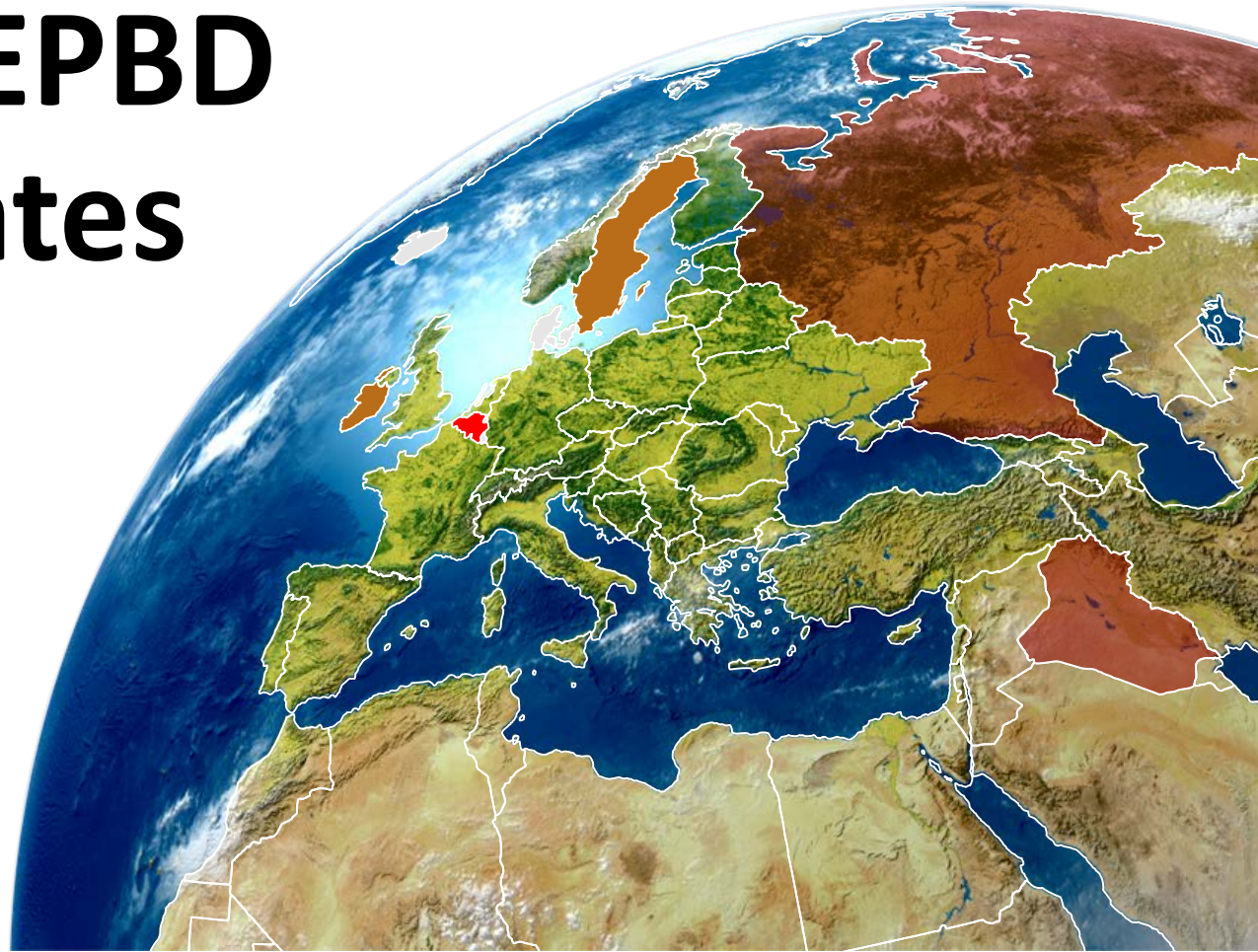
Olemme mukana

Rakennusten energiaseminaari 2017

Finlandia-talossa 4.10.2017

Implementation of EPBD in the Member States



Peter Wouters

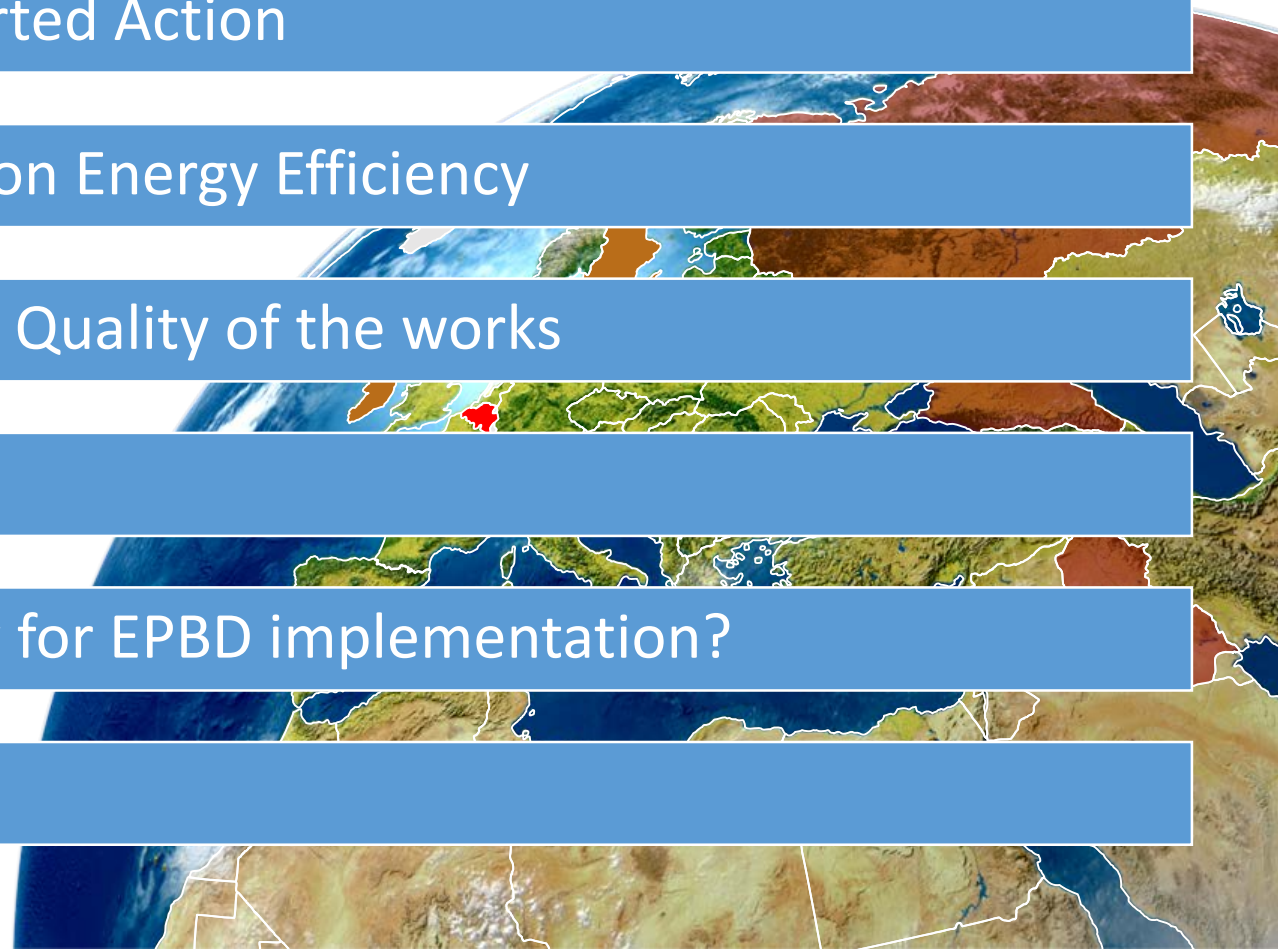
Manager INIVE EEIG

International Network for Information
on Ventilation and Energy Performance

INIVE

Implementation of EPBD in the Member States

- EPBD at European level
- EPBD in the countries: EPBD Concerted Action
- BUILD UP – THE European portal on Energy Efficiency
- QUALICHeCK - EPC compliance & Quality of the works
- Smartness indicator
- Can BIM be a disruptive technology for EPBD implementation?
- Conclusions



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EUROPEAN
COMMISSION

Brussels, 30.11.2016
COM(2016) 765 final

2016/0381 (COD)

