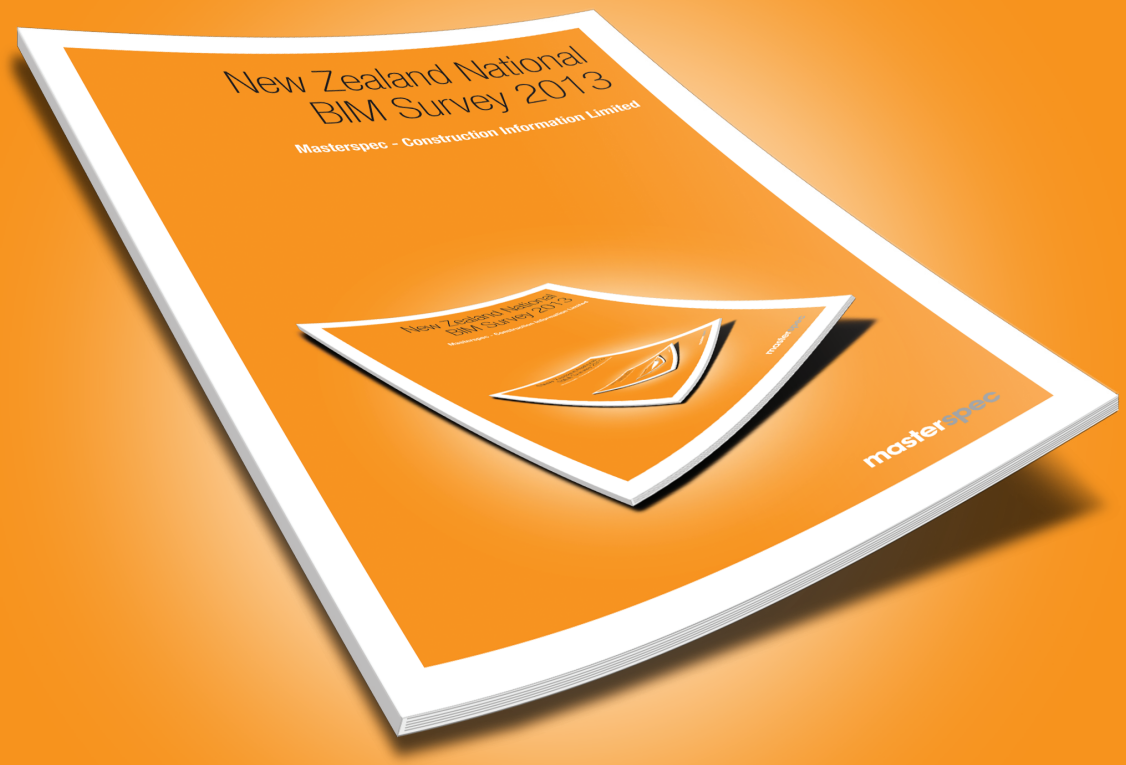
New Zealand National BIM Survey 2013

Masterspec - Construction Information Limited



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BIM or Building Information Modelling promises to be a game changer in lifting the productivity of New Zealand's building and construction sector.

In a recent visit to the United Kingdom I was impressed by what I saw in terms of the productivity benefits BIM delivers. There has been an 18% improvement in productivity on UK government projects using BIM. We can learn from the UK's Strategy.

Building Information Modelling is a proven transformative technology for the built environment – we know it is the smart way to go, providing for a more integrated and collaborative approach to design and construction. This digital tool enables all project partners to step through the construction process in a virtual environment, thereby reducing risk, project timeframes and costs.

This second National BIM Survey shows that it is gaining traction with a steep increase from 34% to 57% of respondents aware of and using BIM. That's fantastic news. However, New Zealand is significantly behind other countries such as the UK and USA in its uptake.

There is more work to be done to ensure the real advantages of BIM are realised here. The Canterbury rebuild provides an exciting opportunity to accelerate the use of it and reap significant time and cost savings. To assist this it is vital that the barriers to wider industry uptake identified in the survey are addressed swiftly.

The Productivity Partnership, an initiative of this Government with the construction sector, is spearheading progress in this area, recognising that increased use of BIM is fundamental to achieving our national goal of a 20% increase in sector productivity by 2020. I applaud the work being done by the National Technical Standards Committee to establish electronic exchange standards and look forward to the release of the BIM handbook for industry that the Productivity Partnership is producing together with the sector.

I especially commend Masterspec for undertaking the annual BIM Survey and keeping the use of BIM in New Zealand clearly in view as a pressing industry issue.

We need to act now to seize the opportunities BIM offers. The Government will continue to support initiatives that accelerate uptake of it in the New Zealand market.

Hon Maurice Williamson
Minister for Building and Construction

Contents

Introduction *Rolf Huber, CEO Construction Information Ltd* 2

Executive summary 3

The way ahead 4

BIM Survey

Awareness and adoption of BIM 5

Use of BIM in current projects 7

BIM tools 8

Data coordination 10

Use of BIM collaborative protocols 11

Barriers to BIM adoption 12

BIM the future for the construction industry? 13

BIM and design practices - small versus large organisations 15

BIM and design practices - architectural versus engineering 17

An international comparison 18

Industry changes 19

Survey respondents' details 20

Industry views

Rocky road to BIM 22

Accelerating the uptake 23

The Productivity Partnership's perspective 24

Construction Information Ltd is owned by the industry through its shareholding partners NZIA, BRANZ, RMBF. Its mission is to maintain and deliver **Masterspec**, New Zealand's leading specification system, **miproducts**, the national product database, **CBI** (Co-ordinated Building Information), the classification and coding system for the New Zealand construction industry, as well as related industry documentation and information. The company's policy is to respond to market needs, with a number of new specification and support products currently under development, including NextGen 2 and Building Information Modelling (BIM) related initiatives.

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Rolf Huber
CEO of Construction Information Limited

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We would like to thank the following organisations for their support in preparing for and completing this survey:

NEW ZEALAND INSTITUTE OF ARCHITECTS INCORPORATED

BRANZ

Registered Master Builders

NBS

ACENZ

BUILDING AND CONSTRUCTION PRODUCTIVITY PARTNERSHIP

New Zealand National BIM Survey 2013

Introduction

It is just 18 months since the previous survey on the construction industry's attitudes to Building Information Modelling. Encouragingly, the key question on the future adoption of this new technology shows positive signs of increasing engagement and interest.

With 426 respondents the survey results provides a credible view of current attitudes and the potential for BIM to lead to a significant advance in productivity within the sector. There has been an increase in those currently using BIM, from 38% in 2011 to 57% in 2013. Similarly there is an increase from 68% of those expecting to use BIM in a year's time, up to 77% today.

Before the benefits of BIM can be realised, some significant roadblocks need to be overcome. The need for investment, both through direct costs and the cost of retraining, remains a significant barrier for some, in particular for smaller organisations. There also remains concern regarding the lack of standardised tools and protocols suited to a new collaborative approach to realising a construction project.

Both government and industry bodies have a role to play in ensuring that appropriate support is provided: encouraging the adoption of national BIM guidelines, the availability of neutral object libraries and the development of new approaches to contractual relationships during the design and construction phase of projects.

The foundation of BIM is the delivery of standardised and consistent information. Without such an approach outputs will be inconsistent and not offer usable data for schedules and other information-based queries further down the project chain. Product manufacturers have an important role to play in this as well, ensuring that their product data is presented in a consistent and standard format and that it meets both technical and compliance requirements.

Masterspec continues to play its part; ensuring that specification and product data reflects the requirements of a BIM-based technology. Others, including the Productivity Partnership, are also engaging with the challenge of BIM adoption. Conversely a key challenge for adopters, is accepting that BIM is much more than just 'clever 3D CAD'.

As noted by Richard Waterhouse, CEO of NBS (UK) in the recent UK-based BIM survey:

BIM adopters can see that effective information management leads to business efficiency and profitability.

