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Inquiry into Public Infrastructure  
Productivity Commission  
LB2 Collins Street East  
Melbourne VIC 8003

Via email: [infrastructure@pc.gov.au](mailto:infrastructure@pc.gov.au)

Dear Productivity Commission,

buildingSMART Australasia (bSA) welcomes the opportunity to provide a submission in relation to the Commission's inquiry into Public Infrastructure. Specifically, bSA is pleased to have the opportunity to respond to a number of items raised in the Commission's Draft Report which was released on 13 March 2014.

We provide below a brief overview of the points bSA wishes to make in response to the Commission's Draft Report. bSA looks forward to providing a verbal submission to the inquiry as part of its public hearings to be held in Sydney on 14 April 2014, where each of these points will be discussed and expanded on in greater detail.

At that time, bSA also looks forward to the opportunity to answer any questions the Commission may have in relation to the points outlined below.

### **buildingSMART Australasia and the National BIM Initiative**

bSA is constituted of organisations committed to seeing BIM introduced into Australia.

bSA's vision and mission is to serve the needs of stakeholders in collaboration with the Australasian Procurement and Construction Council (APCC) and the Australian Construction Industry Forum (ACIF).

The overriding objective of bSA is that we want to produce much better buildings - buildings that the community values, that meet real needs, that perform better, that impact the environment less, that take less time and money to build and to use. The adoption of BIM is a critical part of that broad objective.

Our members are drawn from across the industry, including:

- building owners and developers (both government and private)
- architects, engineers, and related design, planning, and authority professionals
- builders, sub-contractors, product and materials suppliers
- related service providers.

bSA is a chapter of buildingSMART International, an international organisation and worldwide alliance driving the development of open internationally recognised standards (e.g. ISO 16739:2013, *Industry Foundation Classes for data sharing in the construction and facility management industries*), tools and training to support the wider use of BIM in the architecture, engineering, construction and facilities management industries.

bSA has previously received recognition and support from the Commonwealth Government in its efforts to promote BIM across the country. In 2012, bSA received funding from the Commonwealth Government's Department of Industry, Innovation, Science Research and Tertiary Education to develop a two-volume report, the *National Building Information Modelling (BIM) Initiative Report*. This strategic report outlined the support needed to drive the construction industry into a new efficient, low carbon era of BIM and specifies a strategy for the focussed adoption of BIM, and related digital technologies and processes, for the Australian built environment sector. A copy of Volume I of the National BIM Initiative report is attached.

### **Draft Productivity Commission report**

bSA appreciates and endorses the general approach in the Commission's draft report. However, we take this opportunity to outline some concerns regarding the Commission's descriptions and discussion of BIM, the identification of potential roadblocks to its adoption and lack of focus on the potential benefits it has for Australia. It should be noted that increasingly, BIM is not seen as just a technology for building procurement, but is also seen as a key technology for the procurement and management of major civil infrastructure projects such as roads and bridges. For example, Egis International, the largest infrastructure developer in Europe, has initiated a 3-year program to incorporate BIM technology into its processes by 2016.

bSA seeks to highlight four issues regarding BIM and the Commission's draft report:

1. The benefits of incorporating and adopting BIM on a broader scale, for all industry players and relevant stakeholders including Government
2. Responses and rebuttals to the various 'impediments to adoption' outlined in the Commission's draft report and arguments concerning its limitations.
3. The consequences and implications of not facilitating a broader acceptance and adoption of BIM, particularly in light of progress in other nations.

4. The fact that other nations around the world provide a framework, guidance and lessons learned for Australia, including the need for Government involvement.

Governments across Australia already regulate the adoption of BIM through the promulgation and adoption of various BIM standards. Major infrastructure EOs frequently require compliance with certain BIM standards. This is commonly a feature of defence and hospital projects, and frequently with major transport (eg. North West Rail link in NSW) and Stadia (eg new Perth stadium) projects. Governments see the long-term advantages – especially in maintenance and operations of ‘doing the project right at the beginning’.

bSA believes that the inconsistencies in definition and guidelines represents a significant risk and a present, real danger to the successful adoption of BIM across Australia and therefore weakens the potential for enhanced efficiency and diffusion of knowledge across the construction and infrastructure industries. Therefore, bSA recommends that the Productivity Commission recommend that the issue of common definitions and guidelines be referred to the Commonwealth and State and Territory Governments for resolution.

As we will outline in greater detail in our verbal submission to the Commission, we suggest appropriate nuancing of the Commission’s draft recommendation, to provide that while the market determines arrangements for best practice in application of BIM during design and construction, the Government should mandate the information it requires to efficiently and effectively manage, operate and maintain its buildings and other public infrastructure. bSA believes that the Commission’s recommendation should endorse the *National BIM Initiative* as a framework for action to foster greater adoption of BIM, including its recommendations regarding Government mandates.

### ***1. BIM provides significant benefits***

bSA is of the view that the Commission’s draft report focuses on possible impediments to the adoption of BIM but does not adequately provide an analysis or discussion of the significant benefits it can provide. BIM is a technological innovation in the construction industry, which has been adopted by numerous governments across the world.

The adoption of BIM by industry permits clients and contractors to rehearse the construction of buildings on a computer before it is built. The benefits that this can lead to are far reaching, and extend not only to each and every stakeholder involved in the design, construction and maintenance of a building, but also to those who commission the work and ultimately manage and use the building. As a significant player in the construction of new facilities for public use, the benefits to Government from using of BIM in buildings that it commissions will be dramatic. By mandating BIM, the construction industry will be able to offer the Commonwealth certainty of project spend and drive significant savings for asset acquisition.

