



# The role of quality control to create trust in the renovation supply chain

**Peter Wouters – INIVE EEIG**

# Structure of the presentation



**Context for quality control**

**The QUALICHeCK project and quality control**

**QUALICHeCK outcomes**

**Quality of the works - control might be necessary**

**Conclusions**



**You expect a reliable label**

**... and you expect a good quality**

**You expect a reliable label**



**... and you expect a good quality**



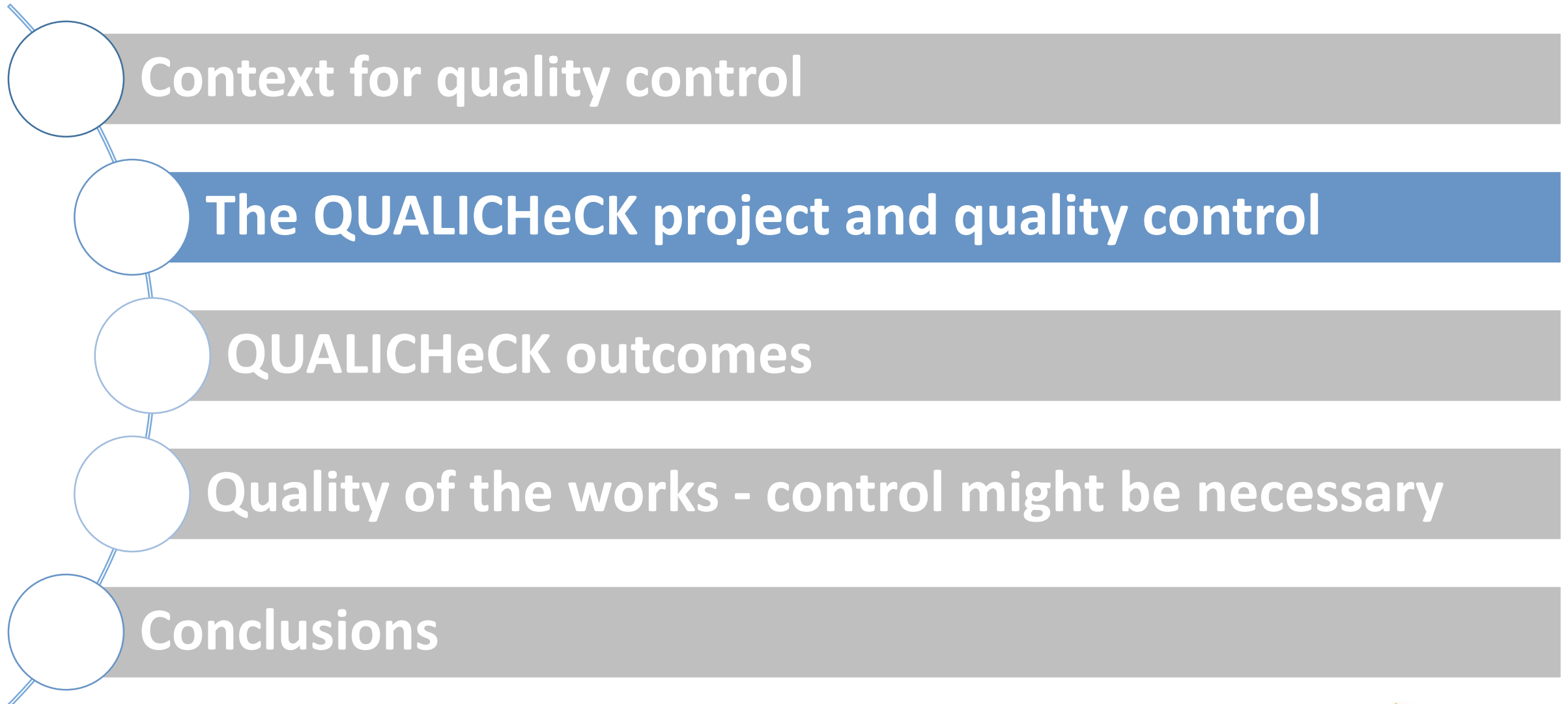


1. Good design?
2. Good products?
3. Good workmanship?



**... and you expect a good quality**

# Structure of the presentation



# QUALICHeCK project (2014-2017)



[www.qualicheck-platform.eu](http://www.qualicheck-platform.eu)