Proposal for a

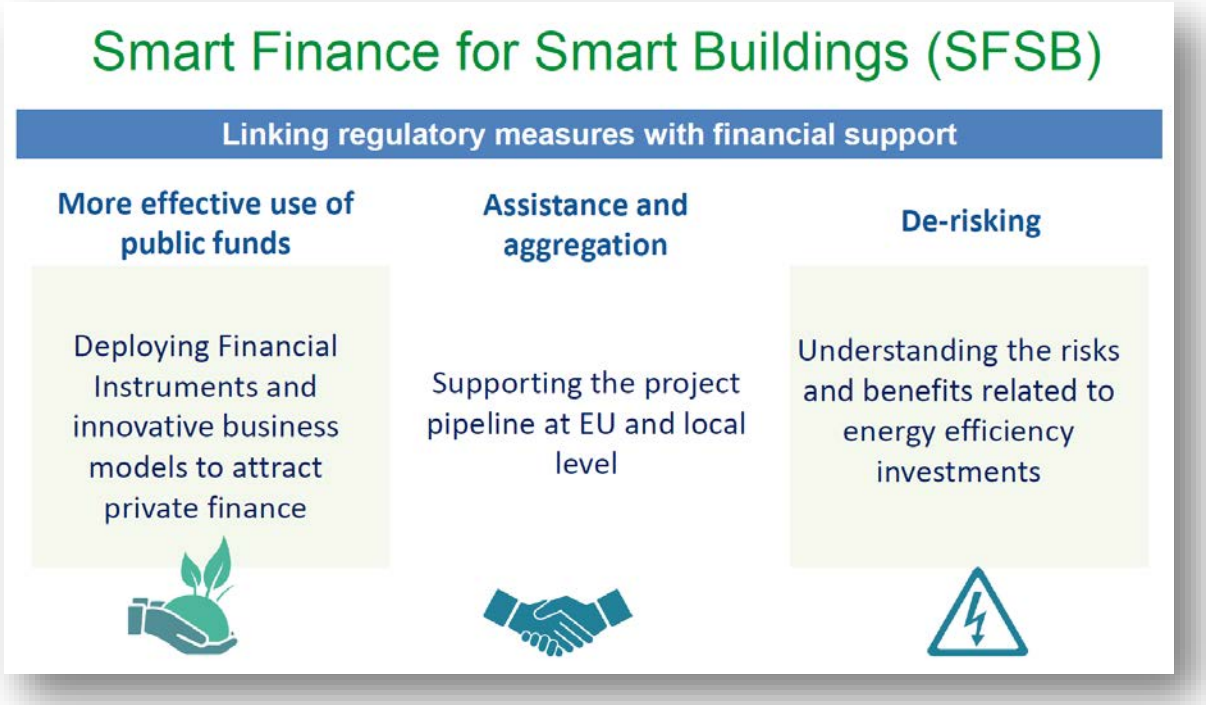
DIRECTIVE OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL

amending Directive 2010/31/EU on the energy performance of buildings

Key elements of the Commission proposal
Article 2a

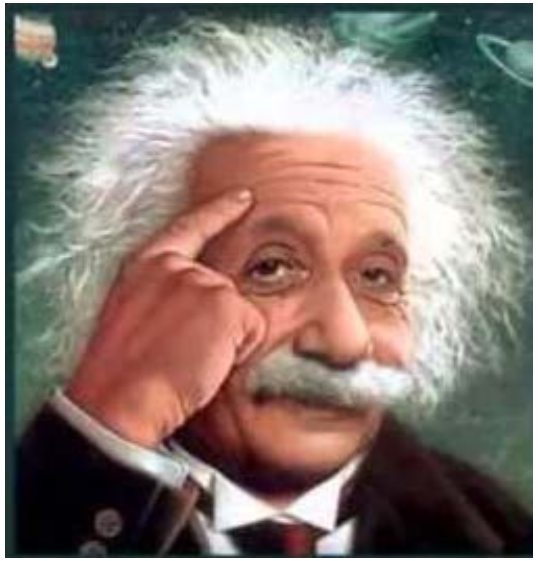
1. Long term building renovation strategies with a **vision of a decarbonised building stock by 2050**

→ Supported by an enabling framework for energy efficiency financing:
the **Smart Finance for Smart Buildings** approach to mobilisation of investment



Key elements of the Commission proposal
Article 8

2. The creation of a **smartness indicator** for buildings and support for the deployment of **electric vehicle recharging infrastructure** in EU buildings



Key elements of the Commission proposal Articles 14-15

3. Building Automation and Control Systems as an alternative to inspections of heating and air-conditioning systems

Key elements of the Commission proposal – Article 10

4. Strengthening the **link between financial measures and energy efficiency improvements** in the renovation of buildings

Key elements of the Commission proposal – Annex I

5. An energy performance calculation framework that
   - adequately account for the **positive role of renewable energy** in buildings and
   - allows for **transparent assessment** of national calculation methodologies.

From Commission proposal to new Directive…

COUNCIL:

- The Council reached a **General Approach** on 26 June 2017.

EUROPEAN PARLIAMENT:

- The **ENVI** (Environment, Public Health and Food Safety) Committee voted its **opinion** on 7 September
- The **ITRE** (Industry, Research and Energy) Committee will vote its report on 11/12 October 2017.

From Commission proposal to new Directive…

TRILOGUES

→Once both institutions have fixed their positions, trilogues can start.

→This should still be under the Estonian Presidency.

→ Trilogue?

- A **trialogue** or **formal trialogue meeting:** if Council does not agree to the amendments proposed by the European Parliament at the second reading.
  - Formal trialogue negotiations are carried out within the framework of a conciliation committee.
  - A trialogue is understood as an equally composite tripartite meeting between those involved in the legislative process of the EU institutions.
  - These bodies are the European Commission , the Council of the European Union and the European Parliament.
  - The European Commission takes on the mediating function.

Support measures…

http://www.buildup.eu/en/practices/publications/evaluation-iee-ii-support-buildings-0

IEE II Buildings Projects

Intelligent Energy Europe II

61 + 2 CA EPBD

No. of buildings projects 2007-2013

€72 million

Total funding to buildings projects

	2007	2008	2009	2010	2011	2012	2013
No. of Projects	7 + CA EPBD II	7	12	9 + CA EPBD III	8	7	11
Funding	€9.9m	€7.9m	€14.4m	€12.1m	€8.7m	€6.2m	€13m

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From Directive to national legislation

- EPB**D** = Energy Performance of Buildings **Directive**
  - →It requires **national transposition**

  - →EED: Energy Efficiency **Directive**
  - →RES: Renewable Energy Sources **Directive**

- CP**R** = Construction Product **Regulation**
  - → No national transposition

What is the EPBD Concerted Action?

- The Concerted Action EPBD (CA EPBD) addresses the Energy Performance of Buildings **Directive** (EPBD)
- It aims to contribute to the reduction of energy use in European buildings, through the exchange of knowledge and best practices in the field of energy efficiency and energy savings between all 28 EU Member States plus Norway
- **The CA EPBD is a joint initiative between the EU Member States and the European Commission**
  - It involves representatives of national ministries or their affiliated institutions who are in charge of preparing the technical, legal and administrative framework for the Energy Performance of Buildings Directive
- **The objective is to enhance the sharing of information and experiences** from national adoption and implementation of the EPBD

EPBD concerted Action?

- First EPBD concerted Action was launched in 2005
- The current CA EPBD IV runs from October 2015 to March 2018 and aims to transpose and implement the EPBD recast

Other Concerted Actions

CA-RES CONCERTED ACTION RENEWABLE ENERGY SOURCES DIRECTIVE

CONCERTED ACTION ENERGY EFFICIENCY DIRECTIVE

Deliverables of the EPBD Concerted Action?

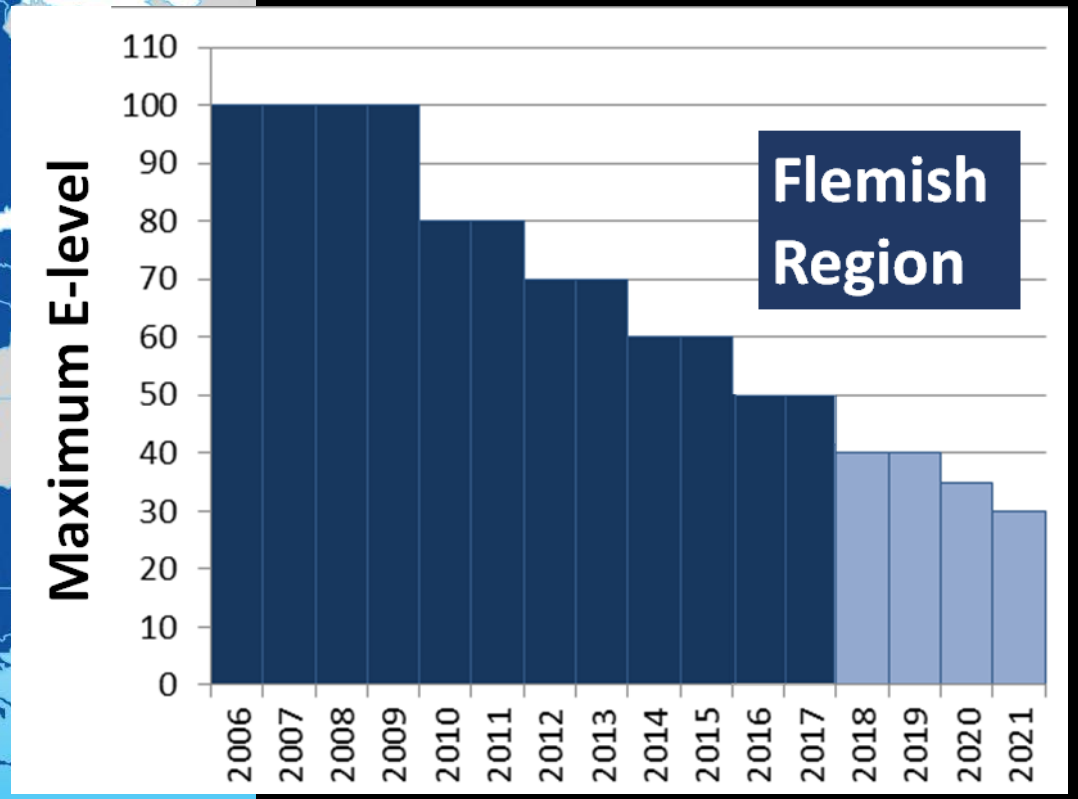
- Strong focus on “internal” deliverables:
  - Major activity: each 8…10 months 2 day plenary meetings with 3 parallel sessions