BIM can therefore be so much more than just clever technology and its adoption will significantly assist in meeting the government's target of a 20% increase in efficiency by 2020.

Executive Summary

The BIM on-line survey was carried out by Masterspec, in association with NBS (UK) and was live between July and August 2013. Assistance in carrying out the survey was provided by BRANZ, RMBF, NZIA, ACENZ and the Productivity Partnership. The total of 426 respondents compares with an earlier BIM survey in late 2011 which attracted 524 respondents. This indicates that the topic is of continuing interest to the New Zealand construction industry.

"A real challenge of BIM and the sharing of models is the retention of intellectual property, privacy and security."

The term Building Information Modelling continues to have a wide spectrum of meanings, even for those familiar with the new technology, with a strong, if inaccurate belief that BIM = 3D CAD. A more precise definition of BIM is:

BIM is a digital representation of physical and functional characteristics of a building. As such it serves as a shared knowledge resource for information about a building, forming a reliable basis for decisions during its lifecycle from inception onwards.

In short: ***BIM is the sharing of structured information****.*

With the current survey following a similar pattern to the earlier survey in late 2011, it is possible to gain an insight into how the industry has advanced in its understanding and use of BIM technology. One question in particular indicated that there has been some movement:

How would you describe your organisation's future use of BIM?
This shows a steep increase in those who currently use BIM (38%-57%) and those who expect to use it in 1 year's time (68%-77%). However this is tempered by a continuing "vacuum" of uncertainty around whether BIM equals 3D CAD.

The survey responses indicate there are signs of a growing sector of the industry engaging with BIM, but with some significant differences occurring between the design professions and different practice sizes. 56% of architectural practices stated that they have adopted BIM for at least some projects, as against 76% of engineering and multi-disciplinary practices. Similarly 49% of small practices (1-5 staff) stated that they were starting to use BIM, versus 67% of medium to large practices.

The survey results show that a number of roadblocks to BIM implementation still exist. The "big three" barriers were shown to be:

1. Lack of expertise (54%)
2. Lack of standardised tools and protocols (39%)
3. Lack of collaboration (37%)

These were closely followed by "cost" (34%). The results indicate that lack of expertise and the lack of "standardised tools" are major barriers and that training programmes are needed, outside of those currently provided by the leading software vendors. This survey shows that more and more respondents are realising that BIM will require them to change current practices and procedures and that lack of collaboration remains a significant barrier for them to overcome.

Parallel surveys were conducted out in three other countries, with two questions in particular offering a useful comparison to the New Zealand results:

Awareness of BIM had New Zealand on a similar level to other countries on 98%, followed by Canada (96%), the UK (94%), and Finland (87%). *Percentage who are confident in knowledge and skill in BIM* showed Canada leading with 49%, followed by Finland (38%) the UK (35%) and New Zealand (34%).

The way ahead

While the 2013 survey results indicate that the design and construction industry has moved closer to the effective implementation of BIM-based technology, there is still a worrying lack of understanding around BIM versus 3D CAD. To be effective in leading growth in industry effectiveness and productivity a Building Information Model must be interoperable among the current range of software tools and also capable of providing a rich source of data. It must be and be seen to be, more than a simple geometric view of a building project.

"We have a long way to go if true BIM is to be implemented successfully in the NZ market."

"BIM is an ongoing learning process. We have to learn but so do our consultants, contractors and clients."

"BIM is decades away if it ever comes to pass."

"If BIM works let me know."

Government, via MBIE, the Productivity Partnership and the industry in general, are beginning to address the challenges involved in coordinating a successful move to BIM. Work has commenced on a National BIM Guide document and the recent National Online Consenting Project report outlined the specific deliverables needed to ensure that rich project models can be accommodated. However there is still much more to do:

a) **Classification system**
Agreement on a national, neutral classification system for BIM objects. With CBI (Coordinated Building Information) being currently the only national construction classification system in use, it would be logical for this to form the basis of any new approach to classifying construction objects and elements.

b) **National BIM object library**
A national library of BIM objects, to provide both consistency and certainty. Significant advances have been made in the UK and this work could be readily adapted for New Zealand industry conditions. However significant funding would be required as developing such a resource is unlikely to be financially sustainable.

c) **Education and training**
The need for education and training at all levels of using BIM technology.

d) **Research to support collaboration**
Research into what impact the implementation of BIM would have on design and construction teams operating in this new environment. This work would highlight the challenges to be met under a more collaborative approach to design and construction, including the need for new forms of client/designer/contractor contracts.

e) **Insurance**
Investigate the establishment of project-based liability insurance cover to reduce the risks associated with an integrated approach to design and construction. This work would be affected by any move to change the current joint and several liability regime.

Overcoming potential roadblocks

The key roadblocks to the successful implementation of BIM-based technology continue to be lack of expertise, the need for training and support, and lack of standardised tools and protocols. This can lead to difficulties in full collaboration through the design and construction chain. Cost is of concern to a third (34%) of respondents, but this would be alleviated if appropriate support and guidance is available for participants to both see and then realise the full benefits.

BIM requires a different approach to how those involved in the built environment interact and this means that some, especially those from smaller organisations, may lack the confidence to make what appears to be a radical change. The government and key industry organisations need to recognise this and ensure that appropriate support is available. Once the real benefits of BIM are revealed, confidence to make the change will follow.

Awareness and adoption of BIM

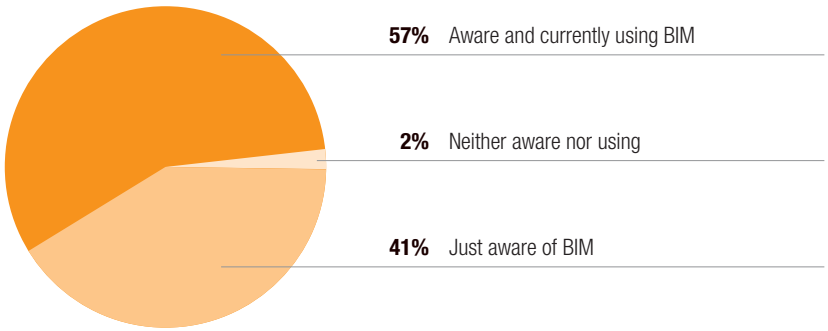
The survey responses show that there remains a range of understanding around the question: What is BIM? This is understandable as some organisations are either yet to make the move, or are just starting on the journey. As noted in the answers to the following question, 69% of respondents agreed that: *The industry is not yet clear enough on what BIM is yet.*

"There is a push towards BIM whether we like it or not."

"Difficult to blanket a single methodology across a creative industry."

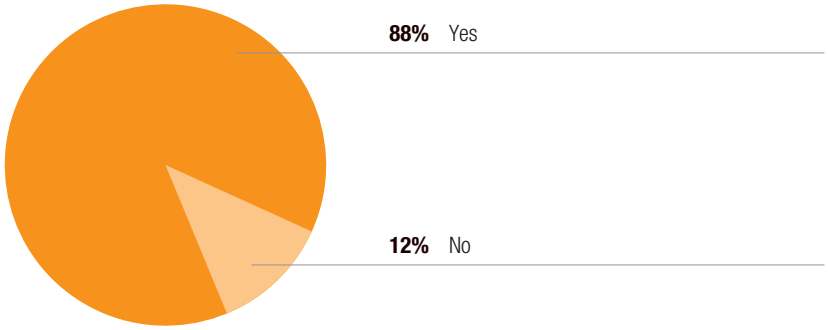
"Many are being left behind by not adopting BIM"