# 2 objectives of QUALICHeCK project

- 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'.*



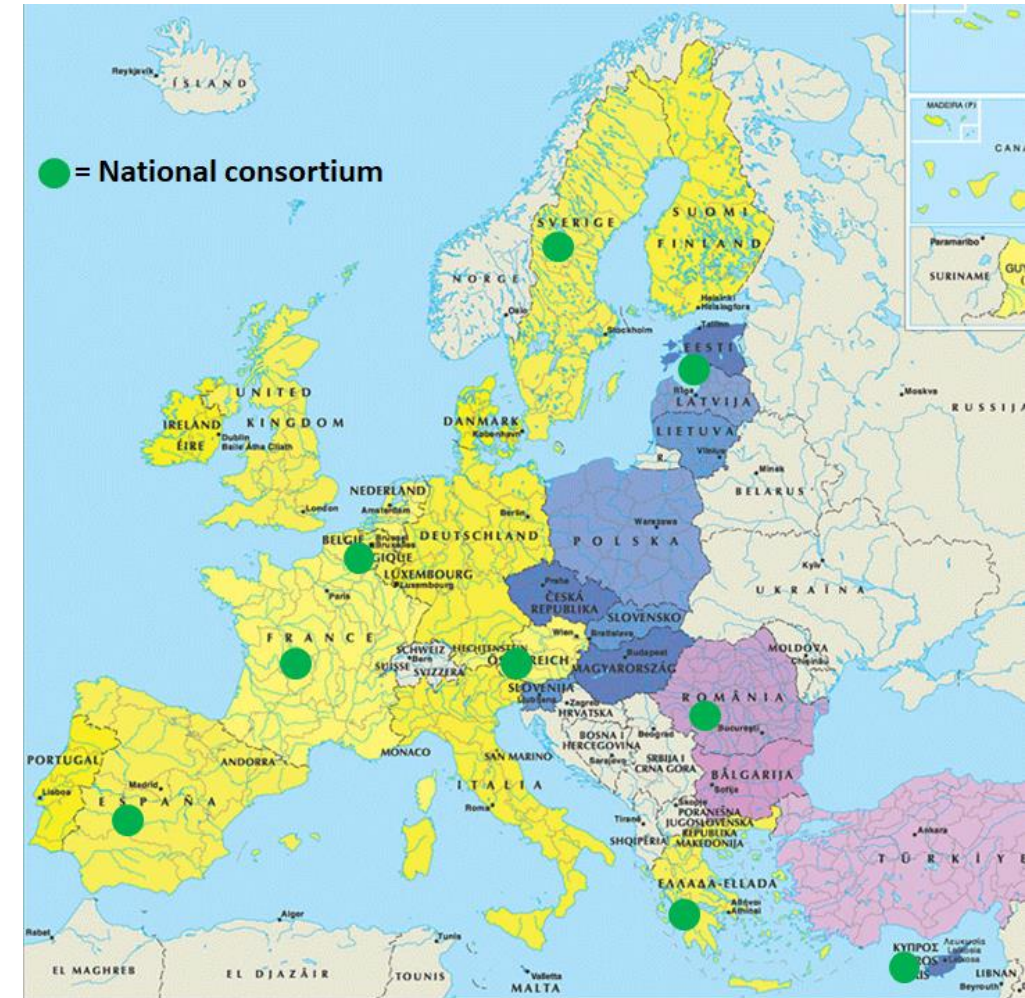
# QUALICHeCK: 4 focus areas and 9 focus countries

Transmission characteristics

Ventilation and airtightness

Sustainable summer comfort techniques

Renewables in multi-energy systems



# QUALICHeCK products and outcomes

- 1 About the status on the ground...**
- 2 About interesting approaches...**
- 3 About guidance for improvements**



**Correct thermal insulation?  
No mould problems?  
No frost damage?**

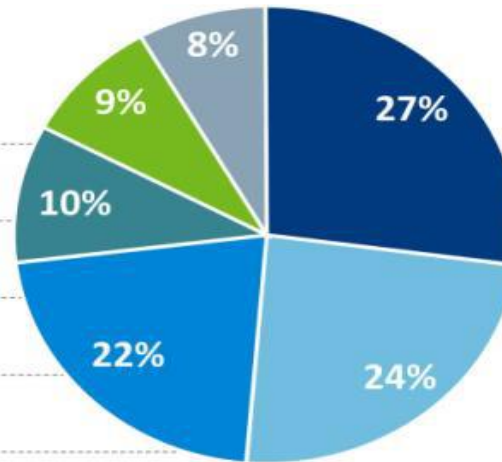
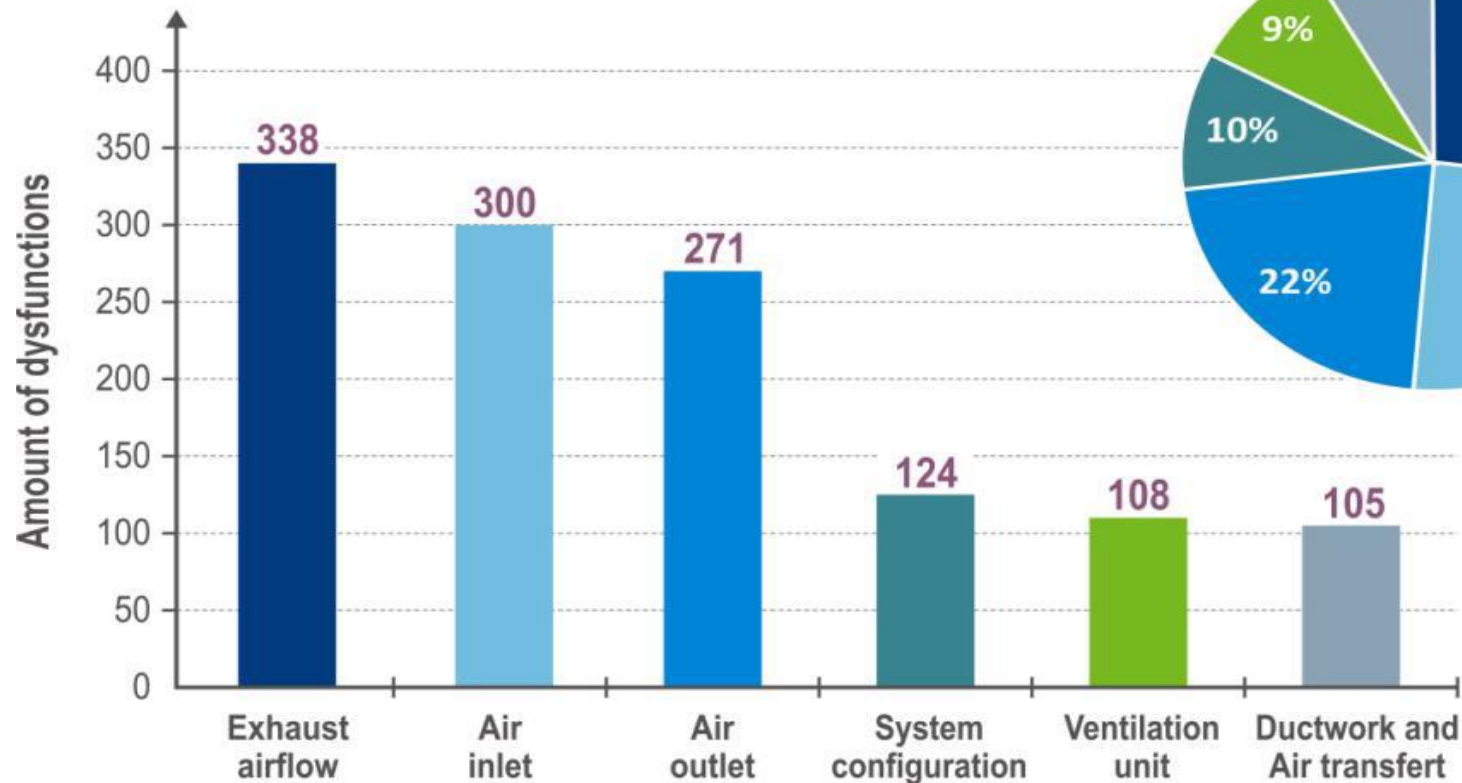
...



