ARCOM Seminar Series: Construction Cladding Crisis?

The high-profile Grenfell tower disaster resulted from cascading systemic failings. While flammable cladding was an immediate cause of the disaster, there were other contributing causes relating to industry policy and practice. The ARCOM Seminar Series: "Construction Cladding Crisis?" considered these deeper-rooted elements to instigate further discussion, debate and research that can push the academic community to prevent, inform and warn of future potential crisis and disaster in the built environment.

The seminars took place at two locations. The first at the Royal Melbourne Institute of Technology (Australia; 3 November 2022), and the other at the University of Twente (the Netherlands; 27 June 2023).

The seminar hosted in Melbourne attracted local, interstate, and international academics: Prof. Steve Rowlinson (Hong Kong University/Bond University), Prof. Jan Hayes (RMIT University), Assoc. Prof Rebecca Leshinsky (RMIT University), Dr. Laura Crommelin (UNSW), Dr. Kate Nguyen (RMIT University), Dr. Nicole Cook (University of Wollongong), Dr. Liz Taylor (Monash University), and co-hosts, Dr. Trivess Moore and Dr. David Oswald (both RMIT University).

The Melbourne seminar discussed extensively the indirect financial, health, and wellbeing consequences of building defects on the building occupants and questioned how and why the responsibility for rectification of defects – such as flammable cladding repairs – is pushed to consumers rather than the industry that caused the problem. Zooming out from the level of individual occupant to the construction industry, other questions explored how material waste from defect repair campaigns (such as flammable cladding replacement) can be recycled responsibly. The second part of the session focussed on how, what information, guidance and protection should be given to building owners when it comes to quality control, in which consumers currently have limited protection. Parallels from safety culture and systems were drawn to conclude that implementation of these in construction is a real challenge as the sector is influenced by many different values, financial drivers, responsibilities, and pressures.

Closure discussion of the Twente seminar with Dr. Simon Smith (online), Prof. Paul Chan, Prof. André Dorée, Dr. Margreet Spoelstra, Klaas Winters, Dr. Léon olde Scholtenhuis and Prof. Em. Joop Halman

The Twente seminar included professionals in building and pipeline safety (Dr. Margreet Spoelstra from the Netherlands Institute of Public Safety and Mr. Klaas Winters from the Dutch Pipeline Owners' Association VELIN), and the researchers Prof. Luke Bisby and Dr. Simon Smith (University of Edinburgh), Prof. Paul Chan (Delft University of Technology), Prof. André Doré, Prof. Em. Joop Halman and the host Dr. Léon olde Scholtenhuis (University of Twente).

The Twente seminar explored systems-level issues and future concerns for the built environment. The seminar started looking backward at cases such as Ronan Point and those defects arising from large scale industrialized housing projects. It addressed how production pressures, technical uncertainties, innovation and (de)regulation fulfilled an urgent post-war demand for housing, but also that defects and crises could have been avoided should competent and ethical supervisors have been better supported as they observe and deliver improved building quality. The seminar further advanced the discussion by relating failures to market dynamics such as contractors' over-promising, and the influences that product and price competition have on opportunism, cutting corners, and unsafe behaviour. In the future, the sector needs to be mindful of such systemic vulnerabilities of the sector. Already new types of safety risks are emerging as rapid upscaling of new technologies takes place: industrialized renovation (and insulation), (flammable) PV panels; and electric vehicle parking garages (facing fire and explosion risks due thermal runaway of batteries and hydrogen) are examples of these.

The seminars embraced the view that a systemic perspective should be further developed, defined and applied in research methodologies for studies of defects, dangers, and incidents. Single points of failure of incidents seldom exist, and while regulations and codes for engineers are needed, they also direct over-simplifications and normalization, which may lead to the assumptions that 'good' technical regulations alone avoid incidents.

Safety is diverse and not easily controllable. Individual risk perceptions, the site workers' improvisation under work pressures, and the roles that clients need to take in supporting building quality and safety are key. Future research may centre on the key question how the various layers and interfaces that lead up to public failure of built assets can be studied from a methodological viewpoint; how a qualitative approach may enrich the field; and, how research on projects change their focus away from solely productivity and consider systemic intertwinedness of the dimensions of safety, quality, time and well-being. These experiences should also come from 'within the system'. To make impact, ARCOMmers hence need to be exposing themselves more to daily issues and concerns in the field and at offices.

Besides the excellent discussions, and future research questions, one main take away from both seminars is that the systemic elements should be brought more to the fore in CM studies as this influences the safety of decisions made during design, safe behaviour onsite, and undesirable practices such as phoenixing and risk-shifting. Practitioners argued that CM researchers and policy makers needed to deliberate what new types of risks are emerging, which of them are acceptable, and how they can be included more systematically in design .

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