Foreword
At the closure of 2016, the European Commission presented a comprehensive package of legislative measures defining the energy future of Europe. Soon after this, heavy winter conditions (extreme low temperatures, heavy snowfalls, floods) have challenged many European Countries, highlighting issues such as energy peak conditions, energy poverty and suitability of building works.

Several of the problems and opportunities in relation to energy efficiency in the building sector are identified, discussed and quantified in the various QUALICHeCK events (workshops, webinars) and studies. The implications of the European Commission’s “Clean Energy for All Europeans’ package announcements which are relevant to QUALICHeCK will be discussed at the next QUALICHeCK Platform meeting and Conference. Stay with us through the last months of QUALICHeCK for useful insights and networking opportunities.

The QUALICHeCK Team and myself wish you all a peaceful, merry and temperate 2017!

Peter Wouters
QUALICHeCK Coordinator

3rd QUALICHeCK International Workshop, 15.12.2016, Brussels
Performance of thermal insulation in low energy buildings and advanced building renovation projects

Participants from all over Europe exchanged their experience and views on ways to improve the quality of installed insulation systems as well as to secure the compliance of insulation product and system data during the 3rd International QUALICHeCK workshop held in Brussels on 15 December 2016.

First, the Belgian approach implemented to reduce heat losses as a result of the gap between the actual and theoretical performance of systems was presented, as were the quality frameworks for existing cavity walls and internal insulation to ensure that the products would be installed according to specifications. The issue of thermal bridges was specifically addressed because their influence is magnified in (nearly) zero-energy buildings. Several examples from Europe, the USA, China, and Japan on super insulating materials (e.g. vacuum insulation panels (VIP) or aerogels) were showcased to have great potential for the renovation market. During a round table discussion, panel members shared their thoughts about an increasing need for technical approval frameworks meant to assess risks, to check the fitness for purpose, and to document specifications for workmanship for a given product or system.

Further interesting initiatives to guide the market in achieving high performance insulation were discussed. Finally, the workshop was the occasion to look at the perspectives given by information technology to ease the documentation and checks in building construction.

The workshop was organised by INIVE EEIG on behalf of the QUALICHeCK consortium in cooperation with EURIMA, EAE, VIPA, UEATC and EOTA, and with the support of the Flemish Energy Agency (VEA) and the Walloon Region. The presentations of the workshop are available at www.qualicheck-platform.eu

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Co-funded by the Intelligent Energy Programme of the European Union
REPORT | Overview of status on the ground

In this report, QUALiCheCK gives an overview of the building energy performance related quality and compliance situation in 9 focus countries: Austria, Belgium, Cyprus, Estonia, France, Greece, Romania, Spain and Sweden.

A review of 31 existing studies dealing with measured performance, reliability of input data, quality of the works and compliance frameworks shows in many areas problematic situations.

The 10 field studies conducted in the framework of QUALiCheCK, additionally show important issues in meeting the regulatory requirements. For example:

- In Austria, 20% of the EPC input data had not been updated between design and completion, resulting in errors in Space Heating Demand assessments in the range of 5-28%.

- In Estonia, 68% of the buildings investigated did not comply with the regulatory summer comfort requirement.

- In Greece, the percentages of non-compliance based on building design documentation for the U-values of external insulation and for the solar collector’s area are 56% and 73% respectively.

- In Romania, recalculation of the EPCs lead to a change in energy class in almost 40% of the sample for the total energy use.

- In Sweden, the non-compliance rate based on the availability of the EPC alone was found to be 56% on a sample of 100 new houses.

Generally, the data collected and analysed in the framework of QUALiCheCK confirms and quantifies problems with the quality of EPC input data, the quality of building works, as well as with compliance frameworks. However, despite these non-compliance issues, QUALiCheCK also reveals positive ongoing developments in many Member States. Ambitious and sophisticated systems are available in certain Member States (e.g. Austria, Estonia, Sweden), and though they have longer learning curves and are more difficult to implement in practice, they seem capable to lead substantial performance improvements.

REHVA journal

Issue 4 of the 2016 REHVA Journal (August 2016) features, among major other highlights, a special +20 page contribution from QUALiCheCK on “Non-compliant EPCs and building works should not jeopardise EPBD goals”. The QUALiCheCK contribution includes articles on “Maximizing building energy efficiency: Ensuring quality of works”, “Improving compliance of building energy performance certificates”, the “ES-SDA: validated shading data for new build and renovation”, “Cool Roofs in the European context”, “QUALiCheCK Overview of EPC compliance and quality issues on the ground” and a summary of the “QUALiCheCK International Workshop on summer comfort technologies in buildings: content and major outcomes”. The journal is available at www.rehva.eu/publications-and-resources/rehva-journal/2016/052016/042016.html

Best paper award!

