



Survey and solutions for potential cost reduction in the design and construction process of nearly zero energy multi-family houses

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Introduction

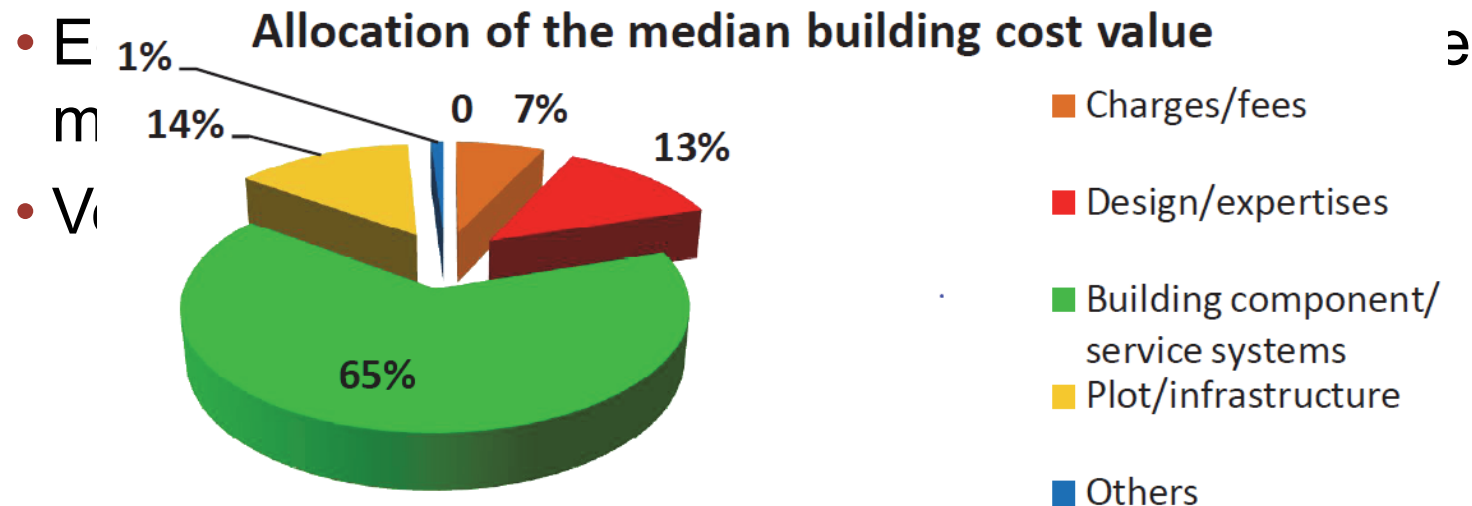


- Cost (effectiveness) analyses take into account materials and labour
- The construction process includes: design, insurances, commissioning, preliminaries.
- Preliminaries: are costs that do not refer to a specific package of work, and are mainly related to the "life cycle" of the construction site