Awareness and use of BIM



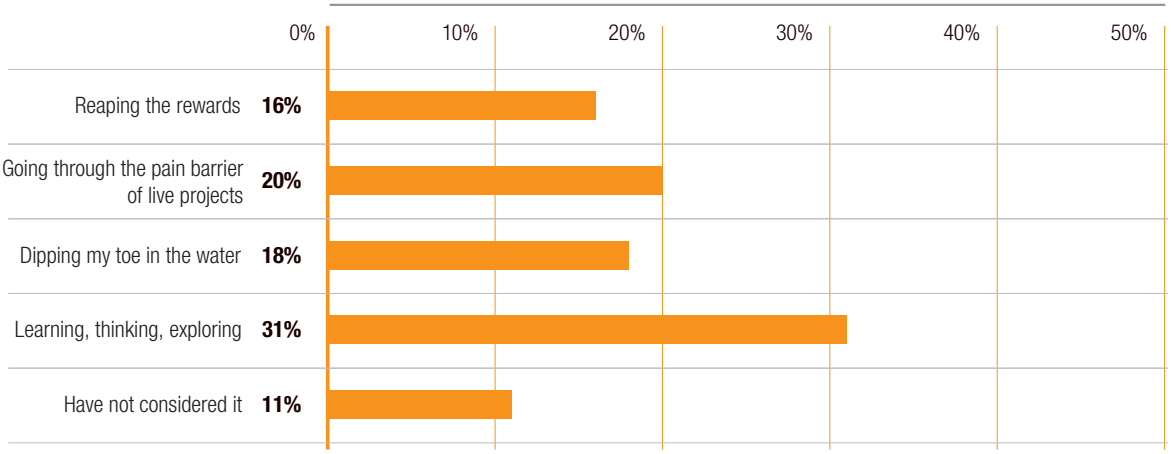
A reduction from 12% to 2% among those neither aware of nor using BIM is a significant shift since the 2012 survey. This, coupled with an increase from 34% to 57% of those aware of and using BIM, indicates that respondents are not only more aware of BIM but are now actively using it, at least on some projects. The challenge will be to determine how deep the adoption is.

Is the use of BIM growing in your organisation?



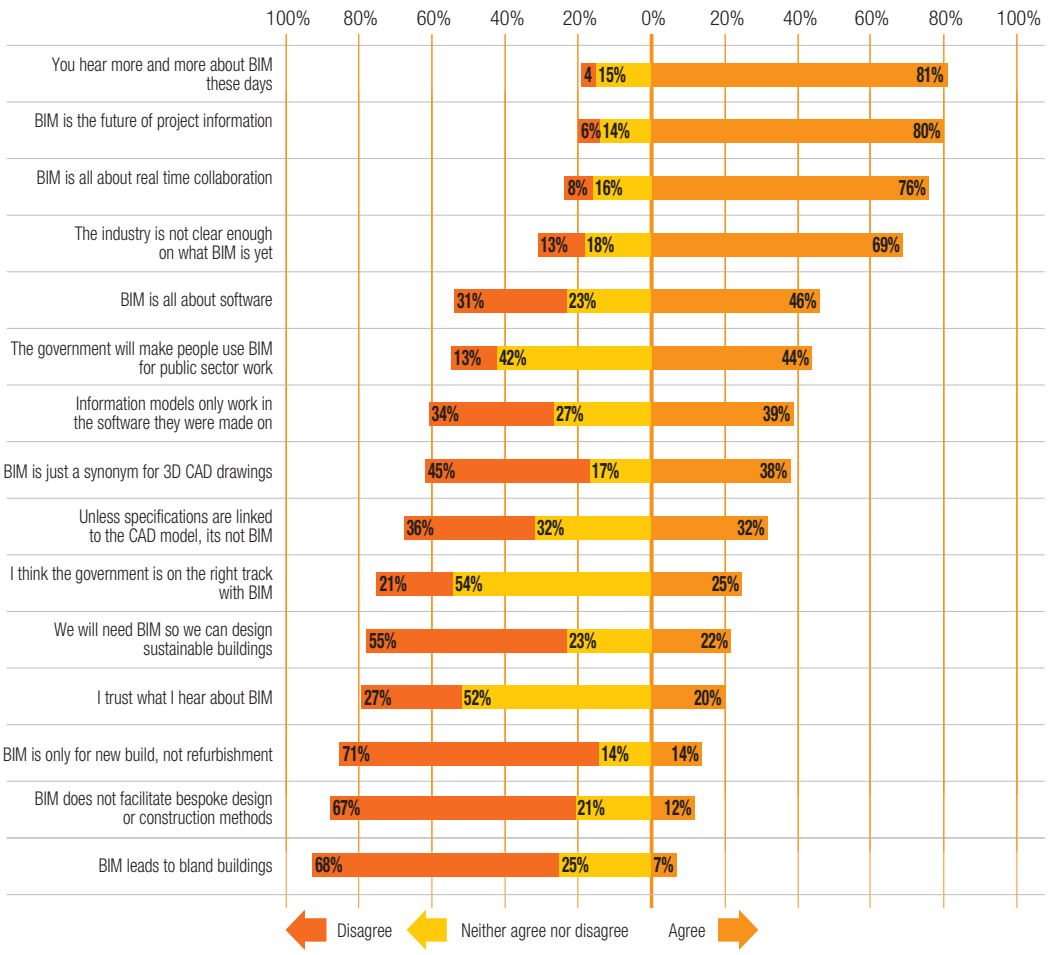
While this is a very striking response to a new question since the 2012 survey, it reflects that the early adopters of BIM continue to move ahead of the field.

Where on the BIM journey are you?



This new question for the 2013 survey shows that not everyone's experience of BIM is the same. Nevertheless a pleasing 36% are either reaping the rewards or going through the initial pains of adoption, with a further 49% at least considering a move.

How strongly do you agree or disagree with the following statements about BIM?



There is a modest increase in those who see BIM as the future of project documentation and BIM is clearly being discussed more. However with 55% of respondents either agreeing or "not sure" about the statement that "BIM is just a synonym for 3d CAD" shows there is still a strong area of misunderstanding around what BIM is or what its adoption can achieve.

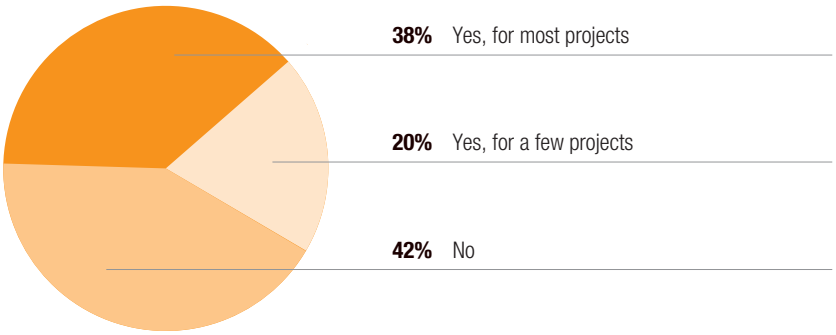
Use of BIM in current projects

"As an organisation we have not fully adopted the "information" part of BIM."

"BIM server is a brilliant way to have multiple people all contributing to projects."

