

Collaboration in the Detailed Design Phase of Construction Projects – A study of Interdisciplinary Teams

The detailed design phase of construction is critical, as it involves key decisions to transform the conceptual design into construction documents. It requires input from contractors, architects, and project managers, whose diverse expertise can improve client value but also create collaboration challenges due to differing perspectives. This research explored interdisciplinary collaboration and provided differing perspectives. This research explored interdisciplinary collaboration and provided insights to help organisations enhance collaboration in these environments.

Why the study is relevant:

- In large-scale construction projects, finalising design documents during the detailed design phase can take over a year, challenging participants to maintain collaboration and exchange technical knowledge constructively. Managing interdisciplinary teams is particularly challenging as contractors focus on cost and scheduling, conflicting with the iterative nature of architects' work.
- The research adopted a practice-based, inter-organisational theoretical lens to systematically examine collaboration phases, distinguishing between antecedents, processes, and outcomes. It identified key process and social-reaction factors critical to successful collaboration and proposed management approaches to address collaboration challenges.

What we did:

- The study used non-participant observations, collaboration scores, and interviews to explore how participants perceived collaboration during detailed design meetings on two large-scale Australian construction projects. Adopting a longitudinal case study approach with replication logic, it compared interdisciplinary collaboration across two cases within the same educational building project to minimise external variables.

What we achieved:

- The research developed the integrated detailed design collaboration model as a practical tool for design and construction firms to assess team performance, predict collaboration outcomes, and strengthen the management of interdisciplinary design meetings, helping to enhance the detailed design phase.
- The research identified a range of collaboration process and social-reaction factors that are thought to be relevant to managing collaboration in the detailed design phase, for example: dyadic relationships as a catalyst, centralised control of information flow, unclear assignment of cost responsibilities, differing frames and signs of impending tension.