

BIM: better building process – building better performance

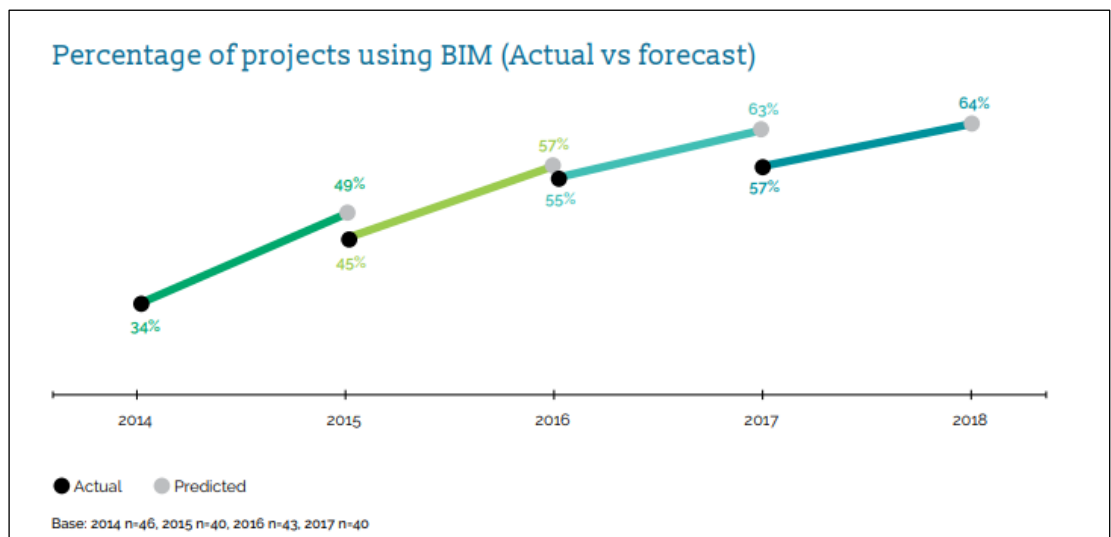
Purpose of this report

This report provides a short summary of the achievements of the Acceleration Committee for the financial year (Apr 2017 – Mar 2018). It is provided to the major funder, BRANZ, ahead of inclusion on the BIMinNZ site so our wider stakeholders are informed of our progress.

Achievements April 2017 to March 2018

The major achievements over the 2017/2018 financial year were

- Continued growth in the use of BIM across the design, build and operate stages of the lifecycle of constructed assets



Source: BIM in New Zealand — an industry-wide view 2017 (EBOSS)

- Agreement from BRANZ to fund the work of the committee for another 3 years
- Revising the acceleration strategy to include identifying the next potential target audiences for BIM Acceleration Committee work and barriers to the adoption of BIM as part of continuing to expand its use
- Undertaking quantitative and qualitative research for greater use of BIM across the value chain, including the annual EBOSS industry survey and focus group discussion with specialist trade and product suppliers
- The development of BAC communications strategy to improve BIM research knowledge dissemination to industry
- Re-development of BIM101 as a video series for the BIMinNZ website
- Confirming a strong demand for BIM 201 training, and identifying the UK BIM Academy's 'virtual project' course as a good basis for the next phase of industry training in NZ
- Continued delivery of case studies showcasing the value of BIM for Asset and Facilities Management, e.g. the Mason Brothers development.

The BIM Acceleration Committee's 2017 strategic focus

The goal of the BIM Acceleration Committee is to accelerate the adoption of a better building process for improved building performance in the design, construction, maintenance, and operation of all constructed assets.

To achieve this goal, the BAC expanded its strategic focus (for the 2017-2020 period) to six key areas:

1. Conquer the digital divide to better enable BIM uptake for those smaller and further down the value chain.
2. Develop and deliver BIM training to build BIM expertise in industry and tertiary educations.
3. Create more client-side demand for BIM through the education of government and other large clients in the benefits of BIM, specifically in facility and asset management.
4. Increase the support for collaboration that maximises the benefits of BIM use.
5. Develop data quality and process standards to facilitate interoperable (computer to computer) exchange of reliable data along the value chain.
6. Communication and general awareness raising. Telling the BIM story to existing and new audiences.

There was a focus during the 2017/2018 financial year on developing projects to deliver the strategy. Within each strategic focus area, research projects (activities) with specific deliverables and research outcomes were developed.