- External publishable deliverables, in particular:
  - Website www.epbd-ca.eu
  - National summary reports and core theme reports
  - Public events
  - …

EPBD List of Available Country Fact Sheets

- Austria
- Belgium Brussels
- Belgium Flanders
- Belgium Walloon
- Bulgaria
- Croatia
- Cyprus
- Czech Republic
- Denmark
- Estonia
- Finland
- France
- Germany
- Greece
- Hungary
- Ireland
- Italy
- Latvia
- Lithuania
- Luxembourg
- Malta
- Netherlands
- Norway
- Poland
- Portugal
- Romania
- Slovak Republic
- Slovenia
- Spain
- Sweden
- United Kingdom | England
- United Kingdom | Northern Ireland
- United Kingdom | Scotland
- United Kingdom | Wales

Co-funded by the Intelligent Energy Europe Programme of the European Union



2016

Implementing the Energy Performance of Buildings Directive (EPBD)

FEATURING COUNTRY REPORTS

www.epbd-ca.eu

CONCERTED ACTION
ENERGY PERFORMANCE
OF BUILDINGS

Co-funded by the Intelligent Energy Europe Programme of the European Union

Core Theme Reports 2015

- Certification
- Inspections
- Training
- Energy performance requirements using Cost-optimal levels
- Towards 2020 – Nearly Zero-Energy Buildings
- Compliance and Control
- Effectiveness of Support Initiatives

Compliance and Control

OVERVIEW AND OUTCOMES

AUGUST 2015

1. Introduction

The Energy Performance of Buildings Directive (EPBD) emphasises compliance and control as vital elements for its successful implementation. This report contains information, statistics, outcomes and conclusions from the dialogue on national approaches to compliance and control during the period 2011-2015.

The discussions within the Concerted Action EPBD (CA EPBD) focused mostly on compliance with the energy performance requirements and control of the Energy Performance Certificates (EPCs). As Member States (MSs) implemented the EPBD, experience of enforcing energy performance requirements and of EPC quality control has grown significantly, but it seems that there are still quite a few substantial challenges preventing the EPBD from being fully implemented and thus

This report attempts to obtain the relevant information from every MS in the EU. However, as this was not possible for every aspect, the total number of countries covered in some statistics may be less than twenty-eight (or twenty-nine including Norway).

2. Objectives

Directive 2010/31/EU introduced two new obligations for the MSs, in order to improve the quality and effectiveness of its implementation:

- MSs shall lay down the rules on penalties for infringement of the national provisions adopted pursuant to the Directive (Article 27).
- MSs shall implement an independent

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ce
(EPBD)
PORTS

www.epbd-ca.eu

European Commission

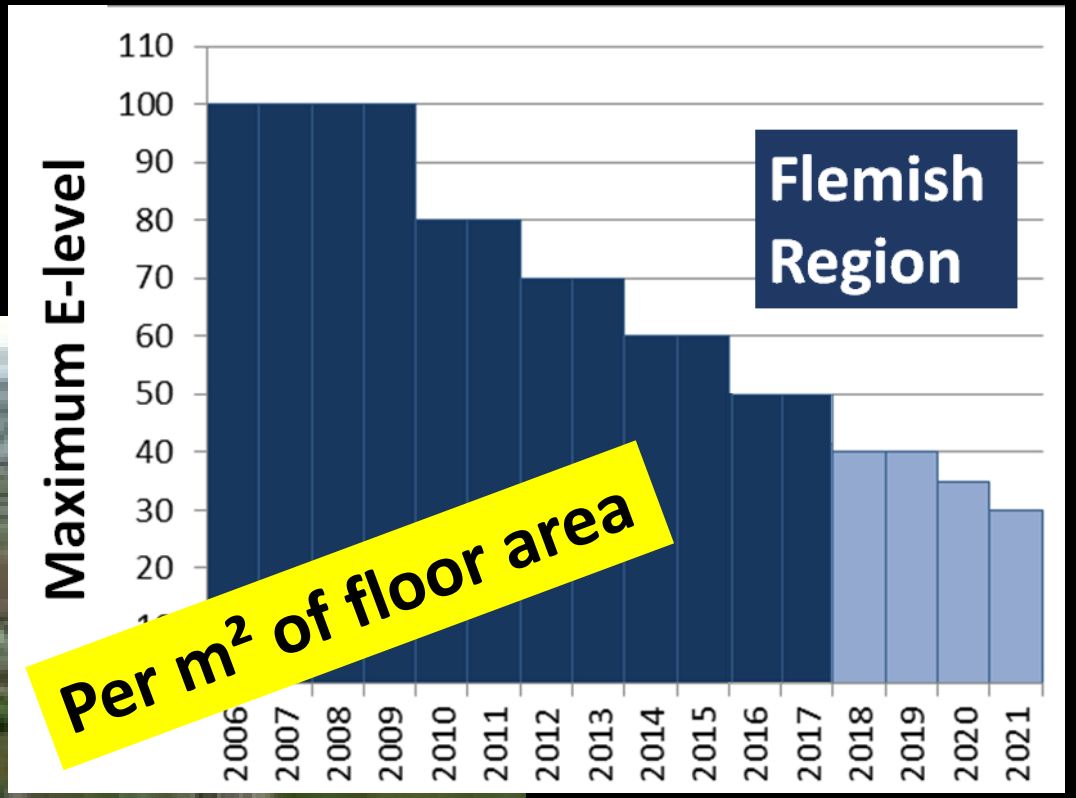
Smart Buildings for a greener Europe

Emerging Policy and Practice

14 February 2017, St. Julian's, Malta

CONCERTED ACTION
ENERGY PERFORMANCE OF BUILDINGS

Executive Agency for SMEs


Maximum E-level
110
100
90
80
70
60
50
40
30
20
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
Flemish Region
Per m² of floor area


METRO 2
METRO 2

Any idea about the most energy efficient train? (kWh/person.km)?

- M^2/person
- Thermal comfort
- Air quality
- Security
- …

Any idea about the most energy efficient train? (kWh/person.km)?

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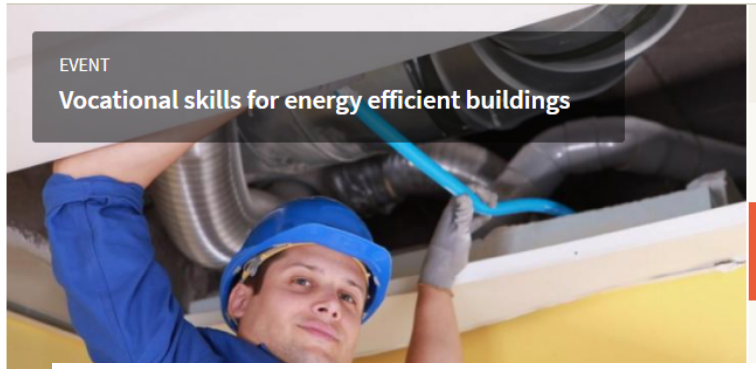
LOGIN SIGN UP PROPOSE CONTENT English

BUILD UP

The European Portal For Energy Efficiency In Buildings

Home News & Events Practices Learn Explore Topics Skills SEARCH



Evaluation of IEE II support for buildings

Horizon 2020 Energy Info Days 2017 – Registration now open!

Vocational skills for energy efficient buildings

Re-conceptualising shopping centres from consumerism to

Tweets by @EU_BUILDUP

BUILD UP Retweeted

Philippe Moseley @PhilippeMoseley
Webstream of #H2020 buildings #energyefficiency with @EU_EASME @EUScienceInnov webcast.ec.europa.eu/industrial-inn… #IndustryInnovDay #InvestEUresearch

Energy-efficient Buildings
Room: CCAB-1A and 1D

Welcome by the Chair and Co-Chair
- José Riesgo and Olga Rio, DG RTD

www.buildup.eu

BUILD UP
The European Portal For Energy Efficiency In Buildings
Home News & Events Practices Learn Explore Topics Skills

NE

Eu
nat

Energy performance contracts in the public sector offer a practical solution to make public buildings and other public infrastructures more energy efficient, as the initial investment can be covered by a private partner and repaid by guaranteed...

What is BUILD UP Skills?

3 Oct 2017

Why is BUILD UP so useful?