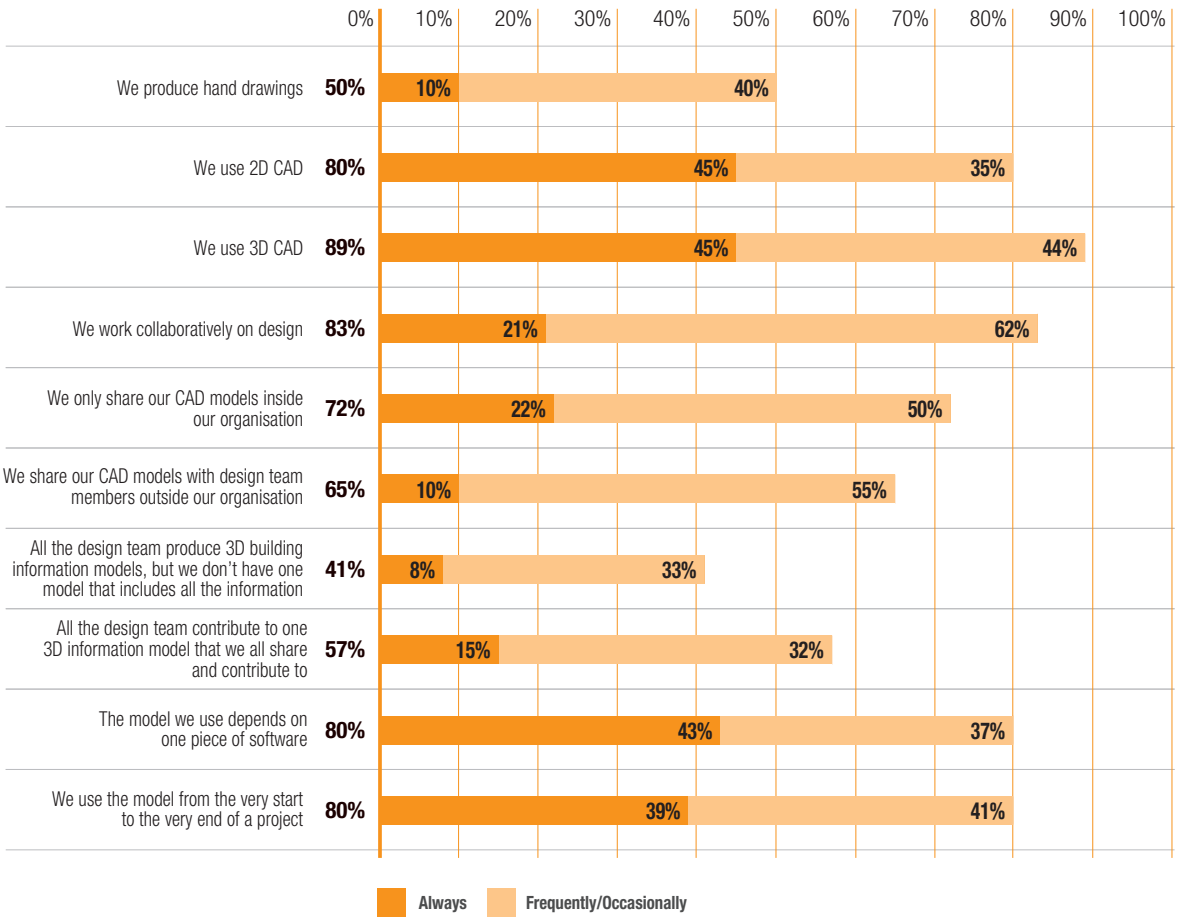
"BIM is mostly about multi-disciplinary collaboration between consultants."

Within your organisation have you adopted BIM for your projects?



This new question in the 2013 survey shows that the industry still has some way to go. A "no" response of 42% is concerning; and only 38% have adopted BIM for most projects. Improving the richness and depth of adopting BIM and the level of interoperability embed in the project model remains a challenge.

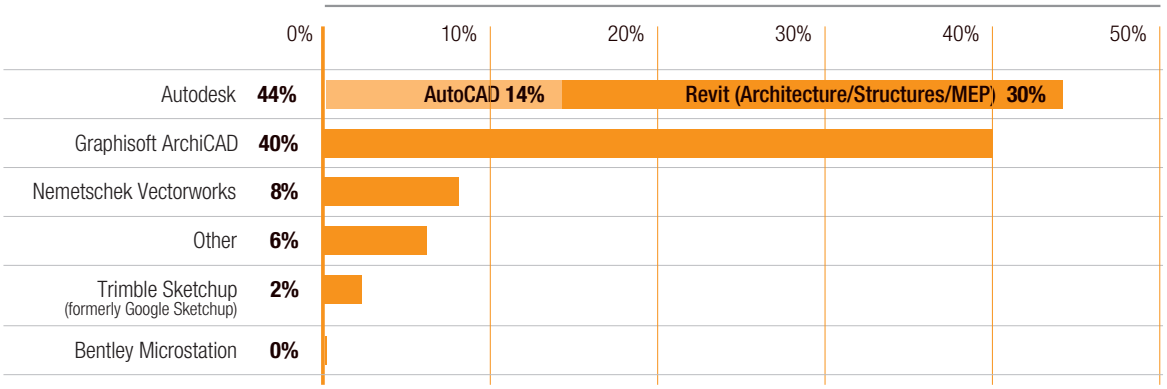
For your projects, how often do the following statements at least sometimes apply?



This view on the use of computer-based tools shows a clear difference between occasional collaboration and sharing of information and the levels applying to all projects. The response that 21% work collaboratively always, with 83% sometimes collaborating is a positive sign for the future.

BIM tools

When producing CAD drawings, which of the following tools do you *mainly* use?

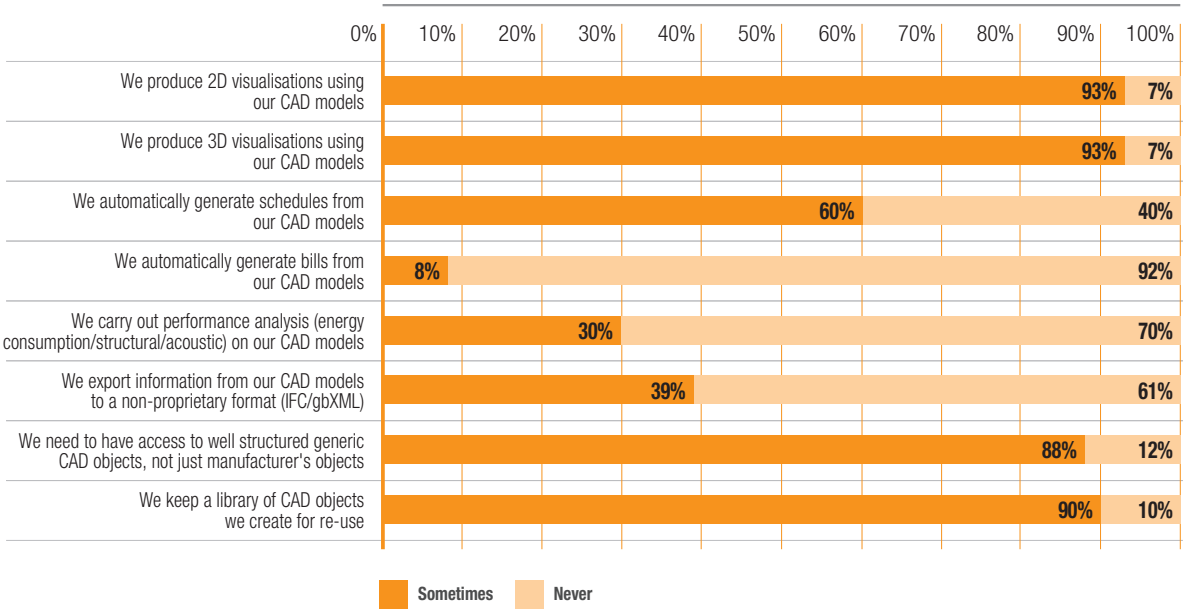


"The biggest issue is patch protection; Revit versus ArchiCAD needs to be sorted out"

Autodesk (44%) and Graphisoft (40%) continue to dominate the New Zealand market.

If there had been a higher response to the survey by the engineering professions might have shown a much wider spread of specialised tools used by different engineering disciplines and related subtrades (e.g. H&V, electrical).

