# Guides and Specs

## AIA and Consult Australia - BIM and IPD

In 2011 the Australian Institute of Architects and Consult Australia formed a BIM and IPD Steering Group, bringing together leading experts in architecture, engineering and construction. The group's main objective is to provide support to the industry and develop documentation to guide practitioners in Australia in the application of BIM and IPD. It expands on the discussions and findings from the BIM in Australia 2010 report to provide a wider range of guidance and resources to practitioners across Australia who are working to implement IPD through BIM. In 2011 the Steering Group formed four working groups who are tasked with producing resources and materials which will be updated and published to the dedicated website at http://www.bim.architecture.com.au/.

Download the AIA and Consult Australia's first collection of "BIM in Practice" documents which were released in August 2012.

## ACIF & APCC Guides

The release of ACIF and APCC's document 'A Framework for the Adoption of Project Team Integration & BIM' in early December 2014 gave us a solid background of the BIM landscape in Australia and New Zealand, pointing out the problems and challenges within industry, ie. government agenda versus supplier agenda. However what it lacked were solutions for whole of industry to progress BIM take up and a meaningful commitment to change the way we work on a large scale in Australia.

On the 26th June 2015, the ACIF and APCC jointly released their most recent companion document to the Framework, entitled 'Building and Construction Procurement Guide: Project Team Integration and Building Information Modelling (BIM)'. The aim of the guide is to assist industry stakeholders in their adoption and implementation of PTI and BIM through comprehensive instructions and guiding principles for each procurement model, how to tender and select the right BIM team and how to manage the project using BIM at the outset.

Read our blog post for more on these documents here.

## US Army Corp of Engineers

The US Army Corp of Engineers 'BIM Minimum Modeling Matrix' enables a project-specific plan to be developed with input from the client. The 'Scope-LOD-Grade' worksheet allows you to modify 'Project Scope' columns based on what elements are included in that scope. Furthermore you can define at which LOD they will be delivered, the way in which this information will be exchanged and who they will be delivered by.

## Royal Institute of British Architects

Similarly to Modeling Matrix from US Army Corp of Engineers, the Royal Institute of British Architects have recently released their 'Plan of Work' document which contains a 'Design Responsibility Matrix' that allows you to consider the roles that are required at each stage of a project and who is best placed to undertake them, along with the core decisions on how and when each team will be engaged through the 7 project phases (1. Preparation and brief, 2. Concept design, 3. Developed Design, 4. Technical Design, 5. Construction, 6. Handover and Close Out, 7. In Use).

Both documents are simple and adaptable that once completed provide you with clear information that is presented in a way that all teams within the project can comprehend. From a consultants perspective these tools are useful to define what you are offering when you do a fee quotation. Additionally, from a project level, they're extremely useful to manage the teams that are involved at the project at different times and project phases and for different deliverables.

## VA BIM Guide

In the financial year 2009 the U.S. Department of Veterans Affairs (VA) Office of Construction & Facilities Management (CFM) issued instructions that Industry Foundation Classes (IFC)-compliant BIM authoring tools be used as the design software for all major construction and renovation projects over $10M. This initiative applies to design and construction by the architects, engineers, other consultants, and contractors. The VA BIM Guide can be found at: http://www.cfm.va.gov/til/bim/BIMGuide/

The VA BIM Guide is an excellent example of a fully implemented BIM Guide because it provides a clear project plan and addresses in detail contracts, responsibilities, deliverables, data ownership and the expectations of VA.

## NATSPEC National BIM Guide

Building on the VA BIM Guide, Australia's NATSPEC developed the NATSPEC National BIM Guide and accompanying Project BIM Brief in September 2011 with the objective to clarify what is meant when BIM is required on a project. It is said that too often a Client talks about wanting BIM on a project without the ability to clarify the requirements in a consistent manner.

The key BIM Guide to focus on in Australia is NATSPEC. It's comprehensive and is largely backed by the majority of industry which provides a continuous improvement process as it develops as a robust standard.

Supplementary documents include the NATSPEC BIM Reference Schedule and NATSPEC BIM Object/Element Matrix which are to be updated, as required, to reflect the developing BIM industry – internationally and locally.

These documents and the related NATSPEC BIM Management Plan Template are available free of charge from www.natspec.com.au. Click on the 'NATSPEC BIM' logo, which will take you to the NATSPEC BIM Portal. Links to the documents are included in the articles on the homepage.

## BIMForum - LOD Specification

The LOD Specification from the BIMForum is a very worthy guide to consider. Released in March 2013 it defines model use, usability and limitations for downstream users. It also looks at the detail of what it is that you're designing and what it can be used for. The 2015 version is currently available for public review at this link.