# Example from FRANCE:

## Quality of ventilation systems in 1.287 new dwellings

Total non-compliance or dysfunctions observed: 1246



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

1

About the status on the ground...



☒ Excellent

☐ Very good

☐ Good



## Example from SWEDEN: Airtightness of air distribution systems

- 1 About the status on the ground...



# Structure of the presentation



Context for quality control

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**QUALICHeCK outcomes**

Quality of the works - control might be necessary

Conclusions

**Compliance and quality of works  
for improved energy performance of buildings**  
Final publishable report



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[www.qualicheck-platform.eu](http://www.qualicheck-platform.eu)



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Programme of the European Union

## The QUALICHeCK project outcomes in brief

overview of documented examples 59 factsheets  
3 special issues of the REHVA journal  
9 national concertations 4 European conferences  
10 field studies final booklet  
4 platform meetings 2 sourcebooks 9 roadshows  
16 webinars terms and definitions 4 workshops  
summary of situation on the ground material for university courses





# Source book on quality of the works



Aim:

To give guidance towards better frameworks for quality of the works



# Factsheets

Author  
Christoph Sutter (baubook GmbH, Austria), Susanne Geissler (OEGNB, Austria)

Technology All technologies	Aspect Compliant and easily accessible EPC input data	Country Austria
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## baubook – EASILY ACCESSIBLE PRODUCT INFORMATION FOR EPC CALCULATION PROVIDED BY THE AUSTRIAN DATABASE

*Providing the necessary product data for calculating Energy Performance Certificates (EPCs) is one of the main purposes of the Austrian baubook database. In addition, Life Cycle Assessment (LCA) data and other information about building products are included into the database to facilitate the holistic evaluation of buildings and building components as part of voluntary Sustainable Building Assessment Schemes. This fact sheet presents the baubook database and its functionalities; it provides detailed information about the process to ensure quality of data that can be used as input data for various calculation procedures.*

Residential buildings <input checked="" type="checkbox"/>	Non-residential buildings <input checked="" type="checkbox"/>	Specific buildings: .....
New buildings <input checked="" type="checkbox"/>	Existing buildings <input checked="" type="checkbox"/>	

### Context

Since 2008, the online product database baubook has offered easily accessible input data needed for the calculation of EPCs (Energy Performance Certificates) according to the Energy Performance of Buildings Directive 2010/31/EU (EPBD) and for the voluntary assessment of the environmental impact of buildings in Austria<sup>1</sup>. The product data are declared by the manufacturer. Prior to publication, all information is checked by qualified persons. In order to ensure highest accessibility, the data are transferred to EPC software programs which are approved for calculating and issuing EPCs in Austria, but also to other software programs and platforms applied for voluntary building assessments.

The data necessary for the calculation of building energy performance are expanded by additional product information about the ecological performance (Life Cycle Assessment (LCA) data, indoor quality data, ...) and technical adjectives. Thus, baubook provides a central product database, containing ecological and energy-related data, and the basic data required to calculate EPC and LCA for buildings. This makes it useful for architects, consultants, developers and construction industry managers looking for tools assisting them in planning and building energy-efficient and ecological buildings.

### Regulatory background

In Austria, the regulatory background for EPCs is defined by the nine federal provinces because the EPBD is transposed and implemented on the regional level. Thanks to coordination between the federal provinces, the method for calculating EPCs is harmonised to a high degree, though not identical [3, 4]. Declaration of EPC input data for products is based on European Standards, but there are still Austrian standards [5, 6, 7] which have to be considered. Therefore, product information and test certificates developed for other countries cannot be used in all cases in Austria, but have to be issued once again taking into account specific Austrian requirements. This poses an economic challenge especially for small markets such as the Austrian one.

<sup>1</sup> <http://www.baubook.info> and <http://www.baubook.info/?SW=6&lng=2> (new: English version) (retrieved on 16.8.2016)

## What is a factsheet?

## Short document on a specific topic

# Fact Sheets by topic

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

## FACT SHEET #47 | Quality control frameworks for cavity wall insulation

Posted on 2017/02/17 by Alexander Deliyannis



Several countries have installed a quality control system to provide confidence in the quality of the works of cavity wall insulation in existing walls. Based on the experiences in Belgium and the UK, this fact sheet gives an overview of

Continue reading →

## FACT SHEET #09 | AMA – General material and workmanship specifications

Posted on 2016/03/23 by Maria Dimitropoulou



AMA (General material and workmanship specifications) has been used in Sweden for more than sixty years. The different parts of AMA are used as reference documents in technical specifications. Between 90 and 95% of all building projects in Sweden refer ...

