Market Demands in the Construction Industry to Increase Societal Resilience to Disasters

Disasters continue to exact a heavy toll on many communities around the world. Globally during the last 10 years, over 700 thousand people have lost their lives, over 1.4 million have been injured and approximately 23 million have been made homeless as a result of disasters. More than 1.5 billion people have been affected by disasters in various ways, with women, children and people in vulnerable situations disproportionately affected. The total economic loss was more than $1.3 trillion.

It is critical to anticipate, plan for and reduce disaster risk in order to more effectively protect people, communities, their livelihoods, health, cultural heritage, socioeconomic assets and ecosystems, and thus strengthen their resilience. The Sendai Framework for Disaster Risk Reduction, endorsed by 187 UN states in 2015 , recognises that disaster risk reduction practices need to be multi-hazard and multisectoral, inclusive and accessible in order to be efficient and effective. The Framework also identifies: A need for the private sector, including the construction industry, to work more closely with other stakeholders and to create opportunities for collaboration, and for businesses to integrate disaster risk into their management practices; and the need to promote the incorporation of disaster risk knowledge, including disaster prevention, mitigation, preparedness, response, recovery and rehabilitation, in formal and professional education and training.

The vital role of the built environment in serving human endeavours means that when elements of it are damaged or destroyed, the ability of society to function – economically and socially – is severely disrupted. The protective characteristics of the built environment offer an important means by which humanity can reduce the risk posed by hazards, thereby preventing a disaster. Conversely, post-disaster, the loss of critical buildings and infrastructure can greatly increase a community's vulnerability to hazards in the future. Finally, the individual and local nature of the built environment, shaped by context, restricts our ability to apply generic solutions. The consequences outlined above serve to underline and support the growing recognition that those responsible for the built environment have a vital role to play in developing societal resilience to disasters.

There are 192K construction firms in the UK (2.9M in EU) and one in 10 people employed in the UK work in construction; The Creation & Use of our built assets :accounts for approx 6% of Gross Domestic Product (excluding Supply Chain); provides a significant multiplier effect to the wider economy and underpins the overall well-being of society; and consumes 40% of UK energy, half of our water, one quarter of all raw materials, produces one third of landfill waste and is responsible for almost one third of work-related fatalities.

Investment in infrastructure development is a pressing need given increasing worldwide populations and the trend towards urbanisation. Growing middle classes in emerging and high-growth markets are demanding new infrastructure and services, including roads, schools, hospitals and transport. In its report, Infrastructure productivity: how to save US$1tn a year, McKinsey estimates that infrastructure spending of US$57tn will be required between 2013 and 2030. RICS in 2015 stated "...the iimportance of a massive rethink around how we build up skills across our sector to meet the challenges we're facing and how we ensure economic viability for land and real estate firms while delivering on social needs and managing finite resources."

How can built environment professionals contribute to the aims of the Sendai Framework for Disaster Risk Reduction 2015-30?

Property Cycle		Preparation		Design			Pre-Construct	Construct	USE
		Appraisal	Brief	Concept	Development	Design	Tender	Construct	Operate and maintain
Resilience of assets		Social							
		Technological							
		Environmental							
		Economic							
		Institutional							
Built environment stakeholders	Local and national government	Knowledge gaps							
	Community								
	NGOs, INGOs and other international agencies								
	Academia and research organisations								
	Private sector								

Figure 1 (CADRE framework

In recognition of these challenges, as part of CADRE (Collaborative Action towards Disaster Resilience Education) , an EU funded project undertook an initiative on market demands and skills needs in the construction industry to increase societal resilience to disasters. The research team conducted a detailed study to capture labour market requirements for disaster resilience and its interface with the construction industry and its professionals and the key components included: Construction/property life cycle; Key resilience assets; and Key stakeholders (Figure 1).