The BIMForum's mission is to facilitate and accelerate the adoption of building information modeling (BIM) in the AEC industry. View more information on the BIM Forum and LOD Specification

## Autodesk BIM Deployment Plan

Autodesk has created the Autodesk BIM Deployment Plan. It offers tools and guidance for building industry professionals interested in implementing BIM. These tools provide a practical framework for AEC stakeholders, and can be used by individual organisations on specific projects. http://usa.autodesk.com/adsk/servlet/item?id=14652957&siteID=123112

The Autodesk BIM Deployment Plan includes a great tool for specifying who is responsible for modelling each object and to what LOD. The plan also includes:

- BIM support materials for owners, architects, engineers, and contractors

- Templates to streamline multi-discipline communications

- Recommendations for roles and responsibilities

- Best business process examples

- Software suggestions for an effective BIM environment

- BIM Library

A great library of documents, reports, guidelines, roadmaps, white papers, articles and BIM tools that relate to BIM can be found at the Whole Building Design Guide website. It also contains links to other initiatives by industry in the United States and that of the National Institute of Building.

Follow the link http://www.wbdg.org/bim/bim_libraries.php and click on a square from the Design Procure Assemble Operate icon for each topic's associated resources.

## National BIM Standard – United States

The NBIMS-US Project Committee (the National Building Information Model Standard Project Committee - United States), is a project committee of the buildingSMART alliance which is a council of the National Institute for Building Sciences (NIBS). The first version of the National BIM Standard, Version 1, Part 1, was issued in December 18, 2007. A significant body of knowledge has been developed based on that document and Version 2 can be downloaded at: http://www.buildingsmartalliance.org/index.php/nbims/

## IU BIM Standards & Project Delivery Requirements

The Indiana University Architect's Office issued IU BIM (Building Information Modeling) Standards and Project Delivery Requirements for its capital projects ($5 million and over) on Sept 10th, 2009 with a target implementation date of October 1st, 2009. Links to a collection of BIM and IPD resources for general reference can be found at: http://www.indiana.edu/~uao/iubim.html

## COBie Guide

The Construction-Operations Building information exchange (COBie), is the United States standard for the exchange of information related to manage building assets. COBie sets the format for asset information but it does not provide details on what information is to be provided when, and by whom.

The National Institute of Building Sciences, buildingSMART alliance is calling for public comment on the draft COBie guide which was released on 2 July 2012. After close of the review period on 2 October 2012 the guide will be updated based on consensus feedback and then submitted as a "best practice" ballot to NBIMS Version 3.

The guide is intended to be referenced in the owners design and construction contracts so that the format and content of COBie deliverables are properly specified. COBie does not add new requirements to contracts; it simply changes the required deliverables from paper documents, or proprietary electronic formats, to an open, United States standard format. COBie and the guide which comprises two parts (common requirements to be met and a set of owner-specific requirements) have been drafted as performance-based specifications for the delivery of building information.

The draft COBie Guide can be downloaded and commented upon at http://forums.buildingsmartalliance.org/.

## BS 1192:2007 - Collaborative Production of Architectural, Engineering and Construction Information (UK)

The BS 1192 code of practice establishes the methodology for managing the production, distribution and quality of construction information, including that generated by CAD systems, using a disciplined process for collaboration and a specified naming policy. BS 1192 is applicable to all parties involved in the preparation and use of information throughout the design, construction, operation and deconstruction throughout the project lifecycle and the supply chain. The principles for information sharing and common modelling are equally applicable to building and civil projects. BS 1192 is also a guide for developers of software applications to enable them to support its implementation through the provision of configuration files or application add-ons.

A copy of this British Standard can be purchased http://shop.bsigroup.com/en/ProductDetail/?pid=000000000030163398.

## AEC (UK) BIM Standards

The AEC (UK) BIM Standards builds on the guidelines defined by the world-wide standards initiatives, including BS1192:2007, the US National BIM Standard (NBIMS) and existing, proven internal company procedures. It is aimed at providing a base starting point for a unified BIM standard that can easily be adopted "as is" or developed and adapted for implementation within projects that have specific requirements for the structuring of their BIM data. This document intends to provide platform-independent guidelines for BIM for designers.

A copy of the standard can be downloaded from http://aecuk.files.wordpress.com/2009/12/aecukbimstandard-v1-0.pdf.

## New York City BIM Guidelines

Published in July 2012, on the face of it the NYC BIM Guidelines offer up some alternative thinking to the VA and NatSpec Guides. The guidelines make a lot of promises around Facilities Management deliverables which would be a first for any BIM Guide. Part 3, "Submission and Deliverables" provides a clear outline of what these should be and the guide is more prescriptive (rather than performance based) in its application but it falls short of being a specification. It is well placed as an easy read for newcomers to BIM and is one to watch as future versions may prove very valuable in making good on the promises made on Facilities Management deliverables.

View NYC Department of Design and Construction

Download the BIM Guide at http://www.nyc.gov/html/ddc/downloads/pdf/DDC_BIM_Guidelines.pdf