



ENGINEERS
AUSTRALIA

Att: Mark Tierney
Director, Infrastructure Portfolio Management
Department of Infrastructure, Local Government and Planning
Level 12, 1 William Street
Brisbane QLD 4000

Via email: infrastructurepolicy@dilgp.qld.gov.au

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Dear Mark

Building Information Modelling – draft policy and principles

Engineers Australia and its members have an interest in improving the effectiveness and efficiency in the planning, construction and ongoing management of the states assets. We applaud the government in taking the first step towards implementation of a policy to gain the maximum advantage of digital engineering. We are pleased to offer the following submission for your consideration in regards to the *Building Information Modelling – draft policy and principles*.

About Engineers Australia

Engineers Australia is the peak body for the engineering profession. We are a member-based professional association with over 100,000 individual members. Established in 1919, Engineers Australia is a not-for-profit organisation, constituted by Royal Charter to advance the science and practice of engineering for the benefit of the community.

Specific document feedback:

Scope

Should “State Infrastructure Assets” be more clearly defined? Local Governments (LG) exist by Act of Parliament. Consequently Local Government infrastructure may be considered 'state' depending on the viewpoint?

Engineers Australia recommends including a broader range of examples of both vertical and linear infrastructure. Possible additions to the examples could include: pipelines, underground/submerged structures, tunnels, reservoirs, treatment plants, pumping stations. Should define what are "smaller" new projects?

Objectives

The objectives could also include reference to promotion of cooperation, alignment and support from other stakeholders external to the public sector (including public, clients, industry and academia) through the use of BIM.

The objectives include improving capacity and capability to maximise value. Improved quality could also be listed separately as an objective. Quality and traceability throughout the design phase can translate into savings during the operational phase of any project (asset management), which should be a clear objective for the state.

Audience and Application

Engineers Australia recommends broadening the audience for this document beyond the public sector. Industry and academia should also be included. The state agencies may be the targeted end user of policies and principles but the 'Audience' should be broader to include the entire infrastructure delivery supply chain, along with those who will be educating the supply chain in the use of BIM.

Principles

Engineers Australia recommends including 'Aligned' as a principle. It is common knowledge that different councils and state agencies, although governed by the same state policies, have different expectations/requirements when dealing with approvals for new developments.

The use of BIM should be aligned across all agencies, regardless of size, budget limitations, etc., so that all stakeholders can easily operate/transfer their capability across all of Queensland.

Open

Engineers Australia supports an Open BIM platform. However, acknowledge that Open BIM is far from perfect. The development of open systems process and procedures may create 'grey areas' among some agencies and service providers. These 'grey areas' can possibly bring inefficiencies, delays, increased costs, etc., in the implementation of BIM during the project delivery stage of specific projects.

During the development of the processes and procedures, that will be needed to ensure successful implementation, open discussions and forums with all stakeholders will be essential to gather feedback and lessons learnt in previous projects not only in Australia but overseas. Engineers Australia welcomes the opportunity to contribute to these conversations.

Managed

It is essential that both design change data and as-built data are progressively collected and stored. Appropriate data security processes will need to be applied to the storage and retrieval and accessibility of this information. Access will be required by multiple stakeholders to both prepare and update as-built drawings. Industry experience has shown that once the construction phase is complete, the difficulty in accessing the data can reduce the overall value that can be gained via the collaborative digital process. Contractors, designers and asset management personnel often end up using traditional as-built drawings (redlined) to carry out maintenance/upgrades to the asset simply because it is 'easier' to access and use, thereby demanding an additional digital data transfer process. However, this practice is not desirable and would not result in meeting the long-term objectives of the policy.

Effective

Engineers Australia supports collaboration with all jurisdictions and the private sector noted in this section. We recommend considering progressive evaluation on the impact of BIM implementation across all tiers of suppliers. Competitiveness across the industry will need to be maintained to guarantee the 'effective' implementation of BIM. It will be important to ensure that appropriate skills are developed and appropriate hardware/software is available in remote and regional Queensland and across all size of organisations. Potential benefits will be reduced if only medium to top tier suppliers are able to implement BIM in project delivery. It will be essential to focus on the continual up-skilling of the entire supply chain.

The NATSPEC National BIM Guide will need to be regularly reviewed to ensure it captures the most up to date information. Fully federated model scheduling is also supported. Cost and time are essential inclusions to realise the full benefits of BIM through asset delivery and management.

Supported

It is essential that expertise and capability be progressively developed. Engineers Australia remains concerned about the historical deskilling in the public sector. While there has been a long term trend to outsource engineering services rather than deliver such services within government agencies, it is important the government retains the necessary engineering capability. Engineering capability is essential in order to be an informed buyer of engineering services, including assets delivered using

digital engineering, as well as maintaining an appropriate skill level required for the necessary maintenance of assets throughout their life cycle.

The inclusion of the Centre of Excellence for training and skilling of BIM users is supported. Accreditations or certifications on BIM may be useful to ensure quality, generate visibility and awareness across the industry and could be delivered via the Centre of Excellence.

Coordination with professional bodies (such as Engineers Australia, The Australian Institute of Architects and Australian Institute of Quantity Surveyors) to develop frameworks/plans to support the implementation of BIM across all stakeholders should be considered.

Implementation

Pilot projects should be able to test all aspects of BIM implementation across the project lifecycle. Is there a list of current and future pilot projects? What are the criteria for selecting pilot projects? How will the lessons learnt from pilot projects be shared with all stakeholders to ensure the continual upskilling and benefits for future projects?

Consideration should be given to the inclusion of reviewing and evaluating lessons learnt from other countries and regions regarding implementation of BIM. This can be incorporated into the learnings from pilot projects in Queensland so that the BIM Working Group can have a more robust baseline for the development of final policies and plans.

We would also recommend including a reference to the process and procedures for the use and management of the As build BIM model.

Conclusion

This submission has been prepared by Engineers Australia with support from representatives from a number of the organisation's technical and regional groups.

Engineers contribute significantly to the community in the regulation, planning, design, construction, maintenance, operation, monitoring, management and assessment of resources and infrastructure. Engineers provide these services while meeting clear ethical responsibilities to the Australian community.

Engineers Australia supports the introduction of BIM policy and guidelines and see it as a first step towards enabling BIM on the full lifecycle of state infrastructure assets by 2023. We look forward to working collaboratively with government and would welcome the opportunity to provide further input and contribute to the discussion as this progresses.

Yours sincerely



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