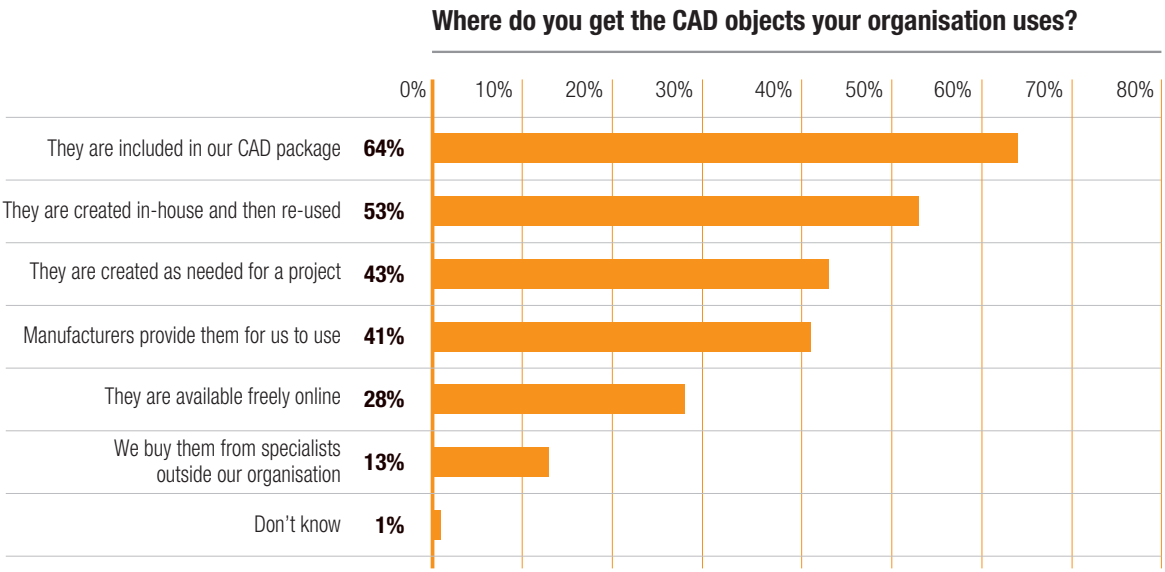
For each of the following statements, how would you describe your organisation's use of CAD?



"All manufacturers must produce good quality models in appropriate formats"

A number of questions which were new since the 2011 survey produced some strong responses: 93% are producing 2D visualisations (matching the production of 3D visualisations); 88% noted the need to have access to generic CAD objects (not just manufacturer's objects); 90% confirming that they keep a library of the CAD objects they create.

There was a significant reduction in those exporting information to non-proprietary formats (IFC/gbXML) while there was a pleasing increase in those who automatically generate schedules (up from 48% to 60%). These results show that further work is still needed to promote the use of neutral formats and that there is a keen interest in being able to access well structured generic objects.



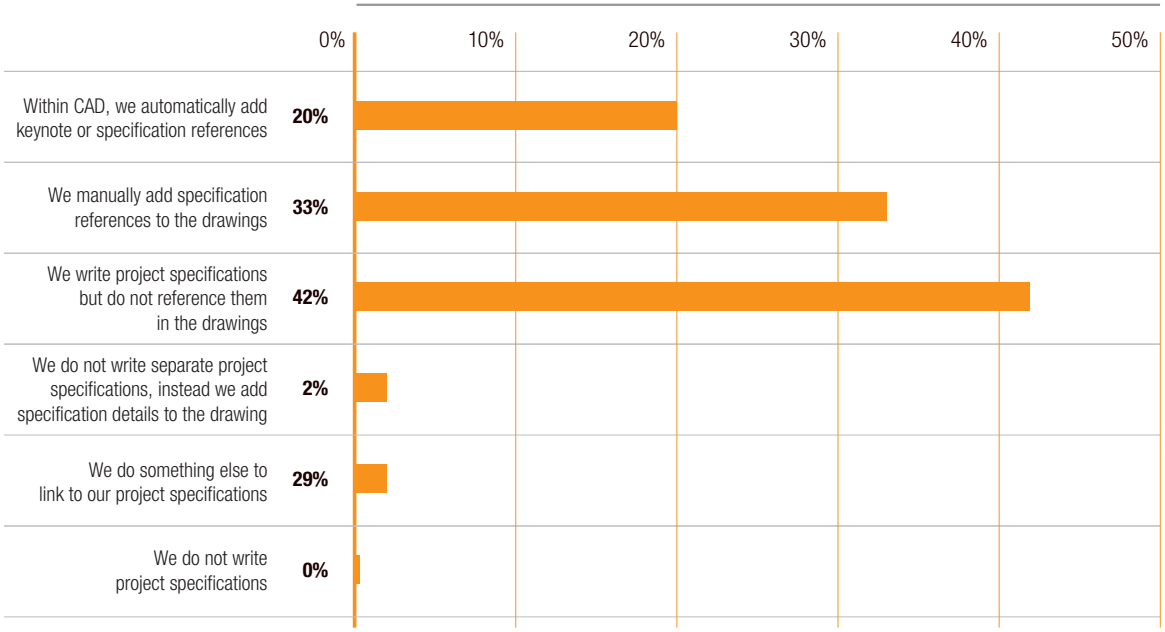
"Interoperability between the main software providers will make it easier"

Two significant changes have occurred since the 2011 survey; a reduction from 75-64% in the use of the objects provided with a respondent's own CAD package; and a major change from 58% down to 28% for the use of objects available on line. Why such a major change in the use of online objects? This may reflect a reluctance to use objects of unknown quality or lack of compatibility and/or the fact that most online objects are brand-specific.

The wide spread of locations where objects are being sourced is a concern in ensuring interoperability.

Data coordination

Which of the following statements best describes how your organisation normally links CAD drawings to project specifications?

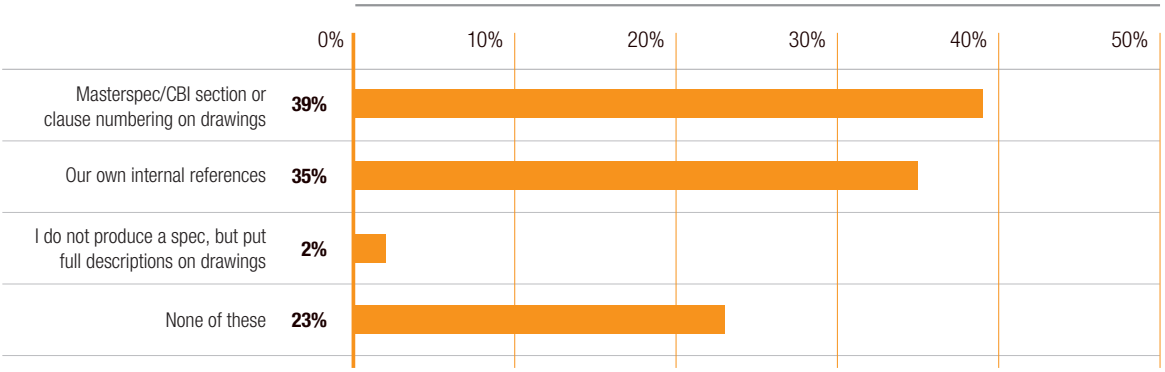


"An unlinked specification is a big drawback."

53% provide links to specifications, either automatically by keynoting, or by manually adding specification references. The response has changed little since the 2012 survey, with 42% not referencing their specifications on or in their (CAD) drawings. This shows that an effective move to BIM will require a way for users to populate their BIM objects with relevant specification data in general and with specific product selections in particular.

"Getting a good standard keynote file referencing my specifications is an ongoing project."

How does your organisation co-ordinate the information in your CAD model and your specification?

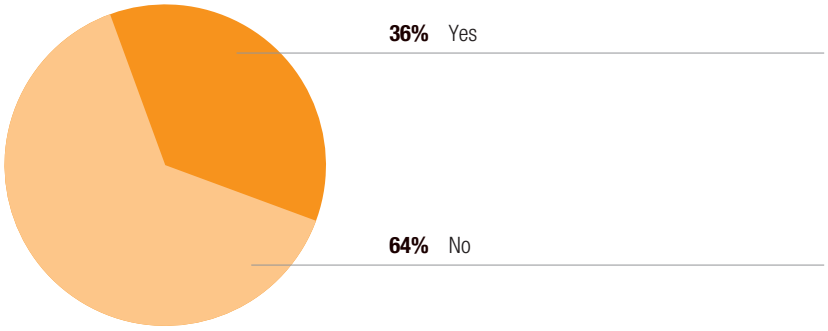


A high 39% use Masterspec or CBI references on their drawings, with another 35% using their own internal references. With coordination of information sources being a key element in a BIM-based future, the need for a single national classification system remains. Expanding CBI to better suit an object-based approach might provide the answer.