Three new streams of work have been developed into targeted projects to:

- Enable BIM uptake for those smaller / further down the value chain
- Increase support for collaboration to maximise the benefits of BIM use
- Ensure interoperable and reliable data along the value chain (quality and standards).

In addition to the existing streams of work for:

- Trained resource readily available to build BIM expertise in industry and tertiary education
- More demand pull by informed clients, in particular government clients, and through better understanding the BIM benefits for facilities and asset management
- Telling the BIM story to existing and new audiences.

Understanding BIM use across the value chain

A corner stone of the BIM Acceleration strategy for the three years ended March 2020 is 'greater use of BIM across the value chain': Increasing the use of BIM across both the life cycle of a construction project, and deeper within the value chains that support these projects. Market research was completed to understand the BIM adoption journey for different groups across the value chain - who the next users of BIM might be and the benefits and barriers to them using BIM. This research helps us to understand how to support those smaller / further down the value chain to achieve greater use of BIM.

Three research work streams were implemented within this project in the 2017/2018 financial year:

- The annual EBOSS survey of BIM use for the control group and clients
- Qualitative research / focus group discussions on specialist trade and product use of BIM, and the barriers / enablers of their using BIM more
- Comparison of the market research survey of BIM use with a wider group of BIM users (via a survey of the NZIOB BIM 101 attendees).

Completion of the annual EBOSS survey of BIM in New Zealand – an industry-wide view 2017

This survey was the fourth instalment of a five survey series that follows the progress being made in accelerating the introduction of BIM into New Zealand. This longitudinal study, one of only a few in the world, follows an industry control group of large and influential organisations in New Zealand's built environment. This year also marked the second year a specific client control group of asset owners and managers from organisations with large property/constructed asset portfolios were surveyed. Their inclusion was to better understand attitudes, drivers, and barriers towards BIM use.

The findings from the industry control group survey suggest that industry has moved past the initial learning stage and now realises how complicated BIM and BIM models can get. This is evidence that BIM is being used for more complex tasks, indicating an increase in the 'maturity' of its use. With this 'maturity', there is a realisation that this complexity has consequences including the cost of changes, the issues of combining BIM models from different parties, and the large amount of work involved in making changes and providing what clients need for later operation of construction/constructed assets.

The client group survey results indicated that clients are aware of BIM but are not using it and that there is a perception that the costs of BIM outweigh the benefits. This is a reflection that where asset managers have already made the move from reactive to preventative maintenance, with supporting legacy systems, the cost of changing systems is high with the benefits of BIM limited to reduced cost of ongoing data input.

Focus group research to help drive awareness and use of BIM

Complementing the Annual Survey of BIM in New Zealand, a focus group research project, 'To Help Drive Awareness and Use of BIM', was conducted to expand on the following areas:

- Knowledge and organisational use of BIM
- Motivators, barriers, and solutions to promote BIM use
- Effective methods of BIM communication channels.

A key recommendation of this research was the development of a communications strategy for the Acceleration Committee to target the different industry members in the most effective channels. There was also emphasis on the importance of continuing to develop case studies showcasing the value and benefits of BIM. These recommendations have been translated into an implementation plan that will include stakeholder engagement.

Comparison of quantitative and qualitative research on BIM across a wider group

A comparison was made of the quantitative and qualitative research on BIM use across a wider group of users via an NZIOB market research survey. This comparison provides a richer picture for undertaking and revising the Acceleration Strategy.

The implications of these research findings were a continued or increased focus on:

- communication to a wider audience – using professional bodies and other channels – with a focus on what practitioners can do to use BIM better / more.
- identification of training opportunities
- creating competency in clients (including government) in specifying BIM, and procuring construction projects that will make it easier to get the full range of productivity benefits from using BIM
- reducing the technical barriers / difficulties using BIM
- engaging with contractors more.

These themes and focus areas aligned well with the Acceleration Committee's expanded strategic focus and were used to inform and direct the 2018-2020 specific research projects/activities to deliver on its strategy.

Achieving greater use of BIM across the value chain

The market research undertaken provided an understanding of who the next users of BIM might be, the benefits and barriers to their using BIM and how best to engage with them.

Based on the findings of this research the Acceleration Committee identified the need and commissioned the development of a communication plan to engage a wider audience and improve BIM research knowledge dissemination across the value chain.

The focus of the plan is on

- the wider group of people using BIM in design and construction of larger commercial construction and their specialist trades and product suppliers
- clients who may benefit from the use of BIM in design, construction and operation of their built assets, with particular focus on owners with portfolios of large commercial buildings and infrastructure, or large portfolios of smaller buildings.

