



University College Dublin
Ireland's Global University

Project Details:	
Host Institution:	University College Dublin (UCD)
Location:	Belfield, Dublin 4, Ireland
College/Company:	College of Engineering & Architecture
School/Unit:	School of Civil Engineering
Website:	http://www.ucd.ie/civileng/

Project Lead:	
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Project Title:

Cold-formed steel (CFS) modular construction subject to progressive collapse loading.

Brief Project Description:

The availability and affordability of adequate residential dwellings presents an economic and social concern in the EU as well as worldwide. For the past decades, countries have consistently missed house-building targets, leading to an increase in prices, which result in homelessness and housing cost overburden. To achieve residential building demands, which cannot be met using traditional construction methods, there is a pressing need for quicker methods of construction such as modular and panelized construction. Despite the benefits of such Modern Methods of Construction, uptake has been low, largely due to lack of: guidelines, reliable connection systems and training. This research project is investigating progressive collapse design of CFS modular construction. Physical laboratory testing is on-going and the proposed researcher will help with the physical tests in the laboratory. Progressive collapse for building structures is characterised by the sequential spread of structural failure upon an initial local failure. Research on the progressive collapse resistance of CFS building structures considering individual structural component interaction is limited in literature and requires further investigation. As a result, there is little understanding of CFS structural resistance to disproportionate collapse under loss of support, highlighted by a lack of testing and numerical modelling.

Project Dates:

From the end of May to August (specific dates and weekly hours can be agreed between the PI and the student directly over a 10-week period).

Candidate Requirements:

Able to do laboratory work.