Introduction



- Preliminaries account to 10-15% of overall construction costs



Objective and method



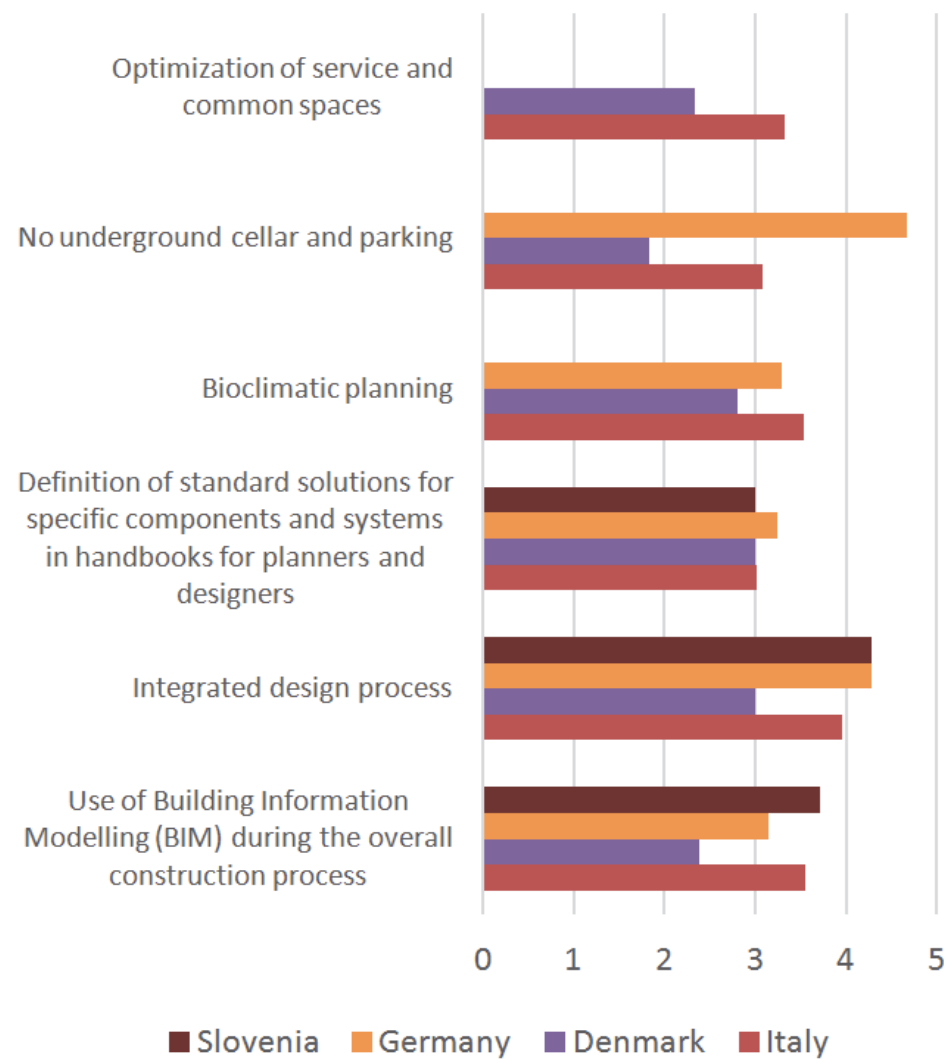
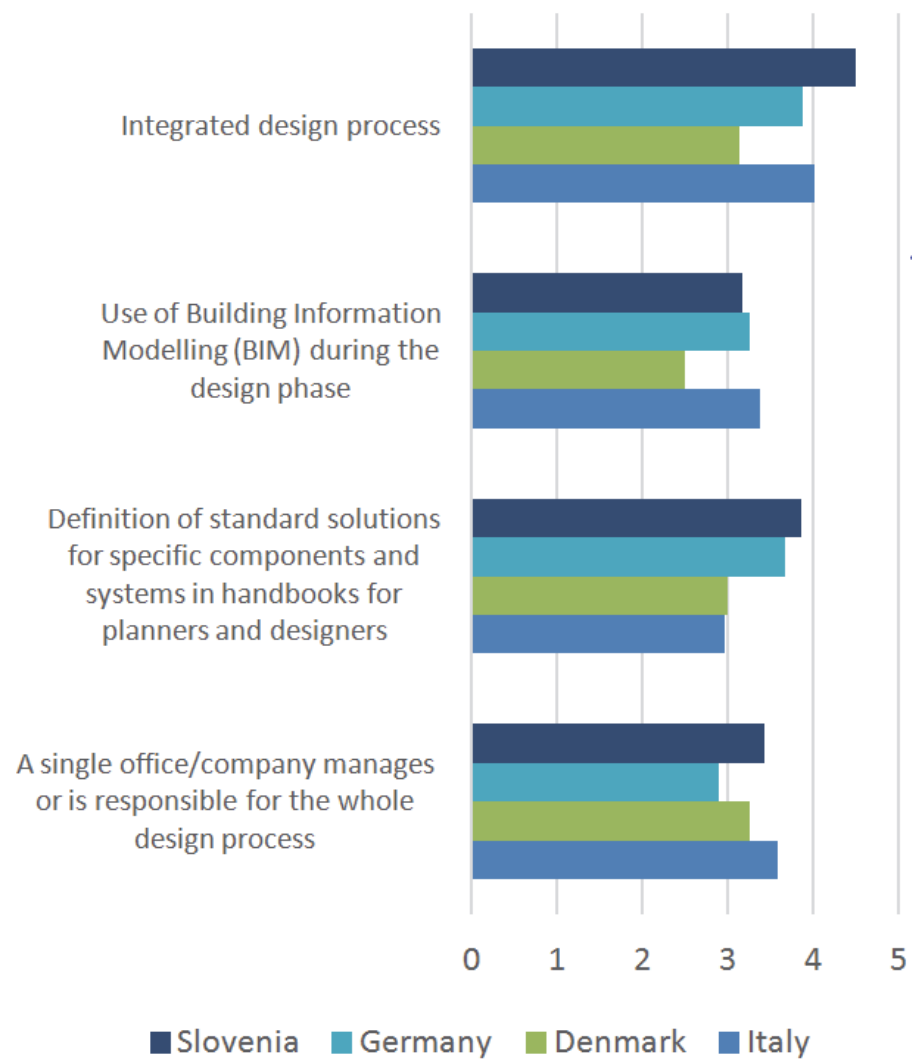
CoNZEBS started exploring this issue, through two main tasks:

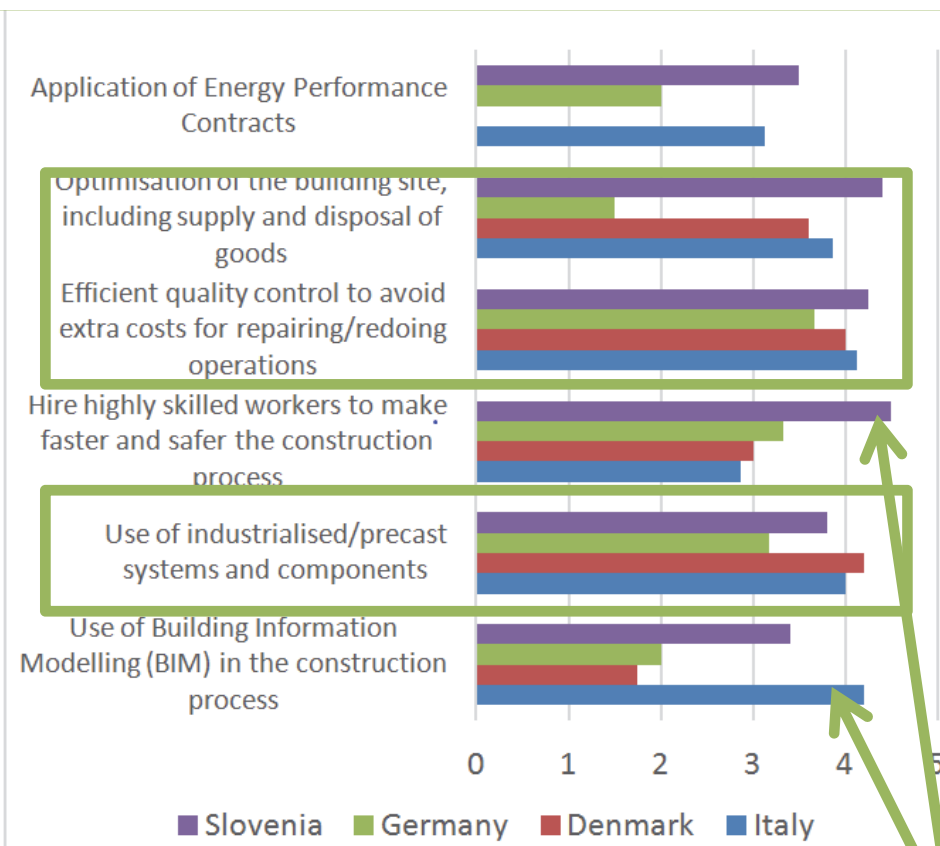
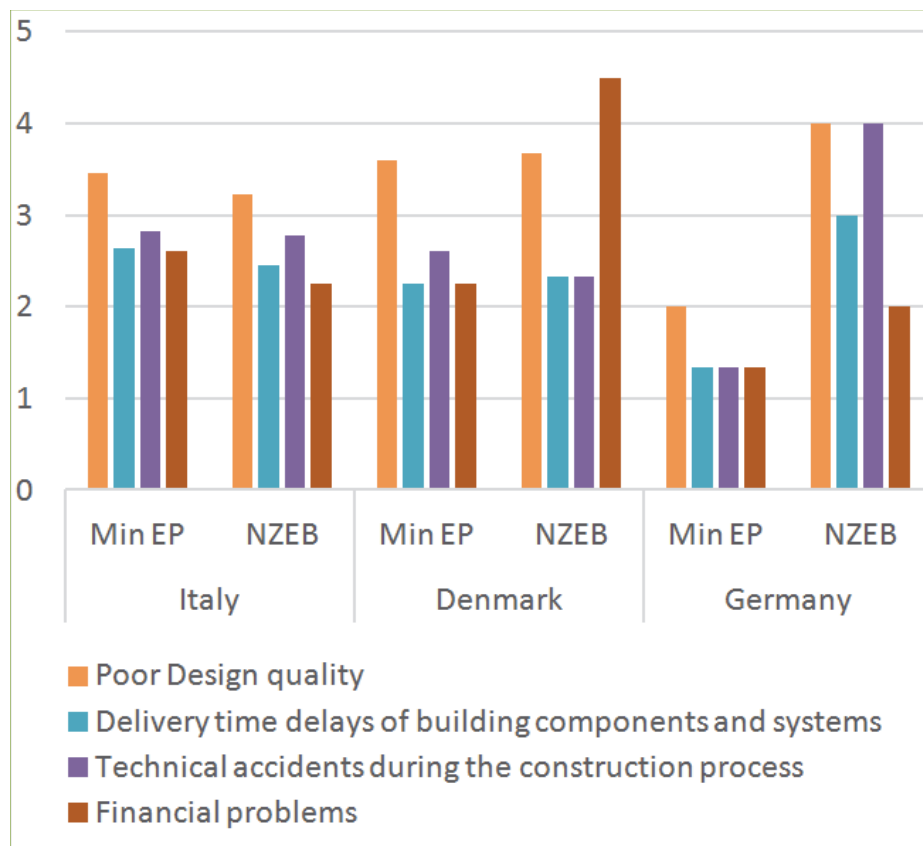
1. Involvement of relevant actors with dedicated questionnaires and interviews.
2. Provide quantitative examples of technologies able to generate savings across the whole construction process.