A small but significant growth in using Masterspec/CBI references (from 37% in 2011 to 39% in 2013) is a positive sign for future coordination.

Use of BIM collaborative protocols

Do you use IFC (Industry Foundation Classes) on your projects?



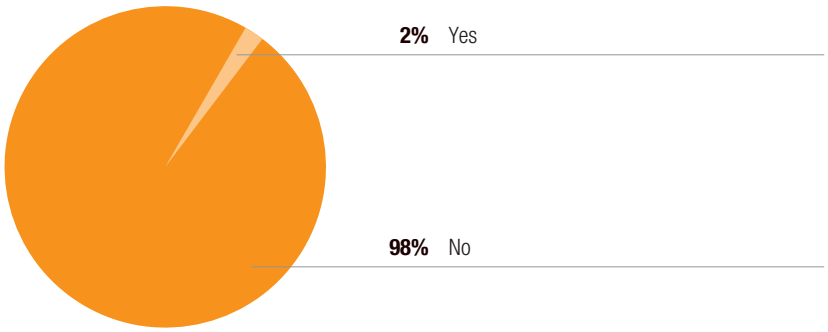
"Coordination of BIM model information is not yet taking place successfully."

"Until a unified file type is prevalent BIM will struggle."

For those not familiar with the term: IFC (Industry Foundation Classes) is a neutral and open data format that is not controlled by a single vendor or group of vendors.

This new question in the 2013 survey is likely to be responded to more by serious BIM users and is unlikely to reflect an overall industry view. Nevertheless 36% answering "yes" shows that neutral formats are a viable option, both in their understanding and use. This may reflect the employment of IFCs in some tools (e.g. ArchiCAD).

Do you generate COBie on your projects?

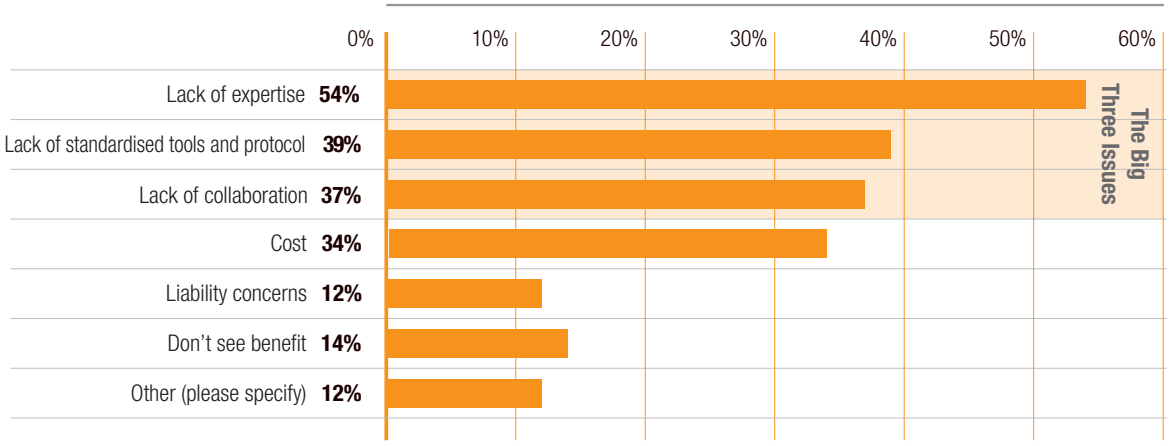


For those note familiar with the term: COBie (Construction Operations Building information exchange) is a data format for the publication of a subset of building model information focused on delivering non-geometric building information and relates to completed building projects and facilities management.

A new question for 2013. The very low response indicates that BIM has yet to move to the facilities management phase of construction projects.

Barriers to BIM adoption

What are the main barriers to using BIM?



"I suspect BIM is expensive"

"Proper execution of BIM requires significant skill."

Clearly the "big three" issues are lack of expertise (54%) lack of standardised tools (39%) and lack of collaboration (37%). Cost (34%) is a factor with any computer-based system and is not directly related to BIM adoption, which is as much a change in attitude as the need for new, expensive tools. The high concern about "lack of expertise" shows that industry guides and training are needed.

This question also allowed respondents to state in their own words what the barriers were, instead of selecting from the structured list of reasons. 53 respondents answered in this manner. The responses were wide-ranging, however 14 blamed finding the time, or expressed concern about the time taken to retrain, while another 7 believed that BIM was not appropriate for their type/scale of project and 6 stated it was too early to consider adopting BIM.

While only a small snapshot of concerns, it does indicate that time and cost (17 of 53) is a significant issue for those yet to adopt BIM. Underlying this may be a need for readily available guidance and training, especially for the small and specialised consultant; as well as a need for standardised tools and protocols.

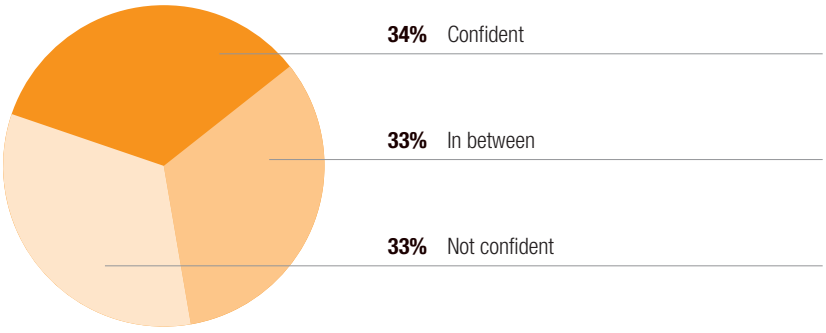
"Retraining to use BIM software is my main hurdle."

"BIM is good, but only a tool, and a tool needs to be used correctly and intelligently."

"The younger ones with natural BIM aptitude lack the building knowledge and experience."

"BIM has to be an industry standard for all professionals to adopt collectively."

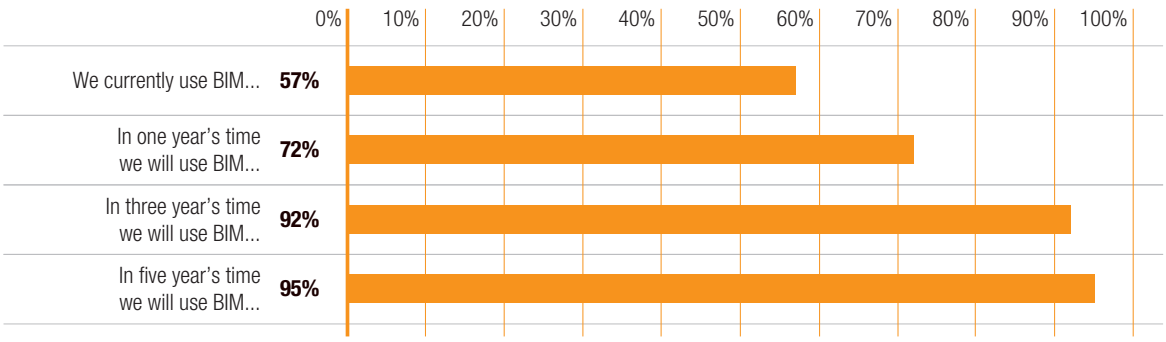
How confident are you in your knowledge and skills in BIM?