We are proud to announce that QUALiCheCK partner Arnold Janssens from the University of Ghent won a best paper award from CESBP “Bauphysik” and Ernst & Sohn, for his work and presentation on the results of the QUALiCheCK data collection activity “Results of Belgian quality control framework for cavity wall insulation” at the Central European Symposium of Building Physics 2016 (BaüSIM 2016) in Dresden in September 2016. As a result, the paper was also published in the Bauphysik journal December issue 2016. The paper can be accessed at http://onlinelibrary.wiley.com/doi/10.1002/bapi.201610035/full

JRC study

On behalf of the European Commission, the Joint Research Centre (JRC in Seville) is operating a study about environmental performance indicators for residential and office buildings.

The objective is to go towards a common European approach to assess the environmental performance of buildings throughout their lifecycle, taking into account the use of resources such as energy, materials and water. This study will be finished in June 2017.

QUALiCheCK was asked by the JRC to be part of an expert sub-group on such environmental indicators. This allowed QUALiCheCK to contribute to discussions about the definition of an indicator for the energy performance and the greenhouse gas emission of buildings.

For information on the JRC study see: http://susproc.jrc.ec.europa.eu/efficientBuildings/index.html
Roadshows
As part of stimulating national discussions regarding compliance and enforcement of EPC and quality of the works, QUALICheck roadshow events are being organised in the 9 QUALICheck focus countries. The most recent Roadshows took place in Sweden and Romania and are summarised below. Two more are expected soon in France and Spain.

Sweden
The roadshow in Sweden on 29 November attracted almost 60 persons from Chalmers, research institutes, and industry. The full day seminar was organized in Gothenburg in collaboration with Chalmers and IVL. The theme of the event was “Towards nearly zero-energy buildings”. There were invited presentations on various topics such as how energy performance certificates (EPC) can be used to further support energy efficient buildings, results from the Qualicheck project, indoor environmental quality, thermal bridges, daylight, energy use and energy savings. The new Swedish building regulations on energy efficiency and harmonization of normal use in energy performance certificates based on operational energy in force from 15 December were also presented by Boverket. The main conclusion from the day is that a lot of work and progress has been made in research and legislation on energy efficient buildings. However, there is a need for knowledge transfer and increased awareness in the industry. For instance thermal bridges calculations differ depending on who performs the calculation. Some engineers use detailed models and other a general percentage value added on the U-value. Parts of the industry lack awareness and knowledge on how to follow up on the energy use. The day was concluded by a panel discussion where the participants discussed what the largest obstacles to achieve energy targets were, and what should be prioritized. There was an agreement that the attention now needs to be shifted from new buildings to the already existing building stock, also to taking into consideration the energy use during the whole life span of the building. Presentations (most in Swedish) are available online www.chalmers.se/sv/styrkeomraden/energi/evenemang/Sidor/Energi-i-den-urbana-utvecklingen_Mot-nic3%ae4ra-nollenergibyggnader.aspx

Romania
A National Conference on “Quality of Construction Works and Buildings Energy Performance Certification. Compliance and Responsibility for the Implementation of nZEB Concept in Romania” was organized on 11 November in Romania Bucharest by the National Institute for Research and Development in Construction, Urban Planning and Sustainable Spatial Development “URBAN-INCERC” (www.incd.ro) together with the Association “Cluster for Promoting Nearly Zero Energy Buildings” - Pro-nZEB (www.pro-nzеб.ro). The conference aimed to present the outcomes of QUALICheck and other relevant initiatives to key stakeholders in order to support national awareness raising, as well as to perform active consultation on the quality of construction works focusing on building energy performance certification, implementation of NZEB in Romania, relevant training programs and opportunities for collaboration among relevant actors to implement the NZEB concept in practice. The event included an exhibition of innovative technologies and solutions for the implementation of NZEB. The event was attended by 67 people including representatives of authorities, construction companies, industry, architects, designers, engineers, energy auditors, research institutes and other relevant organisations.

There are many factors that determine poor quality of construction works in Romania but all the problems and proposed solutions must be prioritized. Developing a smart information and communication campaigns to promote awareness of risks by bad examples and benefits by examples of good practice in the market impact might be a solution.

