

# RP 3015 AEC SOCIO-CULTURAL ACTIVITY & DIGITAL TECHNOLOGY

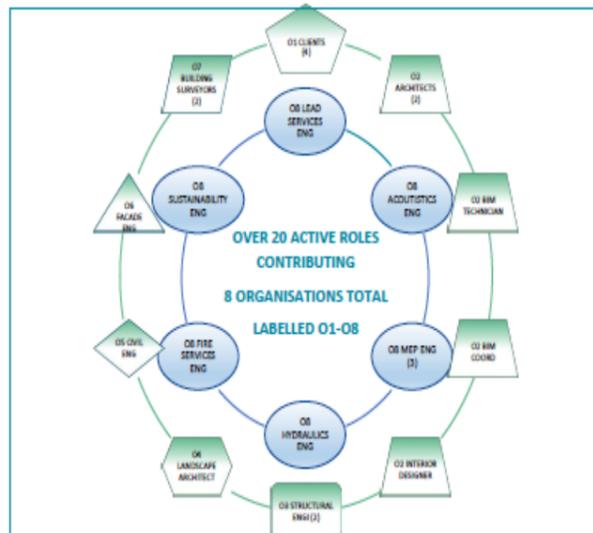
## RESEARCH QUESTION

**How does an Australian inter-organisational architecture, engineering and construction (AEC) project team use technology to inform socio-cultural activities and make decisions across professional boundaries?**

### Round Table Project Team

The project team diagram, displayed in Figure 1 includes 8 organisations and 20+ roles, to signify the diversity and complexity of the group.

Figure 1: Project team 'round table'



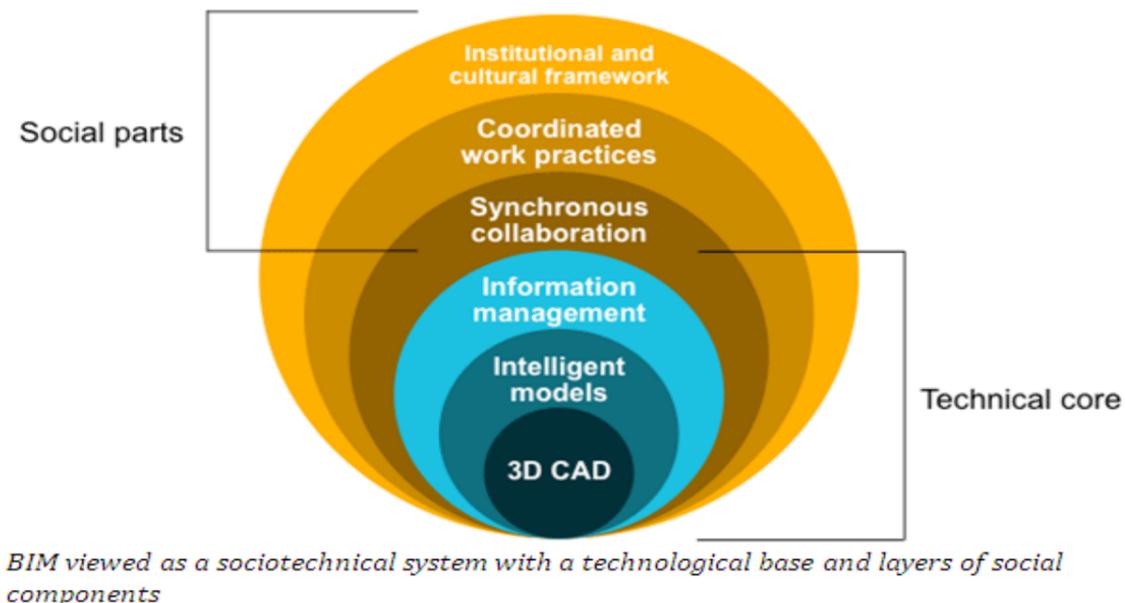
## RESEARCH METHODOLOGY

**Ethnographic methods** (participant observation in a natural setting) are used to gather in-depth qualitative data from collaborative group activities (in-situ) during the design development and construction documentation phases of a building project. Informal interviews, project documentation, models, and simulations are also collected to gather a holistic understanding.

**Aim: To explore the decision making activities of an AEC project team mediated by digital technology during the design of a large building development.**

This research investigates the socio-cultural aspects, Figure 2 in gold, of an AEC project team and mediating digital technological tools. Digital technologies (i.e. building information modelling, computational assessment, simulations, renderings, etc.) enable a shared understanding to inform discussions and analysis to facilitate decision making activities across disciplinary boundaries.

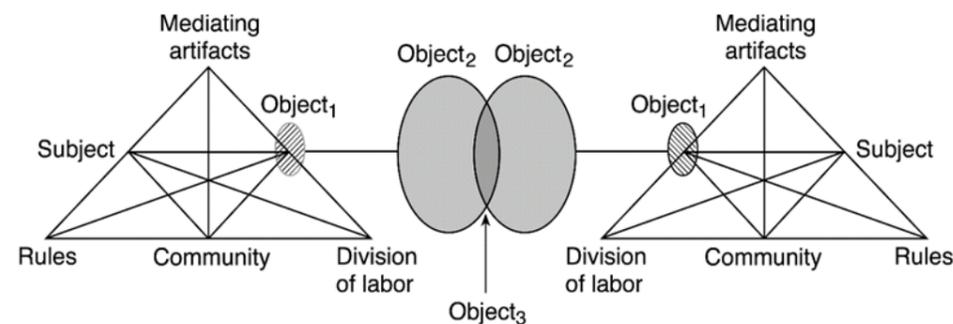
Figure 2: A socio-technical view of building information modelling (image source: WPS Group, 2015)



**Cultural historical activity theory, Figure 3, will inform the data analysis using activity as the unit of analysis.**

This method is relevant because these activities inform the opportunities that shape the project outcomes through multiple stages of social interaction, mediated by technology, based on collective goals, knowledge, past experiences and accepted professional and project based practices.

Figure 3: CHAT Analysis Model (image source: Engeström, 2001)



## RESULTS

**Empirically grounded insight into an Australian AEC project team, based on situated, historical and cultural activities.** The results will offer an in-depth, contextualised understanding of the roles, implicit and explicit practices, technological tools and underpinning culture of collaboration within a natural setting.

Data collection concludes in 2016.

Analysis and outcomes released in 2017.

## ANTICIPATED IMPACTS

Digital technologies coupled with open dialogue enable a team to collaboratively assess key aspects contributing to building performance by modelling the available options to inform decisions across disciplinary boundaries using shared objects.

**By gaining an in-depth understanding of the roles, collaborative methods, shared artefacts (tools and technology), and shared meanings of an AEC team in a natural context, we will gain a better understanding of characteristics of design and construction activities to thereby inform support tools, learning interventions, & further research.**

## CONTACT

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**RP3015 MOBILE LEARNING**