An interesting response to this new question, with 67% indicating a degree of confidence. The 33% lacking confidence supports the need to provide industry guides and training if the proper adoption of BIM is to become a reality.

BIM the future for the construction industry?

The future of BIM



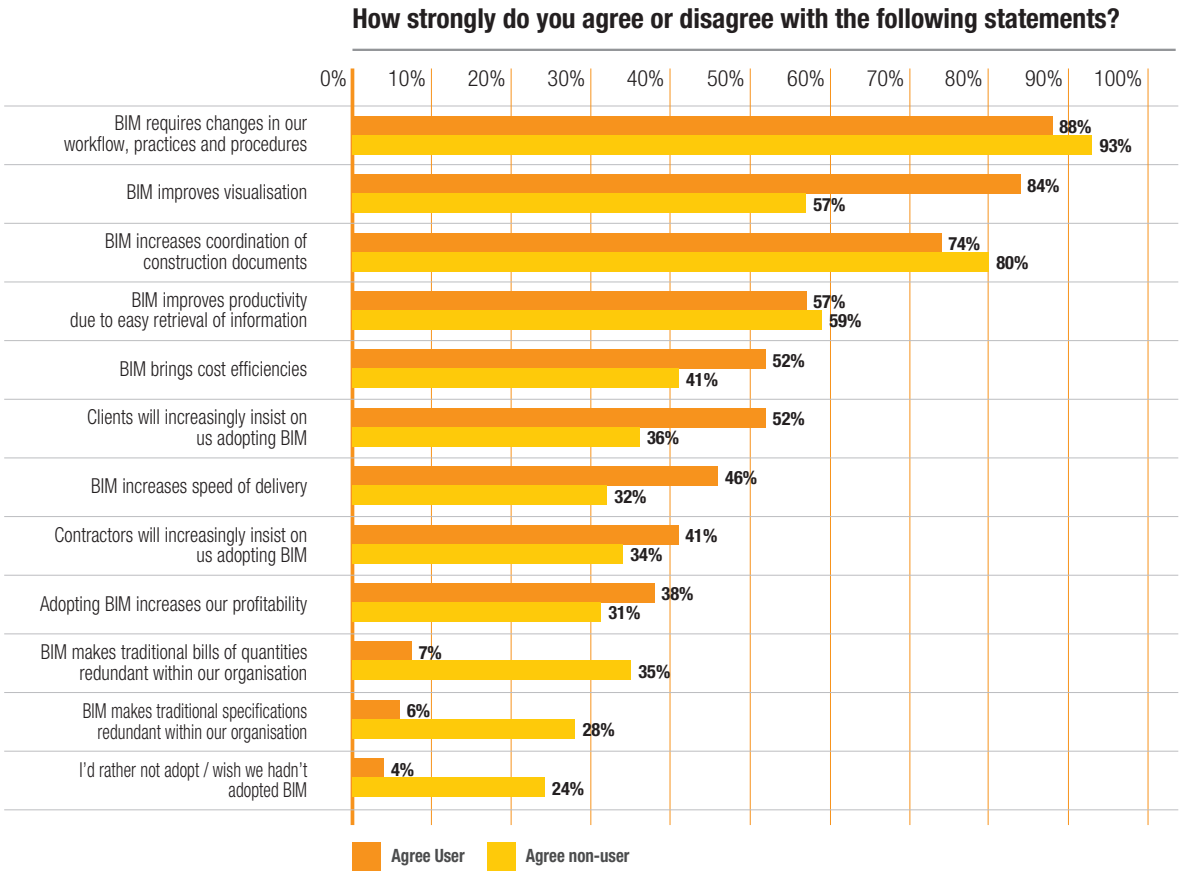
"The key benefit is improvement in communication between all parties."

This shows a solid increase in those who currently use BIM (38%-57%) and those who expect to use it in 1 year's time (68%-77%).

From your experience of using BIM, how strongly do you agree or disagree with the following statements?

"BIM will drive the industry towards medium and large businesses."

88% understand that BIM will require changes in practices and procedures, with 74% believing that it will increase coordination. A strong 46% believe that BIM will increase speed of delivery and 38% see the potential for an increase in profitability. The potential for BIM adoption to add value is clear.



"BIM would be very useful if more manufacturer information was available."

"BIM requires a lot of decisions to be made very early in the life of a project."

"BIM needs further exposure to the contractor's side of the industry."

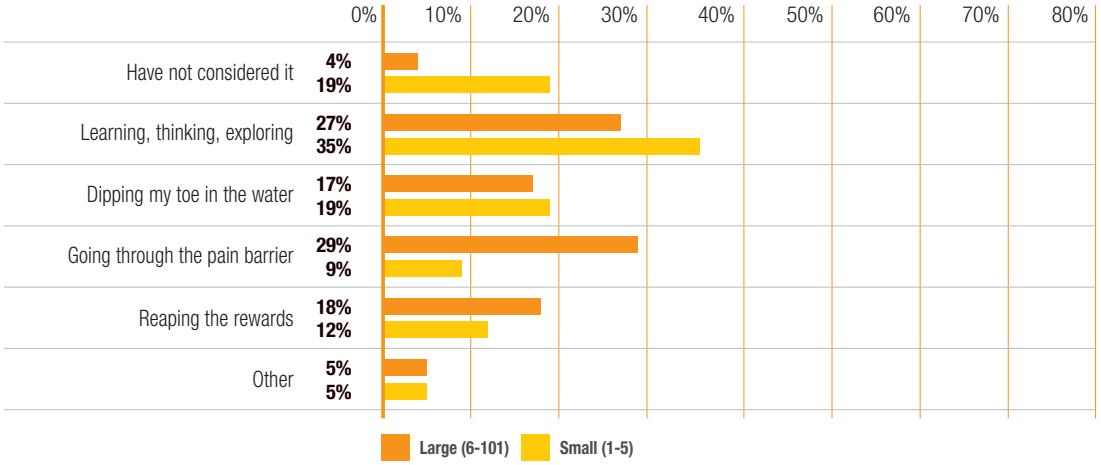
The response of both current users of BIM and those with only a general understanding of BIM are combined in this graph. The most striking differences are between users and non-users around the future of traditional bills of quantities and traditional specifications. Those using BIM are much less likely to believe that traditional bills and specifications will become redundant.

(It is pleasing that only 4% of BIM users wished they had not adopted BIM.)

BIM and design practices Small versus large organisations

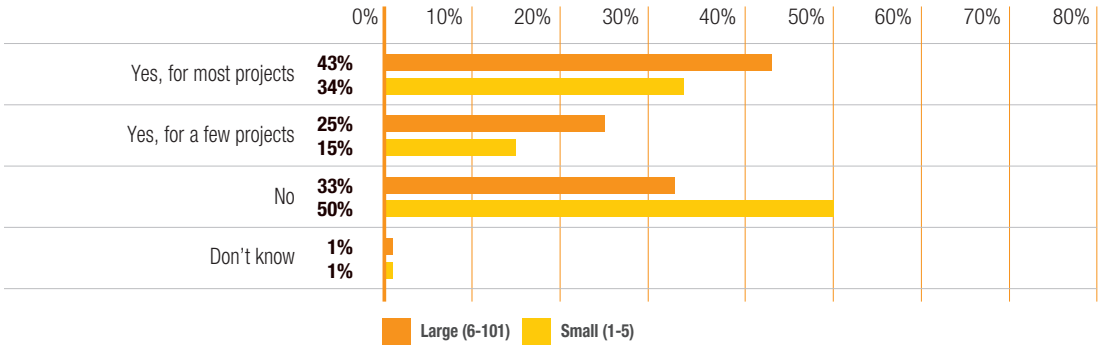
Analysis of the responses to some of the survey questions showed some significant differences between small organisations (1-5 staff) and medium-large organisations (6-101 staff) and between architectural and engineering/multi-disciplinary design practices.