The human factor and key competences/skills have proved to be essential for the quality of construction works, while initiatives such as Train-to-NZEB are dealing with these issues. The Building Knowledge Hub (BKH), to be developed in Romania under Train-to-nZEB, will promote the best technology for nZEB existing market and will provide dedicated spaces for practice and demonstrations to support competence development of all actors involved in the conception, design, realization and operation of buildings, and decision makers involved in ensuring quality in construction and energy efficiency in buildings.

Construction companies must understand the importance of their own personnel skills and competences, becoming aware that without qualified personnel there is a risk (increasingly larger) to no longer remain on the market.
QUALICHeCK at the BUILD UP Skills 9th EU exchange meeting

QUALICHeCK, represented by two staff members of Sympraxis Team, joined upon invitation the 9th EU BUILD UP Skills exchange meeting in Athens on 6 & 7 December to learn from the BUILD UP Skills training initiatives and to highlight the need and ways for achieving broader integrated frameworks which ensure the application of the acquired training skills in practice, thus actually driving the market towards higher energy efficiency of the buildings. Interesting reflections were collected through in-depth discussions during the two-days BUILD UP Skills workshops, and a targeted presentation was given on QUALICHeCK specific outcomes at the end of the second day. More on the event at www.buildupskills.eu

Webinars on demand

The following webinar recordings are now available online.

- 2016/09/28 WEBINAR #09 | Cool Roofs in the context of compliance and quality
- 2016/12/01 WEBINAR #10 | Ventilative cooling potential and compliance – Status and perspectives in Spain and Germany
- 2016/12/02 WEBINAR #11 | Status on the ground: Prevention of summer overheating
- 2016/12/13 WEBINAR #12 | A guide for policy makers to develop better frameworks for EPC compliance and enforcement

Upcoming QUALICHeCK physical events

17 January 2017, Lyon, France: 4th International Workshop Renewable heating and cooling systems for buildings

The objective of this workshop is to discuss and identify ways to better secure the compliance of renewable heating and cooling product data as well as the quality of installed systems, thereby increasing the confidence in declared values on the Energy Performance Certificate (EPC) and achieving the expected energy performance. Three aspects will be more specifically addressed: how to provide compliant input data used to issue an Energy Performance Certificate; how to improve the quality of the installation works; how to enforce compliance & how to define/apply penalties in case of non-compliance.

21 February 2017, Brussels, Belgium: 4th International Conference EPBD perspectives for compliant and smart buildings

The Conference will summarise the final outcomes and insights of the QUALICHeCK project; highlight major aspects of quality and compliance for energy performing buildings; make the link with the EPBD review and in particular the ‘smartness’ of buildings; introduce relevant upcoming developments in policies and the market.

Participation to the above events is free upon registration at www.qualicheck-platform.eu

22 February 2017, Brussels, Belgium: 4th QUALICHeCK Platform Meeting

The QUALICHeCK Platform is due to continue its exchanges and outputs after the end of the QUALICHeCK project (February 2017), networking and engaging its member organisations, as well as providing privileged information. On 22 February 2017 in Brussels, Belgium, the 4th QUALICHeCK Platform meeting will discuss the EC’s Clean Energy package in relation to specific QUALICHeCK objectives, as well as the future activities and organisation of the Platform. If you your organisation is interested in participating please contact us at peter.wouters@qualicheck-platform.eu

Upcoming QUALICHeCK webinars

24 January 2017, 10:00 CET
Interesting and innovative approaches for improved building envelope performance

25 January 2017, 10:00 CET
Renewable energy systems for buildings and EPC compliance

23 February 2017, 10:00 CET
A guide for policy makers for developing better frameworks for better quality of the works

28 February 2017, 10:00 CET
Overview of main QUALICHeCK results and insights

Participation is free upon registration; please visit www.qualicheck-platform.eu

QUALICHeCK webinars are recorded and posted online some time after the live events.

The QUALICHeCK consortium has been composed with an outlook on the project priorities, the intention to focus on 9 countries and 4 technology areas, and the need to have partners with good knowledge of the market and access to stakeholders and national governments. The consortium is led by INIVE and its member BBRI, organisations with significant experience in managing European and international projects (e.g. ENPER, BUILD UP, ASIEPI, AIVC, TightVent Europe, venticool). The issues of compliance and quality of the works have been for many years priority topics within the context of the INIVE activities.