Concurrent Session B
Monday 12 September 2016
11:45am – 12:35pm

Session 3
Opportunity – Adopting BIM on significant construction projects

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Andrew is an advocate for the appropriate implementation of virtual design and construction techniques that not only broaden creative opportunities, but streamline the construction processes and support key outcomes for end users. Directly and indirectly involved implementing BIM protocols for three large-scale ($80m+), complex projects, leveraging BIM to support the design, construction and operational requirements: Wellington (VUW Gateway Building), Auckland (Commercial Bay) and Christchurch (the Justice Precinct).

BIM tools are being used to improve stakeholder understanding of the scope of these projects and to manage technically complex and constrained geometries. These projects have highlighted BIM lessons to be learned regarding planning for success by playing to the strengths and understanding the limitations of the NZ construction industry supply chain.

Satish is an experienced professional in campus development. He is an outstanding program manager with impressive capabilities in value management and alignment of design with business requirements. He has led strategic projects at Victoria that have transformed the campus and placed the institution at the forefront of developments within the sector. To that end he is very interested in innovative ways for the delivery of projects and how technology is influencing the process for the best come

The presentation will explore the opportunities and practical considerations to learn from in relation to adopting BIM on the School of Biological Sciences at Victoria University. The project consists of a new 12,500m2 building at the University's Kelburn Campus. The mixed function building accommodates research and teaching labs, an animal facility, general teaching spaces as well as informal learning and circulation spaces and is intended to support Victoria's ongoing development of a high quality spaces to support the changing pedagogical environment.

From the project's outset in 2012, Victoria recognised the potential value in adopting BIM to structure the information that is developed about the facility through its project lifecycle: from design, construction, commissioning and ultimately the building's operation. Although still in the construction phase, the benefits thus far and opportunities to improve, are evident including: significant site limitations, clarifying the scope and staging within an operational environment, and developing a complex building services design within tight ceiling void parameters. The requirements for the ongoing Facilities Management and Asset Management has been an important driver of the project; yet the construction industry, design software vendors included, does not currently have a consistent and coherent approach to delivering useable, validated and robust asset information. Through this project we have gained an insight into the practical requirements around what information is preferred for a built project, in what format and how it can be obtained.

During the design phase, consultants were required to utilise BIM alongside the traditional 2D documentation processes to facilitate communication and coordinated documentation in order to reduce variations on site. BIM's power as a collaboration tool was utilised during the procurement

phase, allowing respondents to interrogate the design prior to submitting their tenders. This in turn provided greater clarity about the scope and complexity of the project and contributed to a narrower spread between sub-trade tenders. The Main Contractor, Fletcher Construction, has incorporated BIM processes into their construction phase, using BIM as a coordination and stakeholder engagement tool and also to inform sequencing, set-outs on site and fabrication of the structural steel. The Main Contractor's final deliverables include a LOD500 model for key trades and complex interfaces on site, which will provide Victoria with a reliable resource on completion for use in Facilities Management. Traditional 2D information and structured data will be extracted from the BIM models in order to integrate with the University's Facilities Management and Asset Management databases.

The opportunities afforded by BIM on this project have been balanced with the challenge of implementing a new and innovative technology. Since the inception of this project in early 2012 until now, the maturity and capability of NZ's construction industry in regard to BIM has progressed rapidly, from informal use to implementation on some new developments recognised as leading international practices. This project provides an insight into the strategies that clients and project teams consider in order to adopt changing systems and processes, and we trust, provides practical learnings for future projects to grow from. Overall there has been a considerable rise in the level of collaboration between the consultants, contractor and specialist trades. However, we observed that the collaborative nature of BIM still requires a structured framework to be established, early on, with common protocols and deliverables agreed. Traditional roles, responsibilities and the behaviours are challenged by BIM processes, and this project has encountered (and overcome) many of the challenges posed by the 'growing pains' of BIM.