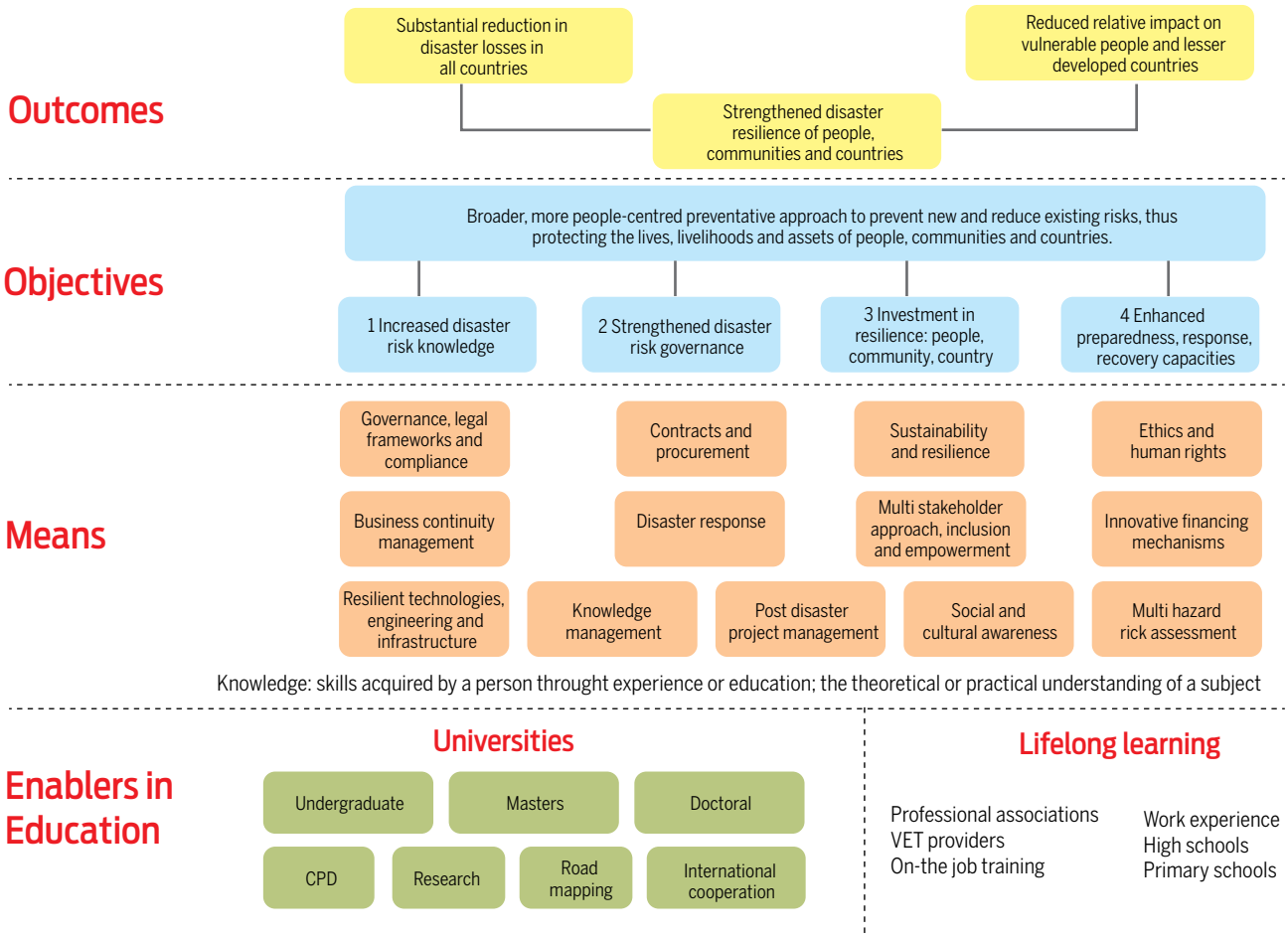

Figure 2

Accordingly, the initial investigation aimed at capturing: the needs of 5 stakeholder groups (local and national government, the community, NGOs, INGOs and other international agencies, academia and research organisations, and the private sector) involved in disaster resilience and management; and current and emerging skills for built environment professionals that could contribute to enhancing societal resilience to disasters across the property cycle (appraisal, brief, concept, development, design, tender, construct, operate and maintain). All needs and skills were categorised into five dimensions of resilience (Social, Economic, Institutional, Environmental, Technological).

Section entitled "MEANS" in the Figure 2 below identifies the Knowledge gaps that were uncovered through investigations – the skills need to be acquired by a person through experience or education and the theoretical or practical understanding in the construction industry to increase societal resilience to disasters. The include : in the construction industry to increase societal resilience to disasters; Disaster response; Contracts and procurement; Governance, legal frameworks and compliance; Post disaster project management; Social and cultural awareness ; Sustainability and resilience; Multi hazard risk assessment; Knowledge management; Ethics and human rights; Multi stakeholder approach, inclusion and empowerment; Business continuity management; and Innovative financial mechanisms. As illustrated in Figure 2, these knowledge gaps are directly linked to the objectives and outcomes of the Sendai Framework for Disaster Risk Reduction.

Work in progress

However, this is still work in progress. Some of the issues the team is currently dealing with include : Are the identified knowledge gaps appropriate?; Terminology? ; Anything missing?; What is the current status of these themes within your own settings?; What is required to address these knowledge gaps?

It is anticipated, by incorporating its finding, CADRE will develop an innovative professional doctoral programme (DProf) that integrates professional and academic knowledge in the construction industry to develop societal resilience to disasters. Through the development of an innovative and timely curricular and learning materials, the project will also seek to update the knowledge and skills of construction professionals thereby to improve the quality and relevance of higher education through active cooperation between Higher Education Institutes and partners from outside academia, including construction professional bodies, local/national/international bodies and social partners.

Disclaimer

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