3 Oct 2017

★ Horizon 2020 Energy Info Days 2017

23 Oct 2017

HybridGEOTABS Symposium on Advanced Thermal Energy Solutions

4 Oct 2017

ABRACADABRA- International & Capacity Building Workshops

4 Oct 2017

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You expect a reliable label

… and you expect a good quality

You expect a reliable label

… **and you expect a good quality**

… **and you expect a good quality**

EPBD Article 27 - Penalties

- Member States shall lay down the rules on penalties applicable to infringements of the national provisions adopted pursuant to this Directive and shall take all measures necessary to ensure that they are implemented.
- **The penalties provided for must be effective, proportionate and dissuasive.**

Energy certificates with respect to ventilation …

EPC calculation

- Efficiency of heat exchanger
- Fan characteristics
- Ductwork airtightness
- Demand controlled ventilation
- …
- …

Observation:

In many countries no or nearly no control regarding compliance of EPC

Execution of the works

- Air flow rates
- Acoustics
- …
- …

Observation:

In many countries no or nearly no control regarding real performances

QUALICHeCK project had 2 objectives…

- *To set up a series of actions which should result in more attention and practical initiatives for **actual compliance with the claimed energy performance for new and renovated buildings***

  i.e. 'Boundary conditions which force people to do what they declare';

- *To set up a series of actions, which should result in more attention and practical initiatives for **achieving a better quality of the works**,*

  i.e. 'Boundary conditions which stimulate and allow the building sector to deliver good quality of the works'.

QUALICHeCK
Towards better quality and compliance

4 focus areas in QUALICHeCK

- Transmission characteristics
- Ventilation and airtightness
- Sustainable summer comfort techniques
- Renewables in multi-energy systems

QUALICHeCK
Towards better quality and compliance


= National consortium
Reykjavik
ÍSLAND
SVERIGE
SUOMI
FINLAND
NORGE
Oslo
Stockholm
Helsinki
Helsingfors
Tallinn
EESTI
Riga
LATVIJA
LIETUVA
Vilnius
Moskva
RUSSIJA
Minsk
BELARUS
UNITED
KINGDOM
IRELAND
ÉIRE
Dublin
Baile Átha Cliath
DANMARK
København
NEDERLAND
Amsterdam
London
Berlin
DEUTSCHLAND
BELGIE
BELGIQUE
LUXEMBOURG
Luxembourg
Bruxelles
Brussel
Warszawa
POLSKA
Praha
ČESKÁ
REPUBLIKA
SLOVENSKO
Bratislava
Wien
Kyiv
UKRAÏNA
Paris
FRANCE
SCHWEIZ
SUISSE
SVIZZERA
Bern
ÖSTERREICH
MAGYARORSZÁG
Budapest
MOLDOVA
Chişinău
SLOVENIJA
Ljubljana
Zagreb
HRVATSKA
ROMÂNIA
București
BOSNA I
HERCEGOVINA
Sarajevo
Beograd
SRBIJA I
CRNA GORA
BĂLGARIJA
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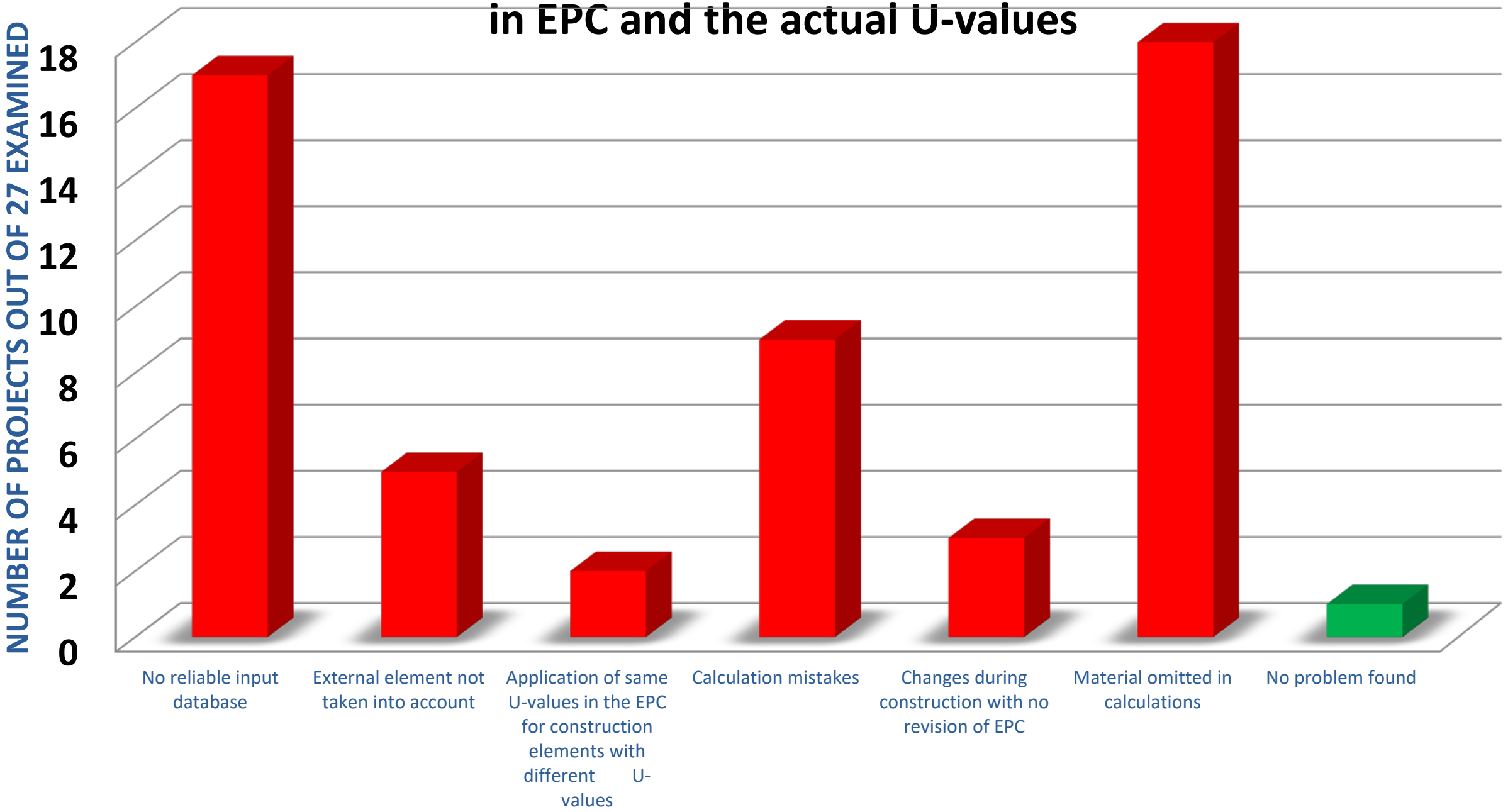
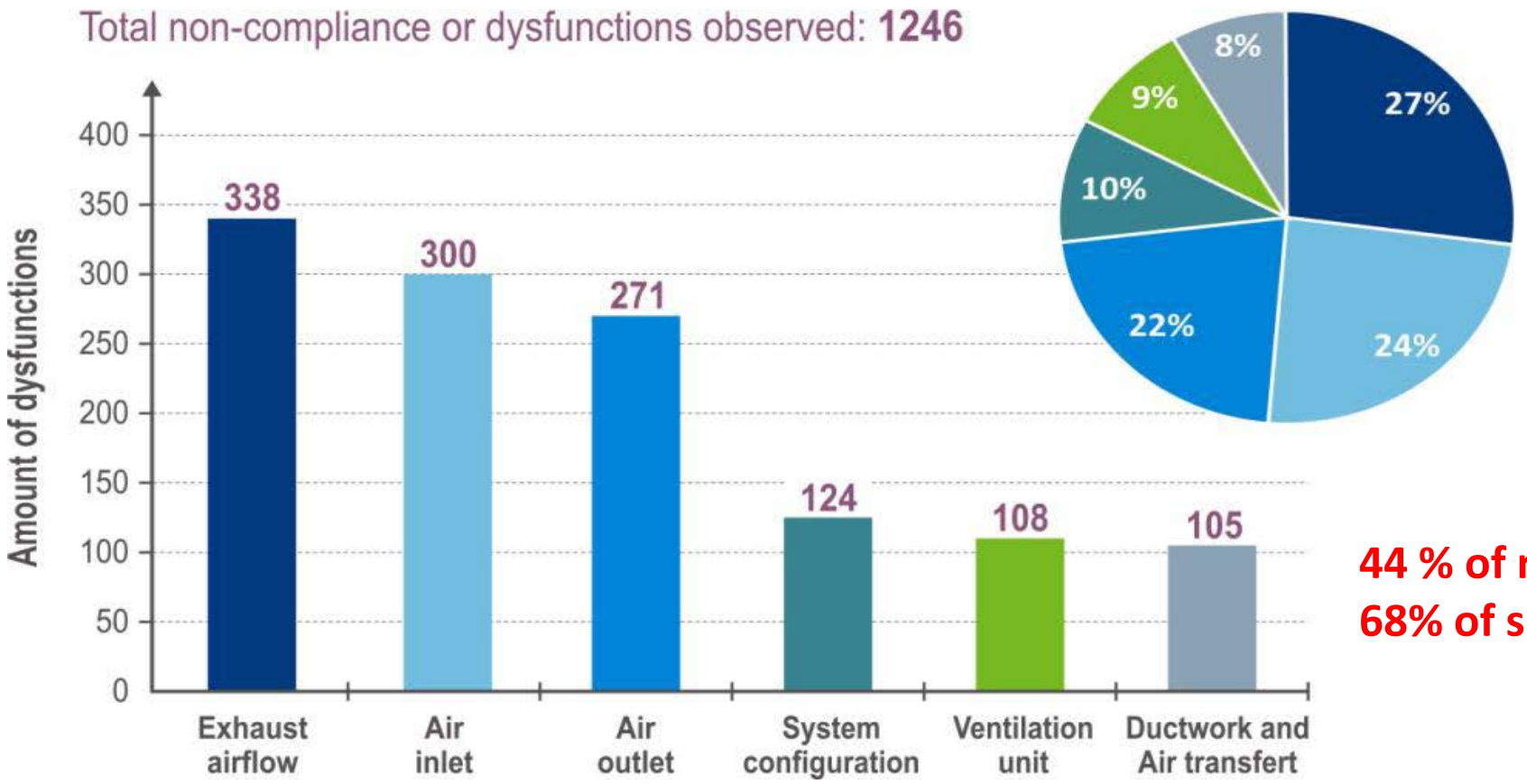
ΕΛΛΑΔΑ-ELLADA
Athinai
Rabat
Alger
Tunis
EL MAGHREB
EL DJAZAÏR
TOUNIS
Valletta
MALTA
ΚΥΠΡΟΣ
Lefkosia
Lefkoşa
LIBNAN
Beyrouth
Paramaribo
SURINAME
MADEIRA (P)