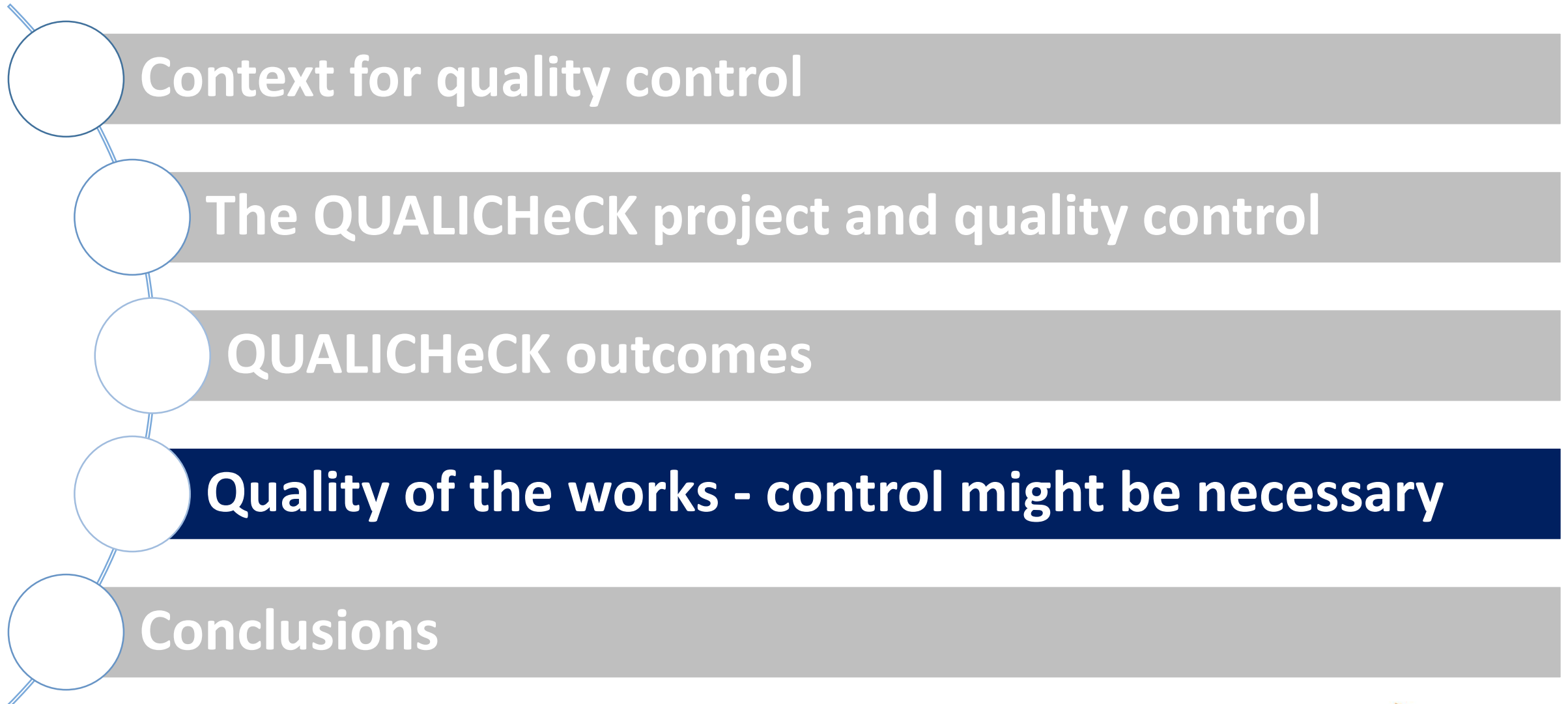
Continue reading →

# Focused technology workshops

- **Focus area [ventilation and airtightness](#):**
  - March 16-17 2015 in Lund
  - With support from TightVent, venticoool, AIVC and REHVA
- **Focus area [sustainable summer comfort](#):**
  - March 9 – 10 2016 in Athens
  - With support from the European Cool Roof Council, ES-SO, venticoool and AIVC
- **Focus area [transmission losses](#):**
  - December 15 2016 in Brussels
  - With support from EURIMA
- **Focus area [renewables in multi-energy systems](#):**
  - January 17-18 2017 in Lyon

→ All presentations are available on the website

# Structure of the presentation



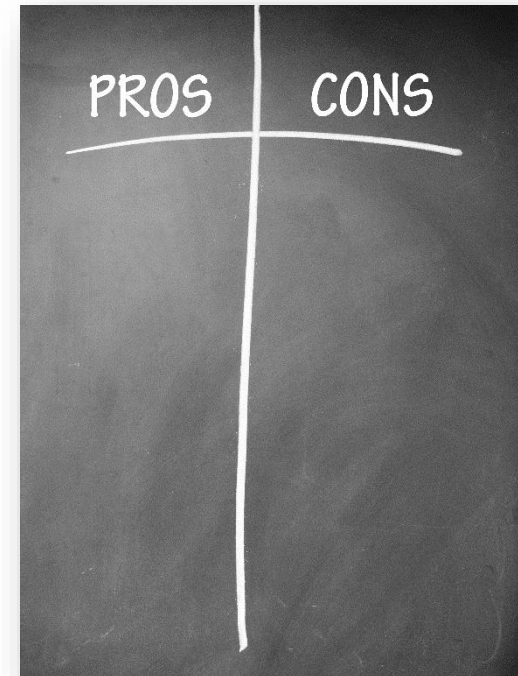
# Quality frameworks

- **Without third party control**

- By owner, architect, ...
- Very direct, but not always the required competence, sometimes conflict of interest, ...

