchmarking** national methods

More information



More information and downloads: www.iee-cense.eu

The image shows three overlapping document covers. The leftmost cover is for 'Information paper on EN 15316-2-3 Heating systems in buildings - Space heating distribution systems' (P98, 12-10-2008). The middle cover is for 'Information paper on EN 15378 Heating systems in buildings - Inspection of boilers and heating systems' (P109, 12-10-2008). The rightmost cover is a 'PROJECT DOCUMENT' with a status of 'PUBLIC'. The covers feature the 'cense' logo and the text 'Energy Performance of Buildings'.

Disclaimer:

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