Example from CYPRUS: Deviations between U-values in EPC and the actual U-values



Example from FRANCE:
Quality of ventilation systems in 1.287 new dwellings



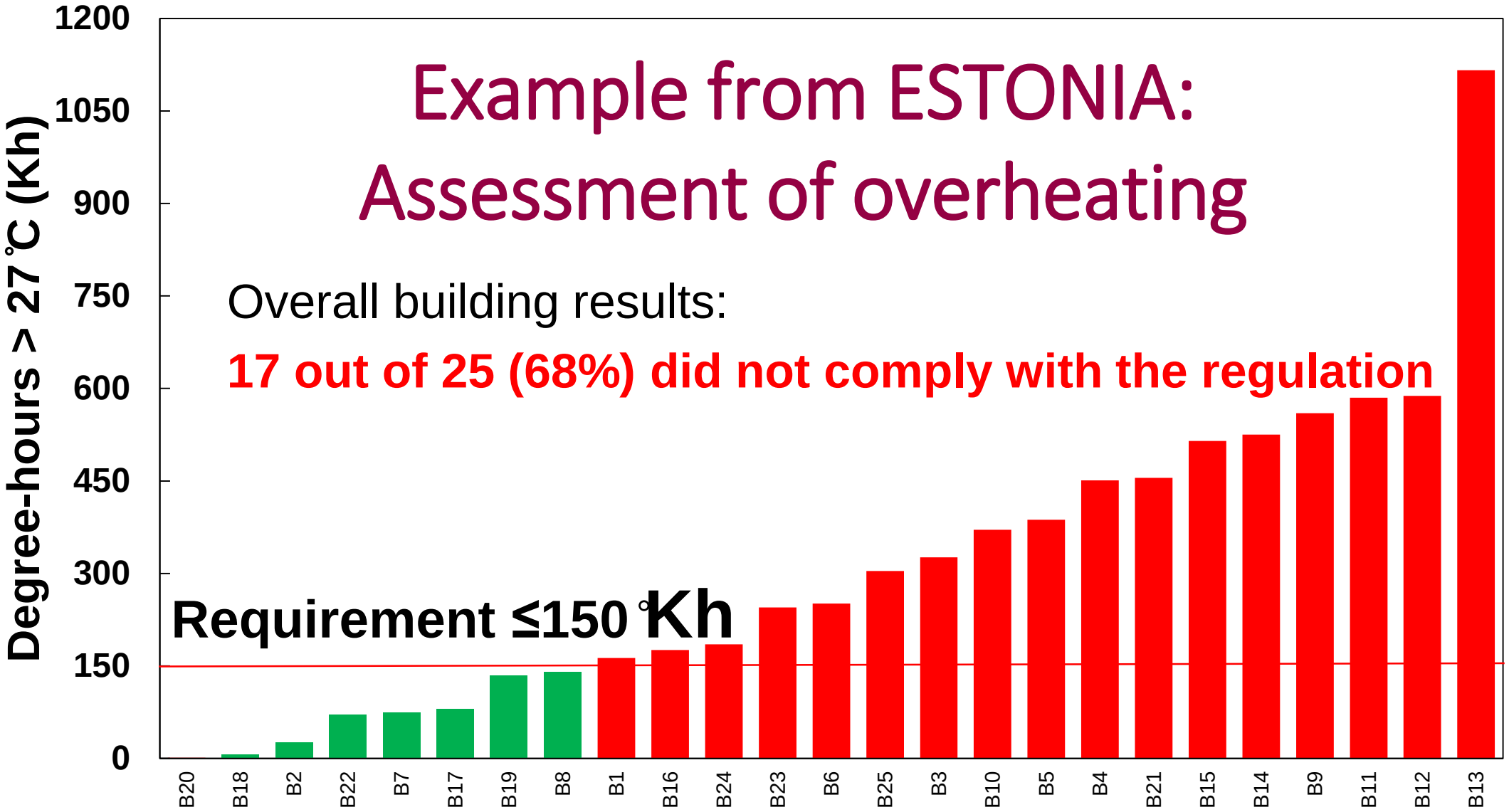
44 % of multi-family dwellings don't comply
68% of single-family dwellings don't comply

QUALICHeCK
Towards better quality and compliance

Example from ESTONIA: Assessment of overheating

Overall building results:

17 out of 25 (68%) did not comply with the regulation

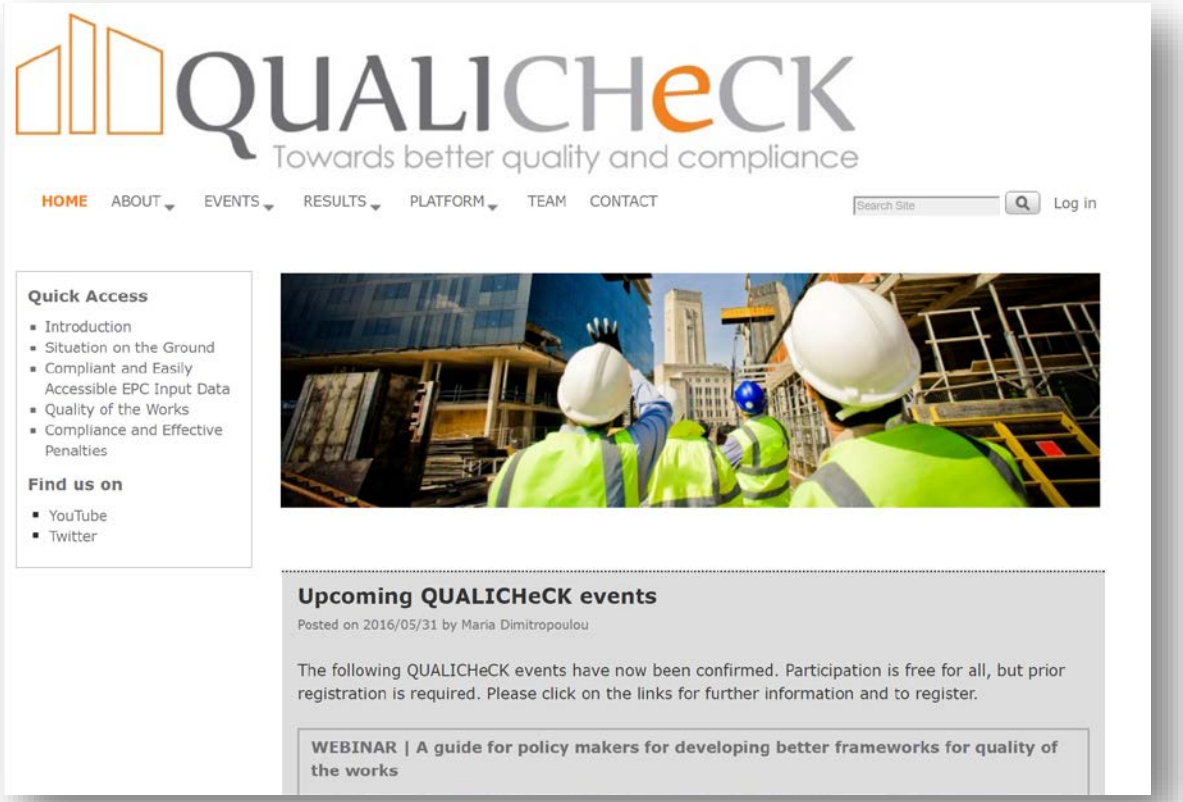


QUALICHeCK
Towards better quality and compliance

Example from SWEDEN:
Airtightness of air distribution systems

QUALICHeCK products and outcomes

- 2 booklets
- 3 global reports
- 2 source books
- 9 country reports
- 54 fact sheets
- 6 newsletters
- 16 webinars
- 4 conferences
- 4 focused technology workshops
- 9 national roadshows
- 3 special issues of REHVA Journal
- …



www.qualicheck-platform.eu

QUALICHeCK
Towards better quality and compliance

Fact Sheets by topic

TECHNOLOGIES / ASPECTS	Transmission Characteristics	Ventilation and Airtightness	Sustainable Summer Comfort Technologies	Renewables in Multi-Energy Systems
Status on the Ground	x	x	x	x
Compliant and Easily Accessible EPC Input Data	x	x	x	x
Quality of the Works	x	x	x	x
Compliance Frameworks	x	x	x	x