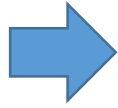
- **With control by third parties, it is possible to...**

- Control of competence of designers, of executors, ...
- Control of execution of the works
- Control of achieved performances





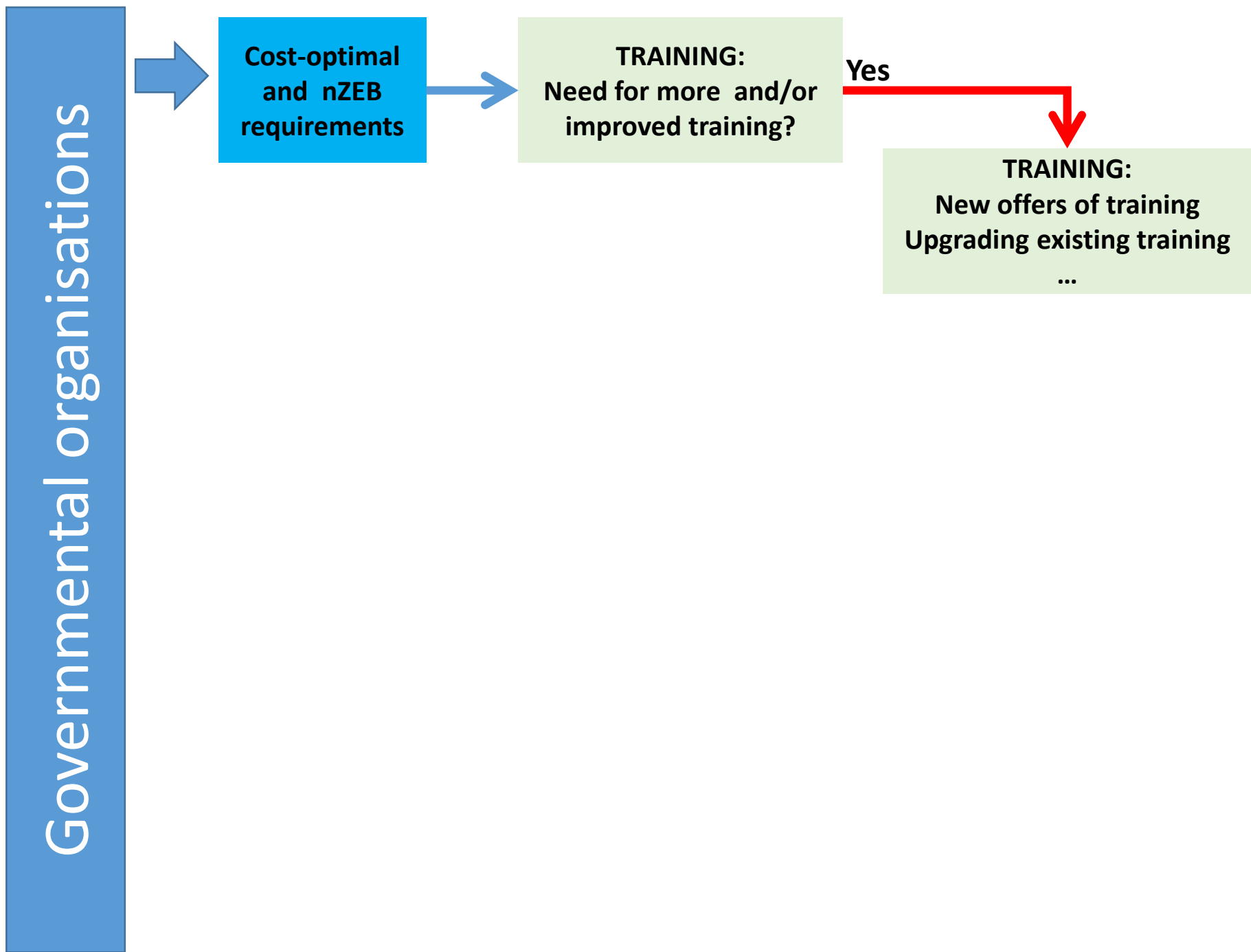
Governmental organisations



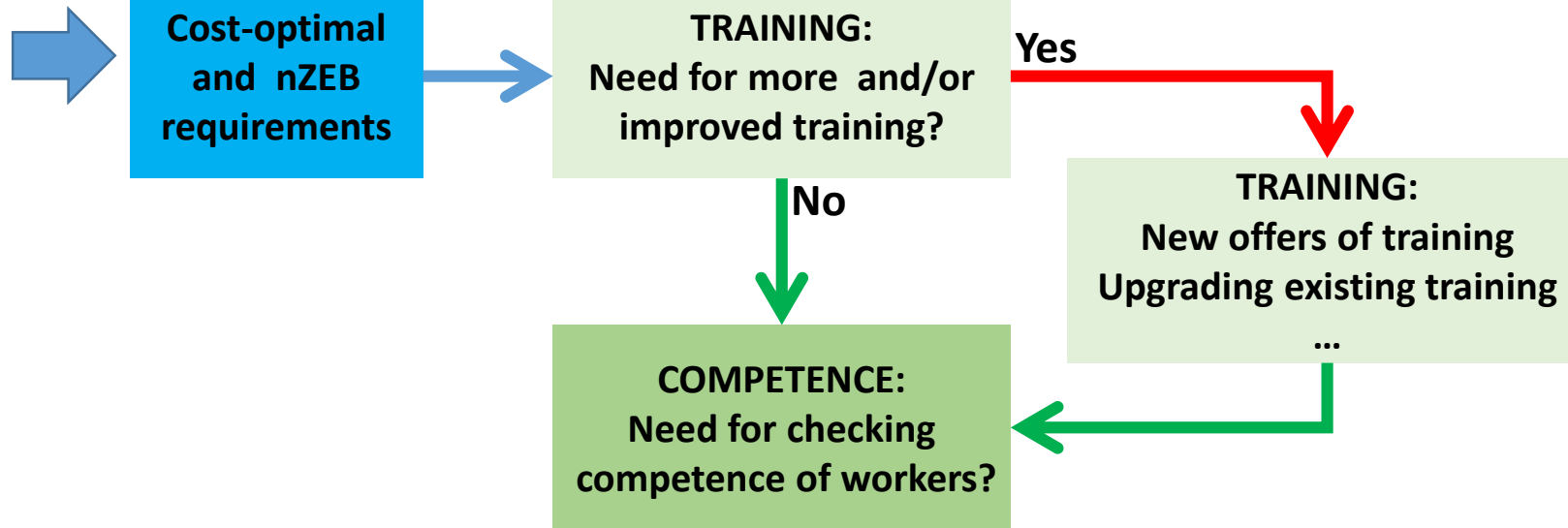
**Cost-optimal  
and nZEB  
requirements**



