

Understanding the structural potential for offsite systems

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Summary

Ciaran's industry placement and research project evaluates the structural potential of lightweight steel frames with a view to improving efficiencies for their use in volumetric construction modules in both domestic and commercial environments.

Background

This research will be conducted with a range of partners through CSIC and will also feed into the Built Environment Exchange (beX), a network of students and industry professionals who are passionate about sustainable construction. It is hoped this research will contribute towards innovations in offsite systems' structural design and development for volumetric use.

Challenges

A key issue with using lightweight steel frames in volumetric construction is the limitations the manufacture and erection process can present for architectural features such as large open plan rooms and double height spaces.

Benefits

This project assesses the current protocols and recommends improvements in lightweight steel frame structural design which could inform future developments for offsite design in volumetric construction settings. Increasing the use of offsite systems across volumetric construction settings could help the industry improve productivity, profitability and sustainability overall.



|| *Dr Robert Hairstans, Head of Centre for Offsite Construction & Innovative Structures said: "We know that increasing the use of offsite systems across volumetric construction contexts will be crucial to achieving the industry-wide gains in productivity, profitability and sustainability which we need if we want Scottish construction to prosper. ||*