QUALICHeCK
Towards better quality and compliance


QUALICHeCK
Improving the compliance of Energ
Certificates and the quality of build
www.qualicheck-platform.eu
Documented examples
regarding quality of wor
Heike Erhorn-Kluttig, Hans Erhorn,
(Fraunhofer Institute for Building P
www.qualicheck-platform.eu
"Towards compliant and easily acces
How to get compliant and access
for the energy rating calculation
www.qualicheck-platform.eu
QUALICHeCK
Towards better quality and compliance
"Status on the Ground"
Overview of existing surveys on energy performance related quality and compliance
Mikk Maivel, Kalle Kuusk, Raimo Simson, Jarek Kurnitski, Targo Kalamees (Tallinn University of Technology, Estonia)
www.qualicheck-platform.eu

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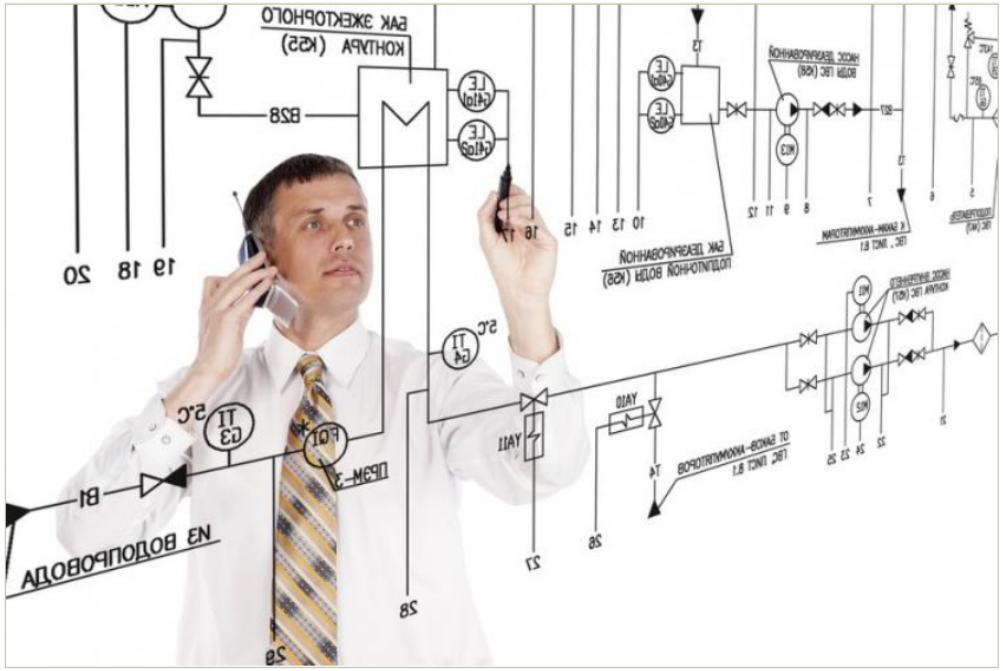
What can be said about a smartness indicator?

01 March 2017



Shutterstock / Moon Light PhotoStudio

As part of the proposals released by the European Commission on November 30 2016, the introduction of a 'smartness indicator' is foreseen.

Information about this post

Country Pan European

Themes Energy policies, Legislation, regulations, standards, Energy performance certification, Energy efficiency technologies and materials, Building operation, monitoring, energy management

Submitted by Maria Kapsalaki (INIVE EEIG)

Answered by: Peter Wouters (INIVE eeig)

Answered on Wednesday, 1 March, 2017

Tag Cloud

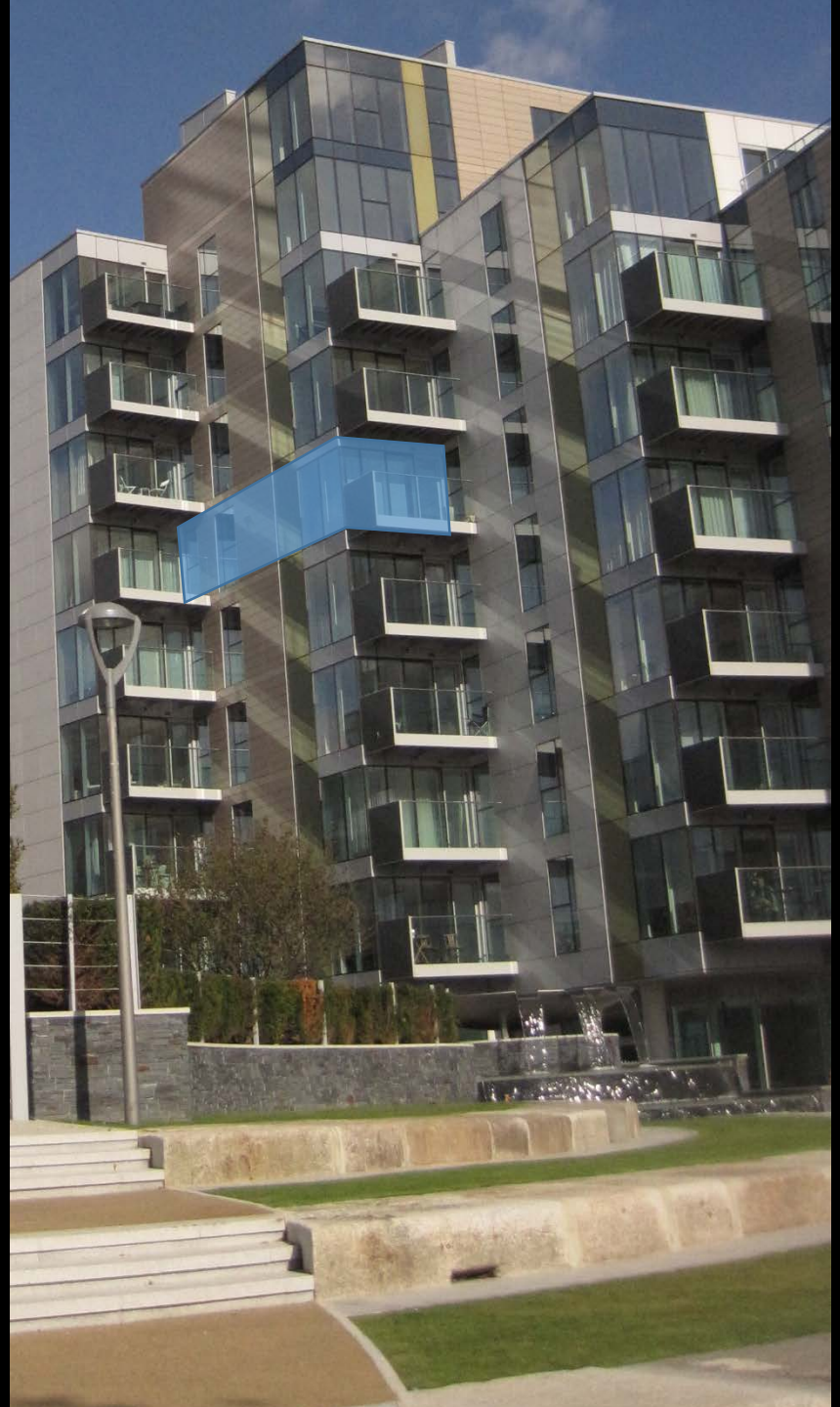
smart buildings
EPBD - Energy Performance of Buildings Directive (2010/31/EU)
EC - European Commission
EPC - Energy Performance Certificate
Clean Energy for All Europeans

What to do if no wind?
What to do if no sun?

Storage is (still) very expensive

‘Flexible/smart’ buildings!

