

## ABSTRACT

Title: Designer Competency Matrix for Prevention through Design (DCM-PtD) Practice in Construction Projects

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Year: 2021

### Abstract:

The designer competence is a key dimension in the Prevention through design (PtD) practices that has yet to be explicitly highlighted and assessed in regards to its practical implications. Despite the subject of PtD in construction has been progressively studied, the context of the assessment of competence is virtually limited. At present, there is no systematic assessment framework that can represent the designer competence in PtD practice. The theoretical framework of key attributes (KAs) of designers PtD competence in construction is firstly identified through a systematic literature review and then validated with the construction stakeholders, which resulted in 18 KAs under three main domains (i.e., knowledge, skills and Experience) being identified. Based on the identified KAs, a quantitative and a qualitative methodology was employed, with fifty-seven practitioners participating in three rounds of a Delphi questionnaire survey to identify the significant KAs for each domain PtD competence. The resulting conceptual competence index model for three domains were then developed based on the identified KAs and their relative significance. Then, by means of face-to-face interviews, followed by focus group session, the taxonomy competence maturity levels for each KAs in three domains were established. The consolidation of the index model and the taxonomy competence maturity levels has led to the development of the Designer Competency Matrix for PtD (DCM-PtD). The DCM-PtD model was then computerised in proprietary spreadsheet software, thereby providing an administrative mechanism for managing and monitoring the profile of the designer competence. With the aid of a panel of experts, a validation study of the DCM-PtD was conducted and subsequently tested on designers, to demonstrate the application of the model. The development of a DCM-PtD model can serve as a guide for design organisations to facilitate in-house designer PtD competence development.