

How to Spell Resilience in the Built Environment

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Resilience in the built environment is commonly referred to as the ability to resist, respond and recover from disruptive events such as natural disasters. However, this concept has been broadened to the term “all hazards,” meaning “...a threat or an incident, natural or manmade, that warrants action to protect life, property, the environment, and public health or safety, and to minimize disruptions of government, social or economic activities. It includes natural disasters, cyber incidents, industrial accidents, pandemics, acts of terrorism, sabotage, and destructive criminal activity targeting critical infrastructure” (The White House 2013). The infrastructure to be protected includes wastewater, portable water systems, transportation systems, solid waste management systems, liquid fuels, natural gas, inundation protection systems, information technology, electric power systems, communications systems, and the performance of building systems (Scott 2015), as well as chemical facilities, the defense industrial base, emergency services, financial services, food and agriculture, government facilities, healthcare and public health, nuclear reactors and materials (The White House 2013). As the future stewards of the built environment, construction students should be aware of the hazards and types of infrastructure to be protected, and be educated in the concepts of resilience to resist, respond and recover from those hazards. This study will attempt to discover what those key concepts in resilience are with the longer term goal of developing research-based educational competencies. Since an initial review of literature did not uncover any previously published summaries of key concepts in resilience, a second review of the more technically-oriented resilience literature was used to identify the primary areas being studied. The resulting draft key concepts are presented, followed by a discussion of their basis of determination. In other similar areas, such as sustainability, key concepts have been developed based on roundtable discussions by topic experts at professional conferences. Therefore, using the poster as a component of the research method, it is anticipated that the draft primary concepts in resilience will be actively discussed at the conference. The exposure with attendees will be very beneficial for discovering unpublished work, gathering expert opinions and an appropriate next step to refine what the key competencies in resilience should be. The eventual impact of this study will be very large, framing a set of recommended competencies in resilience for construction students. With integrated understanding of resilience, our graduates will be better prepared to deal with the challenges of increased frequency and severity of hazards combined with our cultural reliance on the many forms of infrastructure.

Key Words: Resilience, Infrastructure, Hazards, Educational Competencies.

References:

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