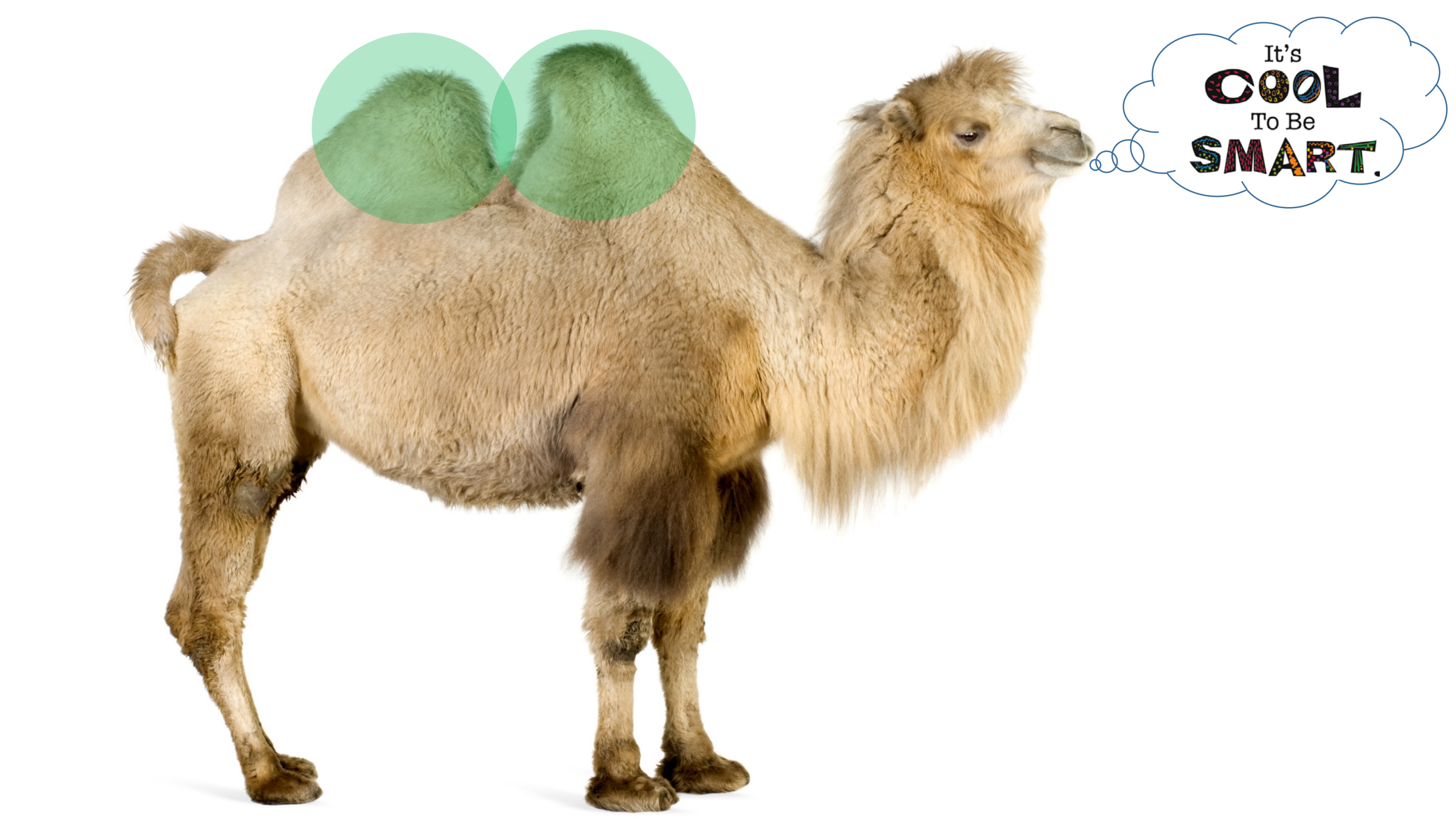
Smartness indicator:
At dwelling level…



Smartness indicator:
At building level…

Smartness indicator:
At city level…

Important to stimulate further developments and avoid to become a barrier for innovation


It's
COOL
To Be
SMART.

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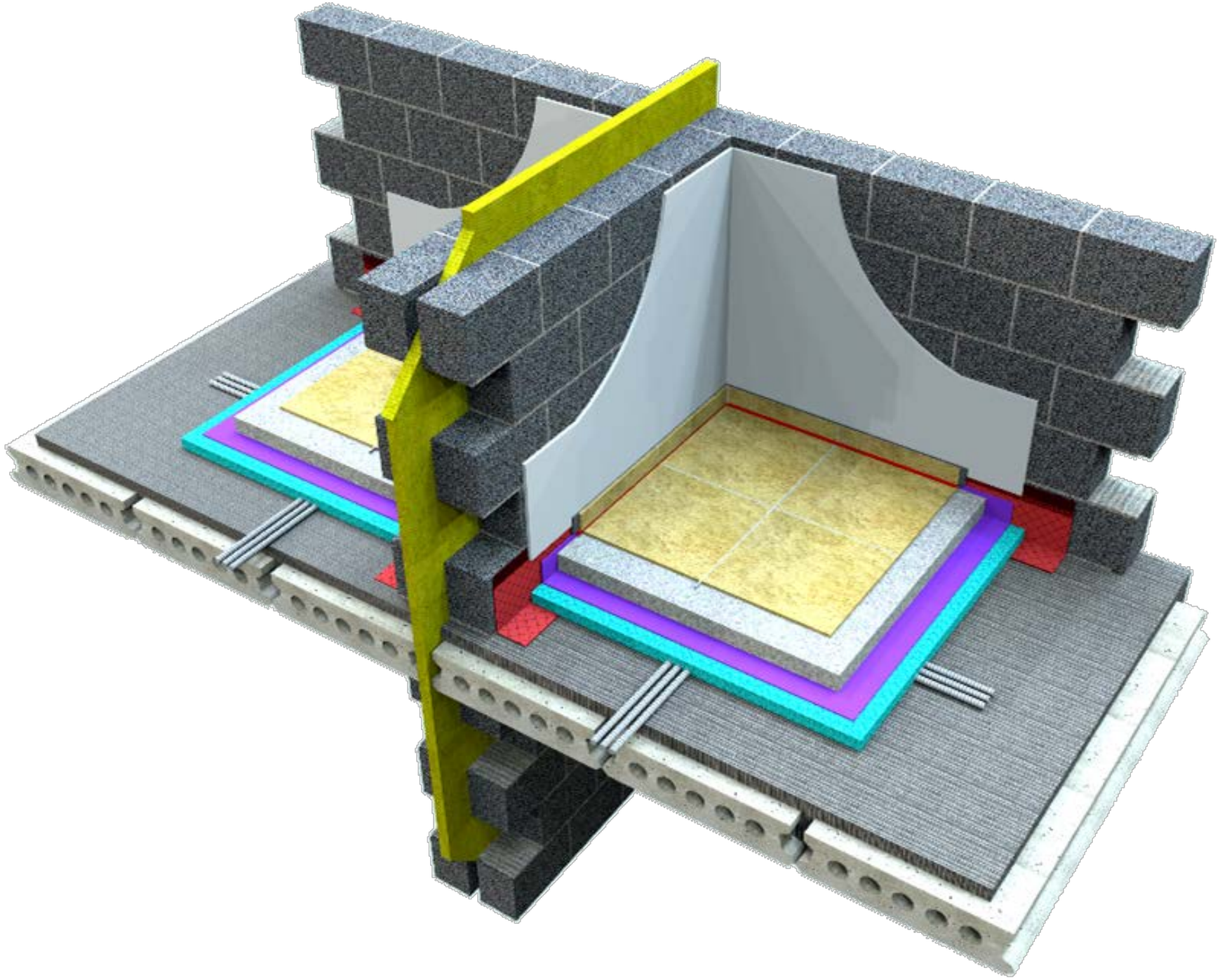
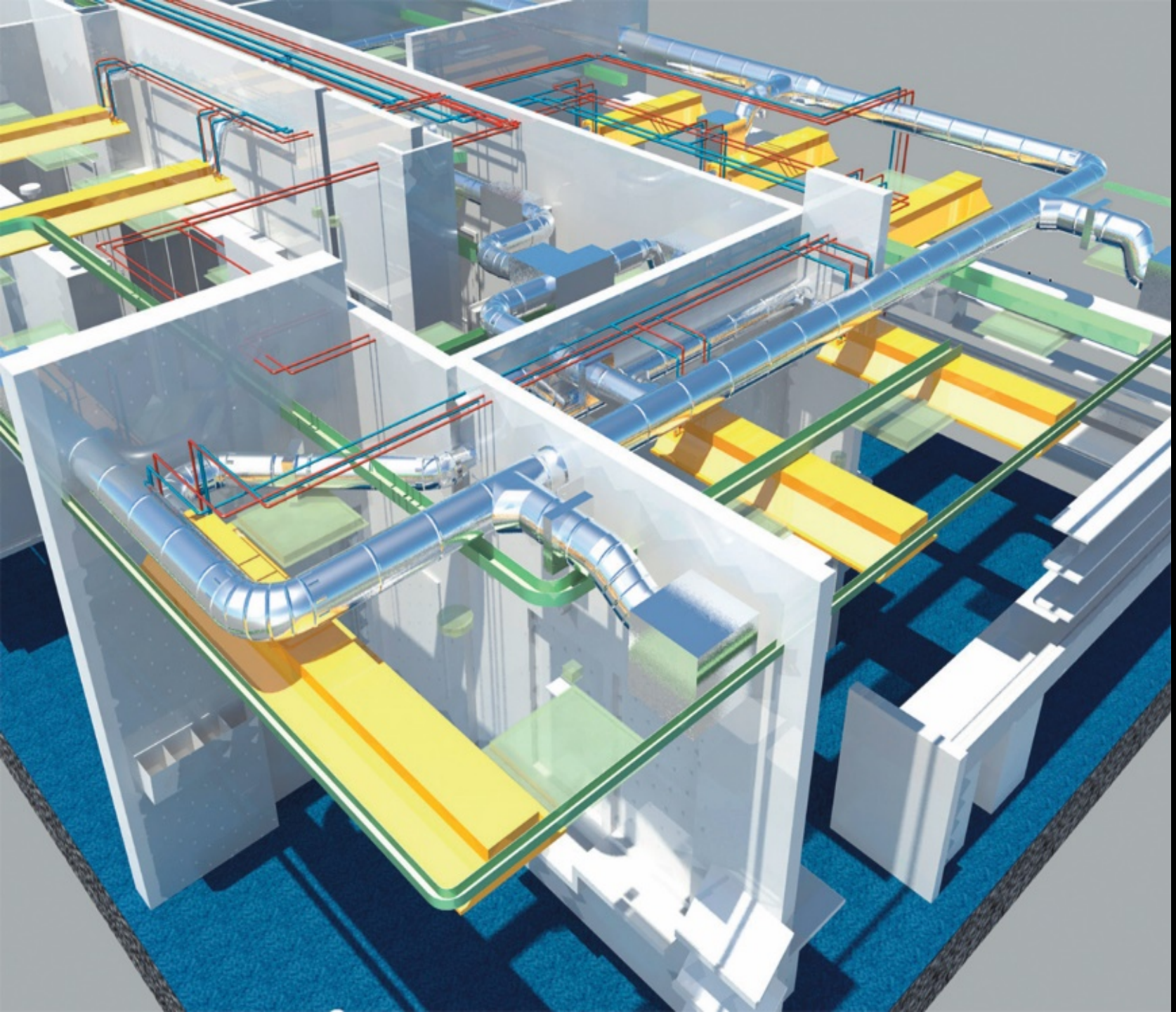