The plan informs the activities of the committee for the 2019/2020 fiscal year, particularly in the distribution of content.

Developing BIM industry training and education

Industry training and education of BIM continues to be at the forefront of the Acceleration Committee's agenda.

In 2016, the Acceleration Committee ran a very successful education series called BIM 101. BIM 101 was a seminar that covered the basic principles of BIM, starting with poor productivity and information flow, leading into BIM as a solution, and the fundamentals of BIM in the New Zealand construction industry. During the 2017/18 fiscal year, the Acceleration Committee identified that greater industry penetration of this content would be possible if it were published on the BIMinNZ website, and available when and where people want to engage with this introductory content. An industry training group was formed to recast the content and make it suitable for video 'soundbite' delivery. This was recorded in December and BIM 101, BIM fundamentals for new users, was re-released as free of charge video content on the BIMinNZ website to engage with a wider audience.

The Acceleration Committee, with the NZ Institute of Building (NZIOB), undertook market research on the original BIM 101 attendee database to determine demand for BIM 201. Confirming strong demand for a BIM 201 training, the Acceleration Committee explored options to build on the BIM 101 training that might also create a stronger connection between industry and tertiary education providers via more hands-on training. The UK BIM Academy's

‘virtual project’ was identified as a good basis for next phase of industry training in NZ. Three industry trainers attended and assessed the Academy’s ‘virtual project’ course, determining its suitability as a basis for BIM 201 and the industry training group began work with the Academy to modify the content suitable for delivery in NZ.

Expanding the evidence of the benefits and value of BIM for Asset and Facilities Management

In line with the Acceleration Committee’s communication plan and the focus on the benefits of using BIM for clients, an article and case study on the value of BIM for Asset and Facilities Management (AM/FM) was developed. The Mason Brother’s case study and associated article are aimed specifically for building clients and large asset managers, showcasing the new and innovative use of data/information management, and cloud-based technology for on-site use of BIM AM/FM.

Government as client

With BIM maturity still low with Government, there is more work to be done is raising awareness of the benefits of BIM and to better articulate the value proposition of BIM. Feedback from Government clients was that they needed a simple-to-follow document that outlines BIM requirements. A BIM Procurement Schedule was developed, intended to be trialled by New Zealand Defence Force, with MBIE support, on a small-scale project in Auckland. Owing to a subsequent restructure of MBIE’s Building System Performance branch, the Government as Client strategic focus was adjusted to be on ministries who are actively sponsoring projects, for example, NZTA, NZDF, the Ministry of Education and the Ministry of Health (Area Health Boards).

Financial summary and programme

The 2017/2018 budget and programme are included below.

2017/2018 Financial Summary	
Income - BRANZ annual funding	\$250,000.00
Budget	\$274,400.00
Total Actual Expenditure	\$139,923.50
Total Actual Expenditure vs Income	-\$110,076.50

During the financial year it became apparent that work streams associated with at least two strategic areas were not progressing as planned – the Government as Client and Tertiary Education streams. A dedicated workshop was held in August 2017 to uncover key resourcing or budgeting constraints that would affect the Committee’s ability to deliver the planned work. This session culminated in a re-cast of the programme and order of deliverables along with a critical reassessment of the resources necessary to deliver the work streams. As at March 2018, the Committee had substantially completed 75% of the overall deliverables that were set at the start of the financial year.