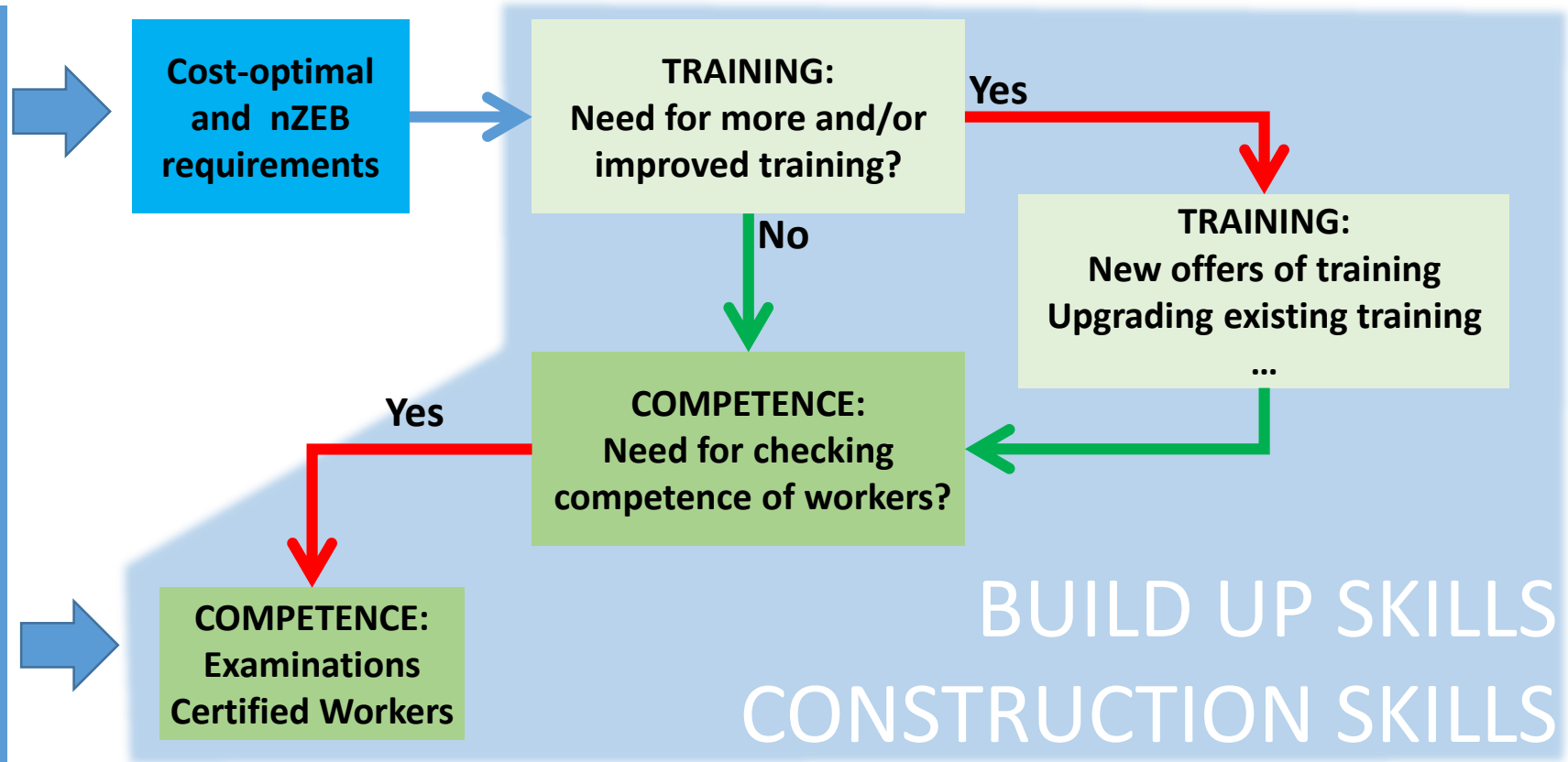
**TRAINING:  
Need for more and/or  
improved training?**



