Evaluation of the Danish Safety by Design in Construction Framework (SDCF)

Schultz, Casper Siebken; Jørgensen, Kirsten

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Casper Siebken Schultz, Technical University of Denmark
Kirsten Jørgensen, Technical University of Denmark

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Agenda

- Background and problem
- The Safety by Design in Construction Framework (SDCF)
- Processes and intervention
- Evaluation:
  - Quantitative evaluation
  - Qualitative evaluation
Safety by Design in Construction
DTU project 2012-2015

• Safety has root causes in project design

• Developing and testing a framework (SDCF)

• Integrated with existing methods and practices

• Combines an OHS approach with a focus on quality and constructability
Safety by Design in Construction Framework (SDCF)
Guides and tools

Summary of risks and the OHS Log (tool)
SDCF
The process

RIBA PoW

0. Strategic definition / 1. preparation and brief
- Formulate OHS aim and strategy
- Establish organization, method and process

Screening (Plan)
- Initial OHS screening

Design and engineering (Do)
- Appoint OHS coordinator and manager of consultants duties
- Continuous OHS logs on design meetings

Scrutiny / QA (Check)
- Scrutiny / QA

Adjust
- Establish OHS log
- Performance requirements for constructability

2. Concept design

3. Developed design / 4. Technical design
- OHS screening based on performance requirements
- Analysis of constructability
- Coordination between disciplines
- Continuous OHS logs on design meetings

(Tender) / 5. Construction
- Plan for OHS in tender
- Communication residual hazards
- Handover to coordinator
- Information, monitoring and control

- Scrutiny / QA

- Adjust design
- Adjust tender material
Four intervention projects

1) a public railway station

2) a health care center

3) a public school

4) an environment and supply center facility
Process and results

Examples
Quantitative evaluation

Questionnaires

- 50 % answers “project documentation is better than in other projects” (38% neutral).
- 50 % answers “OHS has been more important on this project compared to other similar projects” (38% neutral).
- 37 % answers “(their individual) OHS knowledge has increased”.
- 50% answers “they consider the role of creating a safe working environment for the construction workers more important than before the intervention”.
- 44% answers “safety in execution in the project is very important for decisions in designer and planning”.
Qualitative evaluation (i)

Evaluating the intervention

- Better OHS planning and problem solving.
- Increased OHS focus and knowledge of the participants.

- OHS should be integrated continuously and early.
- The level of detail should be aligned.

- The OHS log has been an important process tool.
- The summary of risks has ensured a thorough assessment.
Summary
Evaluating the SDCF intervention

- Organisations can implement the framework successfully
- Systematic approach and documentation

- Challenges
  - Establish incentives and prioritization

- Integration with existing practices
  - Early involvement

- Future perspectives: Scale and BIM
Thank you!

Questions?
Smart prevention for sustainable safety