BIM ACCELERATION COMMITTEE							2017/2018 PROGRAMME - UPDATE																											
ID	Task Name	Resource Names	Duration	Start	Finish	Comments	Apr '17	May '17	Jun '17	Jul '17	Aug '17	Sep '17	Oct '17	Nov '17	Dec '17	Jan '18	Feb '18	Mar '18	Apr '18	May '18	Jun '18													
1	BIM ACCELERATION COMMITTEE Programme - 2017 - 2018																																	
2	Targeting Research		243 days	Mon 3/04/17	Wed 7/03/18																													
3	BIM Across the Value Chain	AR,HS,SD	243 days	Mon 3/04/17	Wed 7/03/18	95% Complete																												
4	Quantitative Research work stream		125 days	Mon 3/04/17	Fri 22/09/17	Complete																												
8	Qualitative Research work stream		145 days	Mon 3/04/17	Fri 20/10/17	Complete																												
12	Conduct EBOSS Survey, publish & present to BIM Network		90 days	Mon 12/06/17	Fri 13/10/17																													
13	Survey work and Project Complete		0 days	Fri 20/10/17	Fri 20/10/17																													
14	Interpretation of Research and impact on BAC focus	AR,BB,HS,SD	90 days	Mon 23/10/17	Fri 23/02/18	Underway																												
15	Identify new work streams for this Strategic Setting	All	8 days	Mon 26/02/18	Wed 7/03/18	Underway																												
16	Trained Resources Readily Available	DB,SA,TMcD	252 days	Mon 3/04/17	Tue 20/03/18																													
17	Industry Training Project		252 days	Mon 3/04/17	Tue 20/03/18	Complete																												
18	Up to 3 attendees at the 'virtual course' in UK		35 days	Mon 3/04/17	Fri 19/05/17																													
19	Recommendation to BAC Go/No Go to run the course in NZ		12 days	Mon 22/05/17	Tue 6/06/17																													
20	BAC Meeting Milestone - Decision Required		0 days	Wed 14/06/17	Wed 14/06/17																													
21	Revise Industry Training Plan with virtual course outcomes		20 days	Wed 14/06/17	Tue 11/07/17																													
22	Re-Run BIM 101		116 days	Wed 5/07/17	Wed 13/12/17	Complete																												
23	BIM 101 event		0 days	Wed 13/12/17	Wed 13/12/17																													
24	Edit and Prepare BIM 101 Videos for distribution		48 days	Thu 14/12/17	Mon 19/02/18	Complete																												
25	BIM 101 Videos ready on BIMinNZ website		0 days	Mon 19/02/18	Mon 19/02/18																													
26	Prepare BIM 201		200 days	Wed 14/06/17	Tue 20/03/18	Underway																												
27	Tertiary Education Project	RA,TP,TMcD	200 days	Mon 3/04/17	Fri 5/01/18	Underway																												
28	Education Material on BIMinNZ website		50 days	Mon 3/04/17	Fri 9/06/17																													
29	Explore discussion forums for tertiary		30 days	Mon 12/06/17	Fri 21/07/17																													
30	Work up existing BIM learning outcomes		55 days	Mon 24/07/17	Fri 6/10/17																													
31	Explore international frameworks and events for NZ context		55 days	Mon 24/07/17	Fri 6/10/17																													
32	Ongoing Activities: Support NBEWG and maintain International Connections		200 days	Mon 3/04/17	Fri 5/01/18																													
33	More Demand Pull - Government interface		295 days	Mon 3/04/17	Fri 18/05/18																													
34	Government as a Client Project	GS,AF,JW	290 days	Mon 3/04/17	Fri 11/05/18	Revisit/ Renew																												
42	Recast the Project and replan the activities	SC,JW,AF	60 days	Mon 26/02/18	Fri 18/05/18	Placeholder																												
43	Focus on Asset Owner, End-user and Asset Operator		40 days	Mon 26/02/18	Fri 20/04/18																													
44	Develop messaging to better articulate the Value Proposition		60 days	Mon 26/02/18	Fri 18/05/18																													
45	Revisit previous work with GPG on the BPS		60 days	Mon 26/02/18	Fri 18/05/18																													
46	More Demand Pull - Facilities and Asset Management		298 days	Mon 3/04/17	Wed 23/05/18																													
47	BIM to FM and AM Project	AF,PS,JW,HR	298 days	Mon 3/04/17	Wed 23/05/18	90% Complete																												
48	Workshop with Asset Owner		40 days	Mon 3/04/17	Fri 26/05/17																													
49	Review workflow on potential case study project (Mason Brothers)		40 days	Mon 3/04/17	Fri 26/05/17																													
50	Presentation to BIM.Well by Asset Owner about their business drivers for data		25 days	Mon 29/05/17	Fri 30/06/17																													
51	Compile preliminary information for White Paper or Case Study		60 days	Mon 3/07/17	Fri 22/09/17																													
52	Agree the parameters for Case Study & Article		10 days	Mon 25/09/17	Fri 6/10/17																													
Wed 21/02/18							Page 1																											

