Safety in Design: A Study of Designer's Motivation in Canberra, Australia

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Abstract

Construction is a high-risk occupation, and more needs to be done to increase safety. Traditionally, the responsibility for construction safety has been with the builder. To further improve construction safety, there is a need to look upstream into the design phase. Safety hazard identification during the design phase, referred to as Safety in Design (SID), can influence worker injuries, improves design quality and delivers long-term economic benefits. However, despite the known benefits of SID and proposed ways forward, studies have shown designers lack the motivation to implement SID. Little is understood about why there is a lack of motivation, and how to best motivate designers to implement SID. To address the knowledge gap, this research uses self-determination theory (SDT), a motivational theory that differentiates six different levels of motivation, to investigate the designer's motivation and makes recommendations aimed to improve SID implementation. Semi-structured interviews with 16 architects and 14 engineers from Canberra Australia were undertaken to better understand the perceived benefits of SID for the construction industry, the barriers inhibiting SID and the current motivation of designers to increase SID implementation. The research found that: designers lack an awareness and value of the SID concept; designers lack clarity on how to implement SID; there is a lack of enforcement and incentive for designers to increase SID implementation; and, there is a low safety culture within the design industry. Based on these findings, a Safety in Design Motivational Model (SIDMM) was established to help motivate designers to implement SID. The SIDMM informed five key recommendations to practice: 1) create awareness of the SID concept and legislation; 2) identify the value of SID to the designer; 3) increase the designer's knowledge of how to implement SID; 4) improve the safety culture of the design industry by aligning culture improvement with the SIDMM; and, 5) enforce SID where it is deliberately ignored.

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Publications

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Other Publications

Zou, P.X.W., Marsh, D., Evans M., Sherrard, A. and Howard, J. (2014), Changing Construction Safety Culture and Improving Safety Performance by Design Thinking and Co-production: Research Proposal and Preliminary Results, *Proceeding of CIB W99 Achieving Sustainable Construction Health and Safety*, 2-3 June 2014, Lund Sweden, 126 - 136.

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Abbreviations

ACT	Australian Capital Territory
AIA	Australian Institute of Architects
BIM	Building Information Modelling
BCA	Building Code of Australia
CHAIR	Construction Hazard Assessment and Implication Review
CET	Cognitive Evaluation Theory
CPD	Continuing Professional Development
CSR	Corporate Social Responsibility
EA	Engineers Australia
ERIC	Eliminate Reduce Inform Control
ES	Decision Support Expert System
LCS	Life Cycle Safety
OIT	Organismic Integration Theory
PM	Project Manager
QA	Quality Assurance
ROAD	Risk and Opportunity at Design
SDT	Self-Determination Theory
SID	Safety in Design
SIDMM	Safety in Design Motivational Model
SWMS	Safe Work Method Statement
ToolSHeD	Tool for Safety and Health in Design
WHS	Workplace Health and Safety