UHR PRAXISDATEN ÜBER UNFALLVERHÜTUNG DURCH DESIGN - UNTERSUCHUNG ÜBER 1.700 TÖDLICHE UNFÄLLE IN 7 LÄNDERN
PREVENTION OF ACCIDENTS BY DESIGN - INVESTIGATION OF MORE THAN 1.700 FATAL ACCIDENTS IN 7 COUNTRIES

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Workshop der International Safety and Health Construction Co-ordinators Organisation (ISHCCO)

33. Internationaler Kongress für Arbeitsschutz und Arbeitsmedizin
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ISHCCO

Prevention Through Design

- National Safety Council
- Design for Construction Safety (OSHA)
- Australian Safety and Compensation Council
- Construction Industry Institute
- Construction Design Management Regulations
- Safety Design (HSE)
- Gambatese, Hinze, Baker, Driscoll, ...

Motivation for study

- Directive 92/57/EEC - Temporary or mobile construction sites
- "Whereas unsatisfactory architectural and/or organizational options or poor planning of the works at the project preparation stage have played a role in more than half of the occupational accidents occurring on construction sites in the Community;"

PhD Research

- Bianca Vasconcelos (2009-2013)
- Universidade Porto (Portugal) and Universidade Pernambuco (Brasil)
- Supervisors: Alfredo Soeiro and Beda Barkobebas Jr.
- What is the percentage of accidents prevented during the design?

Coordinator at project preparation stage

- Article 2

Definition

"(e) 'coordinator for safety and health matters at the project preparations stage' means any natural or legal person entrusted by the client and/or project supervisor, during preparation of the project design, with performing the duties referred to in Article 5;"

Method

- Analyze fatal or serious accidents
- Define types of design:
  - Structures, architecture and other
- Classify the major causes of the accidents in two groups:
  - Preventive measures possible during design phase
  - Otherwise

Accidents analyzed

- Brasil (SFIT) – 675
- Canada (CCOHS) – 940
- USA (FACE, NIOSH, PtD) – 116
- Portugal (ACT) – 203
- United Kingdom (HSE) – 100
- Singapore (WSH Council) – 41
- Pernambuco (U. Pernambuco) - 32

Results

- Percentage of accidents avoidable in design phase from the seven sources
  - Minimum: 23,6
  - Maximum: 45,0
- Average percentage of 2002 accidents
  - 35,1

Detailed Analysis

- Descriptive information
  - Causes
  - Seriousness
- Analytical information
  - Factor
  - Preventive measures
- Design phase useful
  - Type of design
  - Designer guidance

Conclusions and questions

- Is it worth having a safety coordinator at design phase?
- Is it better than the safety coordinator at design phase to use a guide for designers to prevent accidents?
- Is MAARD a good solution?
- How can this study work with others already done and with future research?

MAARD

- Method of Analysis for Accident Related Design
- Matrix that analyzed frequency and gravity of accidents
- Classify each type of preventive measure linking to phases of design
- Create a prevention guide for designers in each speciality and phase

Danke!
Thank you!

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