As outlined in the Commission's draft report, proponents of BIM have outlined a number of benefits that it can provide. To the list set out in the Commission's draft report on pages 382 and 383, we would add:

- The ability to offer clients greater certainty of project funding
- Significantly reduced project risk
- Improvements to stakeholder communications
- Reducing material waste and providing more efficient design from an energy consumption perspective
- The ability to make higher standards more affordable by cutting costs
- The ability to offer the Commonwealth a more efficient and effective use of public funds

bSA representatives can speak to each of these benefits in far greater detail during its verbal submission.

Just last week McGraw Hill Construction released the results of a survey regarding Australia and New Zealand business attitudes towards BIM. According to the survey, users of BIM are positive of the business value it offers with only 2 per cent of BIM users believing they were extracting no value from the BIM. Only 7 per cent believed they are getting everything out of BIM it can provide, indicating that the value of BIM to businesses is expected to increase in the future.

The McGraw Hill survey also includes reports on the benefits of BIM over both short and long term. Short term benefits included higher accuracy of work, better reputation for the business, the provision of new business opportunities for collaboration and the offer of new services to the business. In the long term, benefits of BIM usage included reduced project duration, links to repeat business, reductions of construction costs, sustainable profit margins, and increases in safety of projects. Overall, BIM users found a range of benefits which allowed them to achieve higher standards of work in a more efficient way.<sup>1</sup>

The automotive industry has been using similar techniques for over 30 years to drive efficiency in a highly competitive market. Now the construction industry is able to benefit in the same way.

## **2. Responses and rebuttals to the various 'impediments to adoption' outlined in the Commission's draft report and arguments concerning its limitations.**

bSA wishes to respond to the 'impediments to adoption' noted in the Commission's draft report. In bSA's view the 'impediments' outlined should be considered fears rather than well documented facts.

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<sup>1</sup> McGraw Hill Construction, *The Business Value of BIM in Australia and New Zealand*, 2014, p. 19.

The *National BIM Initiative* and a 2010 report by the Allen Consulting Group entitled *Productivity in The Buildings Network: Assessing the Impacts of Building Information Models* outline arguments rebutting the noted 'impediments', which bSA will present to the Commission in greater detail during its verbal submission.

**3. *There is a need to facilitate greater adoption of BIM, especially when compared with other nations***

bSA wishes to provide information to the Commission during its verbal submission, summarised briefly below, regarding the risks to Australia of falling behind in its implementation of BIM, particularly in relation to other countries. Put simply, Australia is being outflanked by other nations in terms BIM and we risk slipping in international competitiveness as a consequence.

BIM is being used by governments across the developed world, including Korea, the United States of America and a number of Scandinavian Countries. The European Union recently passed a European Union Public Procurement Directive meaning that all 28 member countries will encourage, specify or mandate the use of BIM for publicly funded building and construction projects in the European Union by 2016. If we do not pursue BIM in Australia now, foreign investors will, and Australia will lose a valuable opportunity. Equally, BIM has the potential to become a valuable export for Australia.

Most of the developing world needs to import design and some construction services for its major projects – this is a significant opportunity. Emerging economies such as India and China are investing significantly in infrastructure projects. For example, India will be spending \$1.3trillion US over the next 5-10 years in the Delhi/Mumbai Industrial Corridor alone. By investing in BIM now, Australians will gain the skills that put them ahead of the curve, preparing Australia for a future in which BIM will be used worldwide and allowing the export of these skills.

**4. *Other nations around the world provide a framework, guidance and lessons learned for Australia, including the need for Government involvement.***

In the Western world there is already a leader and great advocate in the use of BIM in the Government of the United Kingdom. Their approach to BIM provides considerable lessons and positive outcomes for the Australian Government to learn from and take into account in the development of its procurement, construction and asset management policy making. There are many examples of specific projects from the UK which show the significant benefits that BIM can provide in terms of innovation, productivity and cost reduction.

By 2016 BIM will be mandatory on all public sector infrastructure projects in the UK. The Government's aim is to reduce costs of UK Government construction projects by 15-20%, and then reinvest these cost reductions in further Government projects, supporting economic growth.

Additionally, in July 2011 the UK Government launched a BIM Strategy and accompanying Action Plan, which set out a range of activities the Government is undertaking to reform industry practice, reduce waste and drive better value from its procurement of public assets. There has already been excellent progress in the UK to date, which bSA will expand on.

As bSA will speak to in the verbal submission in greater detail, the UK is a leader in the use of BIM, and its influence has been largely the result of Government mandates.

The UK provided an incentive and a timeline to adopt their practices. bSA argues that in Australia, the promotion of BIM similarly requires coordination from Government and for Government to play the role of champion for industry by demonstrating leadership in the uptake of BIM in its procurement processes. Industry is slowly moving towards the usage of BIM in building design, construction and facilities management, but support from the Government will ensure that the adoption of BIM is achieved faster, and achieved appropriately.

There are hundreds of different building information models being built, each for a specific purpose. Support from the Government is required so that the roll out of BIM is accompanied by unified standards across the Australian Commonwealth, States and Territories. Importantly, it is also about these standards being set by Government in collaboration with industry to maximise competition in the property, building and construction markets and maximise the effective use of public funds.

## **Summary**

In summary, bSA believes that the *National BIM Initiative* report provides the necessary roadmap towards providing value for money outcomes for building and infrastructure clients, financiers and end users.

bSA looks forward to the opportunity to expand on these points and provide further information to the Commission in its verbal submission on 14 April 2014.

Yours sincerely



Wayne Eastley  
Chairman and Secretary  
buildingSMART Australasia