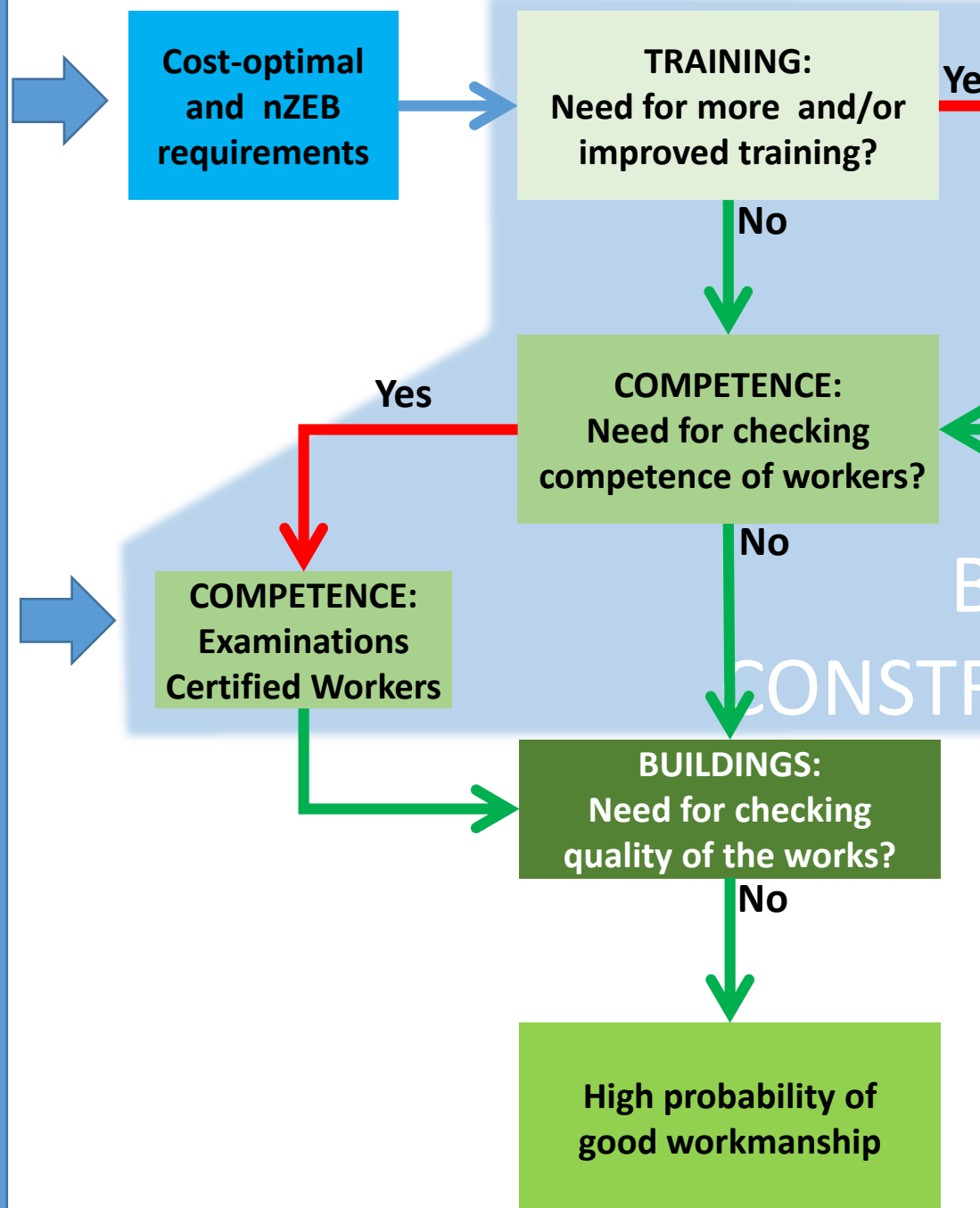
# Governmental organisations



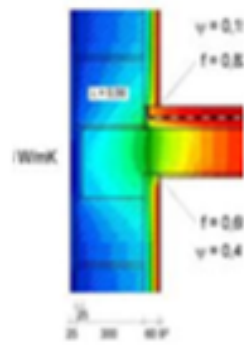
# Governmental organisations



# Governmental organisations







# Thermal bridges



Belgium

France

Germany

Netherlands

...

Interesting EPBD related  
approaches...