Questionnaire



- Two set of questionnaires were implemented for:
 - Designers and planners (individuals and studios)
 - Construction companies, (social) housing associations and contractors.
- Common core of questions with specific issues treated at national level
- Provide information about cost and management of n the design and construction process
- Identify potential solutions for cost reduction





Exemplary technologies



- The construction cost and time assessment was carried out by CoNZEBS partners with contribution of industries
- Exemplary technologies were compared versus *standard* technologies with equivalent levels of service/performance

Selected technologies

- Autoclaved aerated concrete blocks
- Monoblock windows
- PV solar roof
- Hygro-thermal ventilation



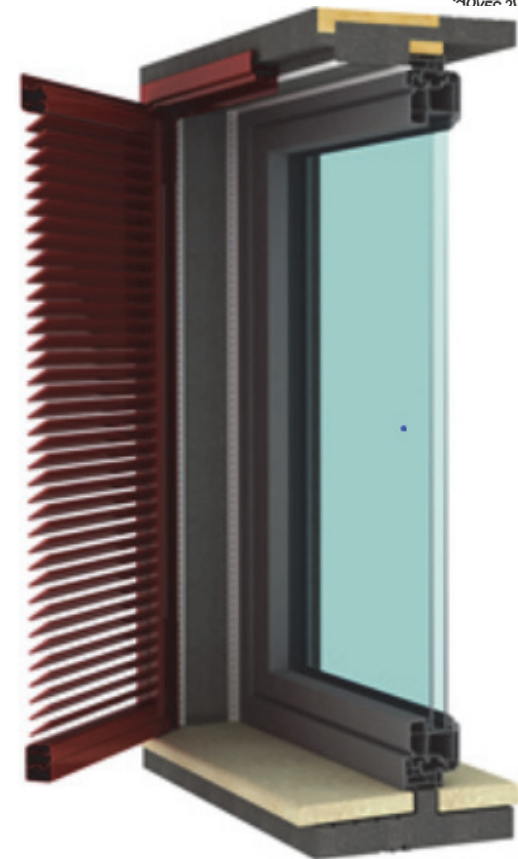
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1 - Air intake with the rosettes above the windows

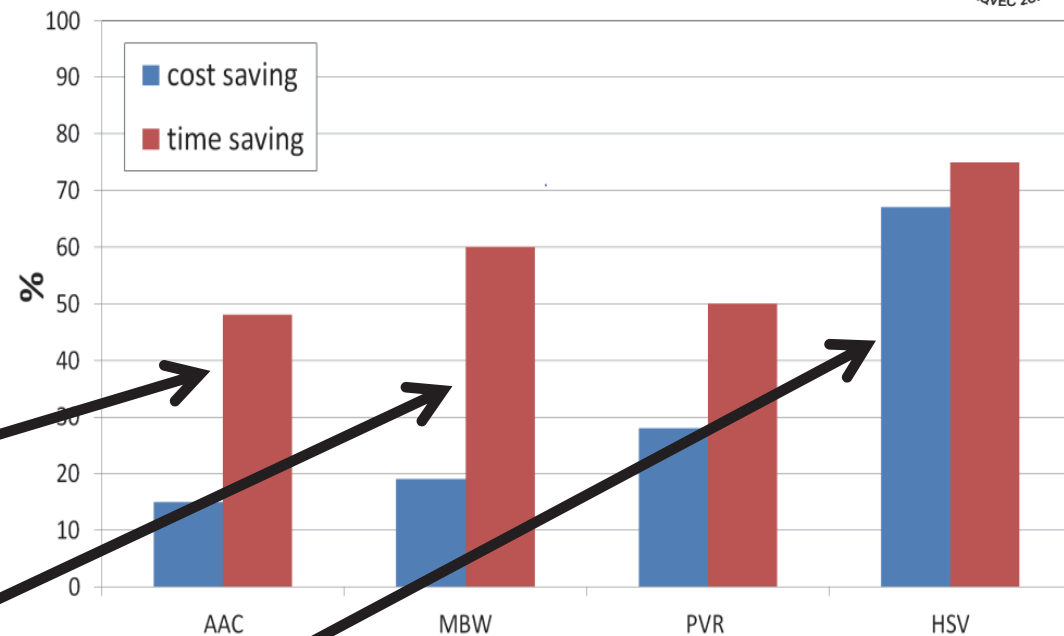


2 - suction fan



Results

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- Limit on U-value
- Architectural integration
- Impact on energy performances

Conclusions



- Stakeholders detected some potential solutions to reduce cost in the design and construction process
- Savings can be achieved by optimising the construction site management, reducing the preliminaries
- Technologies exist but must be carefully assessed
- New cost effectiveness methodologies should encompass all the phases of the construction process



- Full report:
www.conzebs.eu/images/WP3_D3.1_Design_and_construction_process_final2.pdf
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thanks

Questions and Comments



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