3D building nodes

Acoustics
Fire protection
…



What if BIM becomes widely used?

- All building elements have **associated performances**
  - E.g. fan, concrete, lighting luminaire, ductwork, …
- It will be possible to have **complex calculations with limited efforts**
  - E.g. thermal bridge calculations → whole building is a 3-dimensional object
- It will be possible to **optimise the dimensioning of a system**
  - E.g. heat pump, solar collector, floor heating, ventilation
- It will be possible to assess the **correctness of building details**
  - Not only in energy terms, also acoustics, stability, fire, …

EPC Compliance and enforcement:
BIM creates a new context…

- If BIM covers all kind of aspects, there probably will be a large pressure from various partners in the project to have a dossier as built

- In such context, there is a much smaller need for a specific pressure for checks on compliant energy performance input data

- New challenges/opportunities for (CEN-ISO) standards

Quality of the works:

BIM creates for many areas a new context…

- Correct dimensioning of installations: more or less automatic check possible and even optimised dimensioning
  - Poor quality of the works is often linked to poor specifications/dimensioning
    - E.g. ventilation, solar collectors, heat pumps, PV installations, …

- Of course not possible to check the quality of execution by the workers, but if the specifications are very clear, less probability of poor execution

BIMPLEMENT

RÉSUMÉ

NZEB construction needs an enhanced systematic approach for the quality control of the entire process to reduce the gap between designed and actual performances of buildings. This requires a fully qualified and equipped workforce, capable to implement, execute and perform all the necessary labor actions with understanding of the responsibility of their own profession and actions, as well as the relation with the other involved professions and actions.

BIMplement offers the trainers and the learners a range of tools that fit the objective of developing a fully qualified and equipped workforce, capable to implement, execute and perform all the necessary labour actions. Main aim is to achieve an improved quality for NZEB construction and renovation by setting up a large scale, training, CPD and qualification schemes, addressing the entire process phases in a cross-crafts and cross level multidisciplinary approach, strengthened with hands-on and BIM-enhanced workplace learning tools by following

OBJECTIFS

1. To improve the overall quality of renovations and new constructions, based on a BIM-enabled workplace learning, addressing the entire process phases in a cross-crafts multidisciplinary approach
2. To create a new generation of professionals and craftsmen, equipped and enabled by BIM skills, to enhance the overall quality of construction and renovation across the entire process
3. To foster interactions between different trades and professions enabled by a flexible qualification, certification and accreditation methodology for implementing BIM as a workplace learning environment
4. To sustain the qualification and training schemes a replication and exploitation strategy will be developed and validated

At the end of the 2 years project BIMplement has developed a transferable method based on the experience of previous BUS and H2020 Construction Skills projects and on experimentations in territories with craftsmen and small enterprises.

PARTICIPANTS

Pilote : Alliance Villes Emploi (FR)

Partenaires :

- ASTUS Construction (FR)
- STICHTING INSTITUUT VOOR STUDIE ENSTIMULERING VAN ONDERZOEK OP HETGEBIED VAN GEBOUWINSTALLATIES (NL)
- STICHTING OPLEIDINGS- EN ONTWIKKELINGSFONDS VOOR HET TECHNISCH INSTALLATIEBEDRIJF*ST.POL. EN ONTWIKK.FONDS TECH INSTALL.BEDR OTIB (NL)
- Huygen Installatie Adviseurs (NL)
- REGIONINIS INOVACIJU VADYBOS CENTRAS (LT)
- LIETUVOS STATYBININKU ASOCIACIJA (LT)
- INSTITUTO VALENCIANO DE LA EDIFICACION (ES)
- SERVICIO VALENCIANO DE EMPLEO Y FORMACION (ES)
- MOSTOSTAL WARSZAWA SA (PL)
- CONSEIL DES ARCHITECTES D'EUROPE (BE)

BIMEET

Project: BIM-based EU -wide Standardized Qualification Framework for achieving Energy Efficiency Training

The European Construction sector is facing unprecedented challenges to achieve ambitious energy efficiency objectives (with the aim to generalize Near-Zero Energy Buildings), in an economic crisis context dominated by reduced investments, search for cost effectiveness and high productivity. Moreover the industry is experiencing its digital revolution, with Building Information Modeling (BIM) approach gaining significant interest across Europe. Member states implement very different approaches through regulations and maturity targets, which always face the traditional low-tech and informal practices of construction businesses (a fragmented sector, dominated by SMEs). BIMEET project aims to leverage the take-up of ICT and BIM through a significant upgrade of the skills and capacities of the EU construction workforce. This Coordination and Support Action project is built around a strong consortium relying on educational and research expertise, robust experience of accrediting bodies, training supply chain and a wide engagement of industry led best practice (already committed in an EU-wide expert panel). Through its actions the project will (a) pave the way to a fundamental step change in delivering systematic, measurable and effective energy efficient buildings through BIM training with a view to effectively address European energy and carbon reduction targets; (b) promote a well-trained world leading generation of decision makers, practitioners, and blue collars in BIM for energy efficiency; (c) establish a world-leading platform for BIM for energy efficiency training nurtured by an established community of interest. Its principal outputs are 1) a skills matrix related to BIM and energy efficiency, harmonized thanks to EQF standard, and 2) a training platform contributing to widely disseminate the BIMEET EQF. These results associated with an accreditation scheme will guarantee the sustainability of the project results after its lifetime.

Net-UBIEP

Project: Network for Using BIM to Increase the Energy Performance

The building sector is the largest consumer of energy in Europe, accounting for nearly 40% of the total consumption (EPBD 2010/31/EU). Furthermore the 2030 European Energy [COM(2014)16Final] and Energy Roadmap 2050 [COM(2011) 885 final], strongly requires more focus on the energy efficiency on housing sector. Finally, the Directive 2014/24/EU of the European Parliament and of the Council on public procurement, requires that all member states introduce electronic means to exchange information and communication in procurement procedures. For these reasons we believe that the integrated approach of the Net-UBIEP project, based on Building information Modelling, integrated with energy performance requirements, will be key to solve all the problems in a more effective and efficient manner. The project proposes BIM Qualification Models integrated with energy competences, to widespread a better comprehension of energy issues along all the value chain of building industry so that both existing and new building will have better energy performances. Public Administrations, Professionals (Engineers / Architects), Technicians (Installers / Maintainers) and Tenants will be therefore involved in the Net-UBIEP activities. The definition of the BIM Qualification Models will pass through the identification of specific energy BIM competences for each of the above target needed to implement BIM models during the whole building life cycle. During the project the “integrated” BIM Qualification Models will be validated by stakeholders thanks to the delivering of different training activities (Seminars / Classrooms Courses / E-Learning Courses) addressed to at least six BIM Professional Profiles: BIM Manager, BIM Evaluator, BIM Coordinator, BIM Expert, BIM facility manager, BIM user. Once the schemes will be validated, they will be proposed for standardization to find a broader acceptance at European and international level through regulatory organizations (CEN / ISO).

Implementation of EPBD in the Member States

- EPBD at European level
- EPBD in the countries: EPBD Concerted Action
- BUILD UP – THE European portal on Energy Efficiency
- QUALICHeCK - EPC compliance & Quality of the works
- Smartness indicator
- Can BIM be a disruptive technology for EPBD implementation?
- **Conclusions**

Conclusions

- Overall, the EPBD has been a major driver for increased attention on energy efficiency
- There is a rather wide variation in national transposition but often (very) substantial improvements in performances of new buildings.
- The existing building stock is the major challenge
- A more effective compliance framework is needed in many countries
- The revision process of the EPBD is ongoing with possible new points of attention


THANK
YOU!