**1. Awareness**

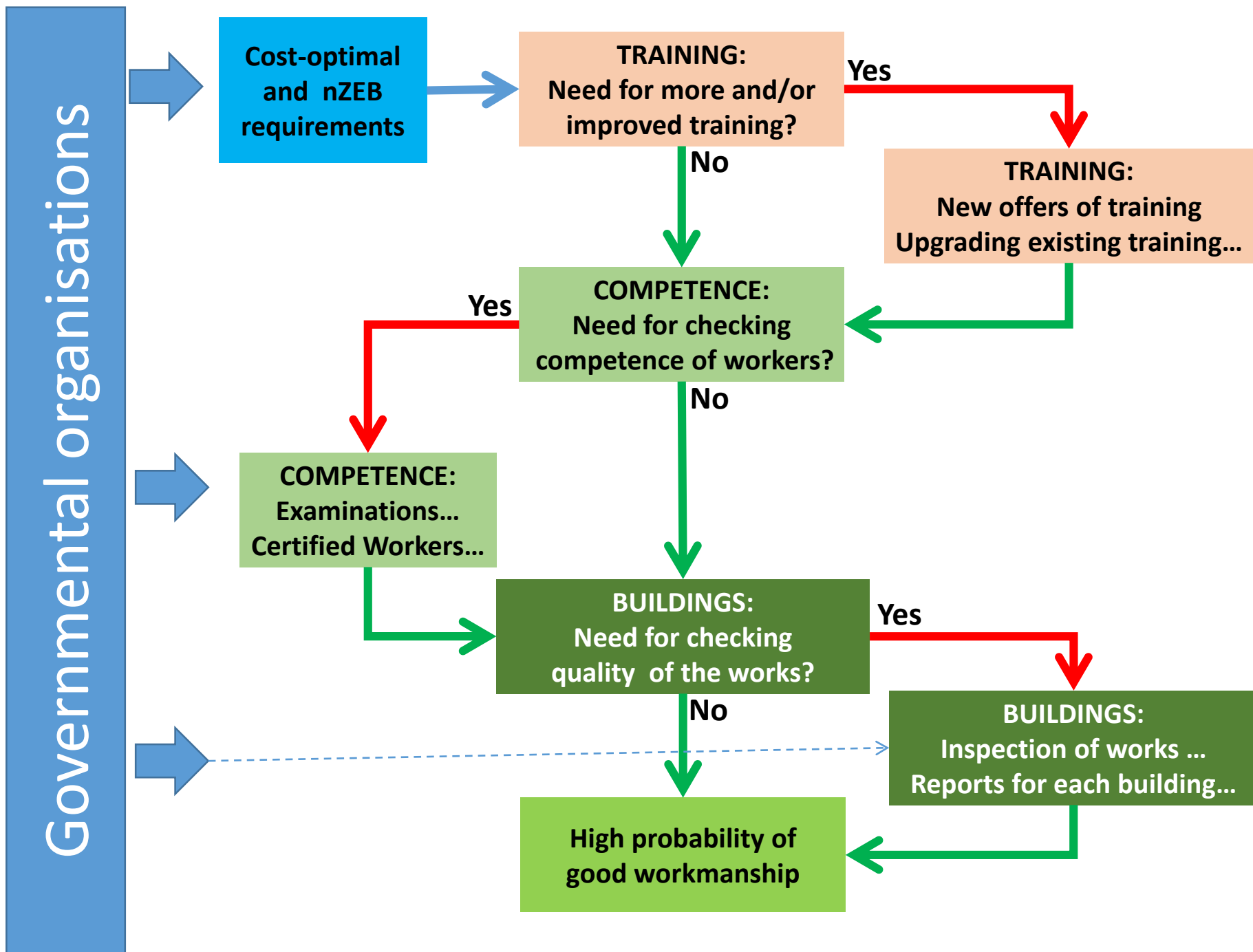
**2.  
Training**

**3.  
Good design**

**4. Purchase &  
installation**

**5.  
Testing**



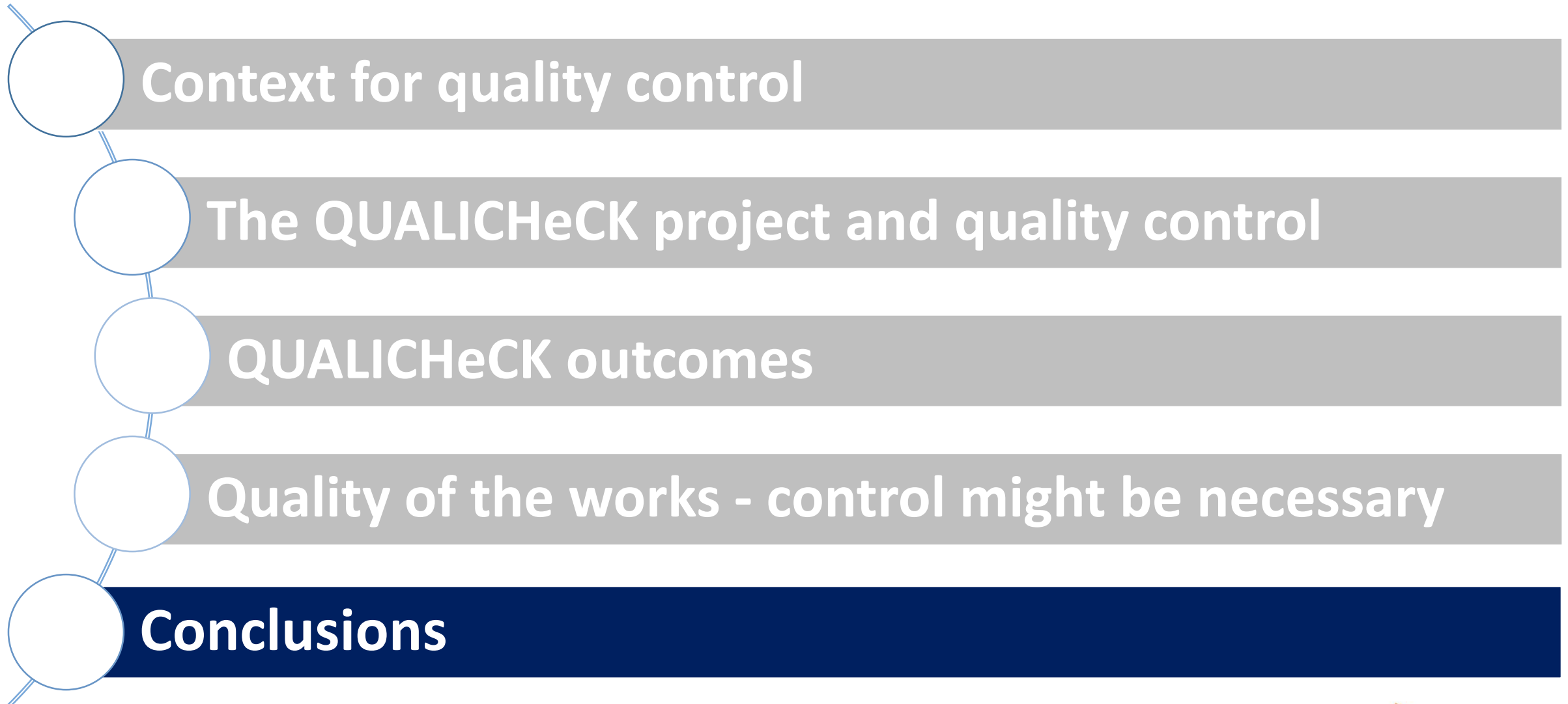




**June 25: 1<sup>st</sup> international conference on BIM and energy performance of Buildings'**



# Structure of the presentation



# Conclusions

- Good quality of the works is crucial and not always evident to assume!
- Competence improvement is sometimes necessary AND sufficient to achieve good quality of the works
- In other cases, it is important/crucial to have third party control in order to achieve good quality of the works
- Construction 4.0 and BIM might be a major game changer
- There is a lot of interesting information in the QUALICHeCK outcomes

**Thank you for your attention!**