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BIM ACCELERATION COMMITTEE

2017/2018 PROGRAMME - UPDATE

ID	Task Name	Resource Names	Duration	Start	Finish	Comments	Apr '17	May '17	Jun '17	Jul '17	Aug '17	Sep '17	Oct '17	Nov '17	Dec '17	Jan '18	Feb '18	Mar '18	Apr '18	May '18	Jun '18
53	Develop the Case Study & Article (Mason Brothers)		83 days	Mon 9/10/17	Wed 31/01/18	Complete															
54	Case Study and Article - Ready to Publish		0 days	Wed 31/01/18	Wed 31/01/18	Complete															
55	Publish the case study on BIMinNZ website		20 days	Thu 1/02/18	Wed 28/02/18	Ready to Publish															
56	Develop and publish a sample workflow/ information sheet for BIMinNZ website		60 days	Thu 1/03/18	Wed 23/05/18	Pending															
57	Publish the sample workflow on BIMinNZ website		0 days	Wed 23/05/18	Wed 23/05/18																
58	Increased Support for Collaboration		170 days	Thu 14/09/17	Wed 9/05/18																
59	Revised Project Plan for Collaboration Project	JW,AF,PS,SD	170 days	Thu 14/09/17	Wed 9/05/18	95% Complete															
60	Reframe the project: encourage coordination and collaboration processes		10 days	Thu 14/09/17	Wed 27/09/17																
61	Develop Discussion Document which pulls together: Procurement, IPD, Govt as a Client, Supply Chain and Training/ Education work streams		10 days	Thu 14/09/17	Wed 27/09/17																
62	Workshop review of the Discussion Document		20 days	Thu 28/09/17	Wed 25/10/17																
63	Substance of the White Paper agreed		0 days	Wed 25/10/17	Wed 25/10/17																
64	Develop First of Series of Articles: Challenges and Opportunities		100 days	Thu 26/10/17	Wed 14/03/18	Underway															
65	Article - Ready to Publish		0 days	Wed 14/03/18	Wed 14/03/18																
66	Publish White Paper on BIMinNZ website		10 days	Thu 15/03/18	Wed 28/03/18																
67	Reformat the White Paper as Appendix to BIM Handbook		30 days	Thu 29/03/18	Wed 9/05/18																
68	Interoperable and reliable data along the value chain		280 days	Sat 1/04/17	Fri 27/04/18																
69	Supply Chain Clients Project	AF,GS	280 days	Mon 3/04/17	Fri 27/04/18	85% Complete															
70	Regular interface and review with VUW research students - ongoing		200 days	Mon 3/04/17	Fri 5/01/18																
71	Review draft research		0 days	Mon 11/12/17	Mon 11/12/17	Underway															
72	Review final research		60 days	Mon 11/12/17	Fri 2/03/18	Underway															
73	Develop messaging from the research and publish on BIMinNZ website		40 days	Mon 5/03/18	Fri 27/04/18																
74	Data Quality and Standards Project (On Hold)		0 days	Sat 1/04/17	Sat 1/04/17	On Hold															
75	Telling the BIM story to existing and new audiences		260 days	Sat 1/04/17	Fri 30/03/18																
76	Awareness Raising and BIM Networks Project	SD,SA,HS	260 days	Sat 1/04/17	Fri 30/03/18	95% Complete															
77	Implement the Brand Cause		0 days	Sat 1/04/17	Sat 1/04/17	Complete															
78	Establish BAC contribution to BIM Networks and implement		40 days	Mon 3/04/17	Fri 26/05/17																
79	Revision of this project based on BIM across the Value Chain Project		0 days	Wed 27/09/17	Wed 27/09/17	Complete															
80	Identify options for case studies		10 days	Wed 27/09/17	Tue 10/10/17	Complete															
81	Develop Case Studies for Publication		50 days	Wed 11/10/17	Tue 19/12/17	Underway															
82	Publish Case Studies on BIMinNZ website		0 days	Wed 28/03/18	Wed 28/03/18																
83	Establish stronger relationships with professional institute		40 days	Mon 3/04/17	Fri 26/05/17	Ongoing															
84	Maintain the BIMinNZ website		260 days	Mon 3/04/17	Fri 30/03/18	Ongoing															

Committee membership to deliver the strategy

The Acceleration Committee saw a number of membership changes during the 2017/2018 financial year.

Departing members included:

- Gleb Speranski
- Paul Singleton
- Tara McDonald (BRANZ). Samantha Johnston (AECOM) has filled the secretariat position.
- Heather Staley, in her capacity at MBIE. BAC however, has been fortunate in retaining Heather's Committee membership in her new role for the New Zealand Defence Force.

New members include:

- David Darwin, Manager Policies and Standards at NZTA
- Brian Berg, Building Environmental Scientist at BRANZ – as BRANZ Ltd. representative.
- Seth Campbell, Manager of the System Design and Implementation team at MBIE – as MBIE's representative
- Steve Ritchie, Regional Operations Manager at Hawkins Construction Ltd.

The committee's current membership is well placed to support the strategy's direction.