Where on the BIM journey are you?
Large versus small practices (large 6–101) (small 1–5)



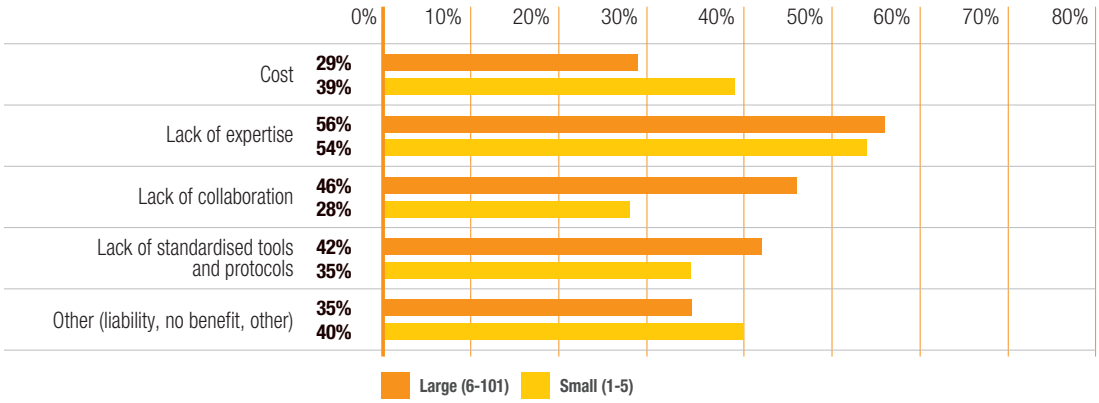
The graph shows that a larger number of medium to large organisations have adopted BIM for most projects (42% versus 34%) and for a few projects (25% versus 15%), while 50% of smaller organisations have not adopted BIM for any projects. This indicates that larger organisations may be both willing and able to adopt BIM earlier and more frequently than smaller organisations.

Within your organisation, have you adopted BIM for your projects?
Large versus small practices (large 6–101) (small 1–5)



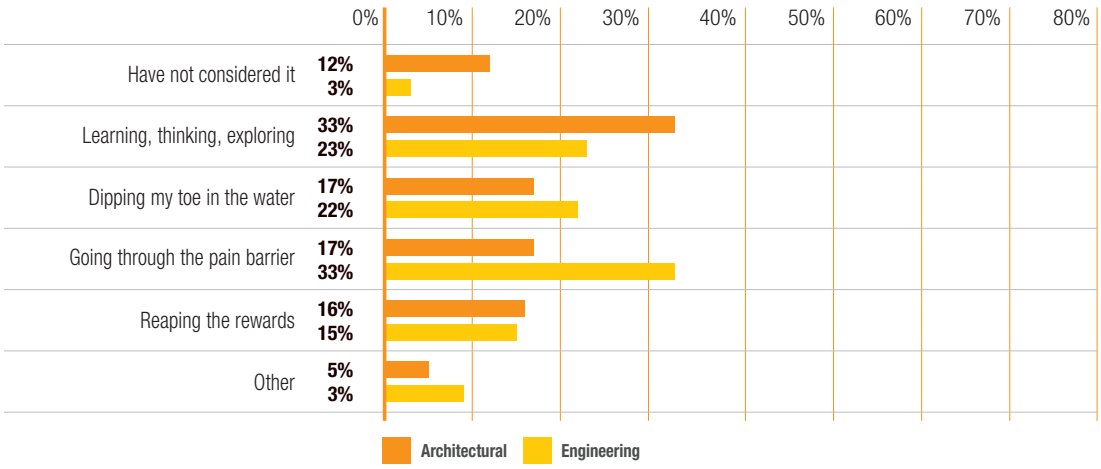
The larger organisations seem more likely to have gone through the pain barrier of BIM adoption (29% versus 9%) and are now reaping the rewards (18% versus 12%) as against smaller organisations. Conversely more smaller organisations (35% versus 27%) are still at the learning phase and a significant number (19% versus 4%) have yet to consider it.

What are the main barriers to using BIM?
Large versus small practices (large 6–101) (small 1–5)



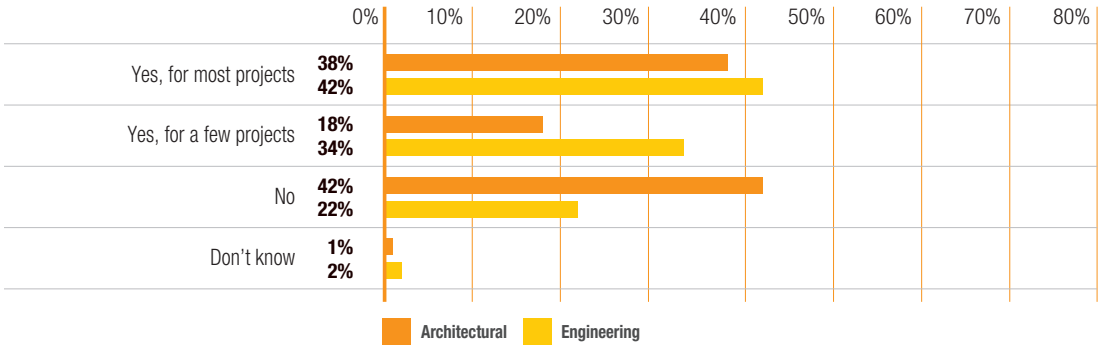
Smaller organisations see cost as a significant barrier (39% versus 29%) than larger organisations. Conversely a greater number of larger organisations (46% versus 28%) see lack of collaboration as a significant issue. This may also reflect the fact that larger organisations are likely to be working on larger and more complex projects with a consequently increased need for collaboration.

Where on the BIM journey are you?
Architectural versus Engineering / Multi-disciplinary practice



Engineering and multi-disciplinary practices are more likely to be already dipping their toe in the water (22% versus 17%) and going through the pain barrier (33% versus 17%) than architectural practices. The balanced response to "reaping the rewards" (16% architectural and 15% engineering and multi-disciplinary) shows that all types of practice are now seeing the positive sides of BIM adoption.

Within your organisation, have you adopted BIM for your projects?
Architectural versus Engineering / Multi-disciplinary practice

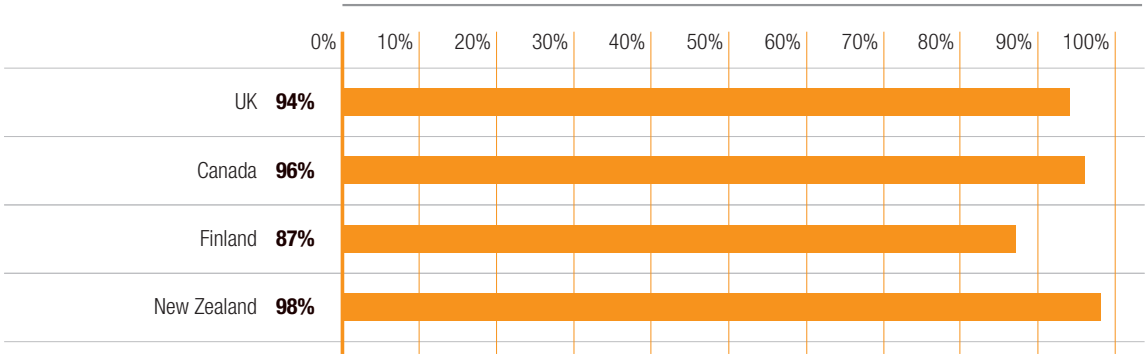


A significant number of architectural practices are yet to adopt BIM (42% versus 22% for engineering and multi-disciplinary practices). While both types of practice have adopted BIM for most projects (38% versus 42%) there are more engineering and multi-disciplinary practices (34% versus 18%) who have adopted BIM for at least a few projects. This is a positive sign for projects involving a range of design disciplines, who are likely to reap greater rewards from adopting BIM technology than smaller, more focused practices.

An international comparison

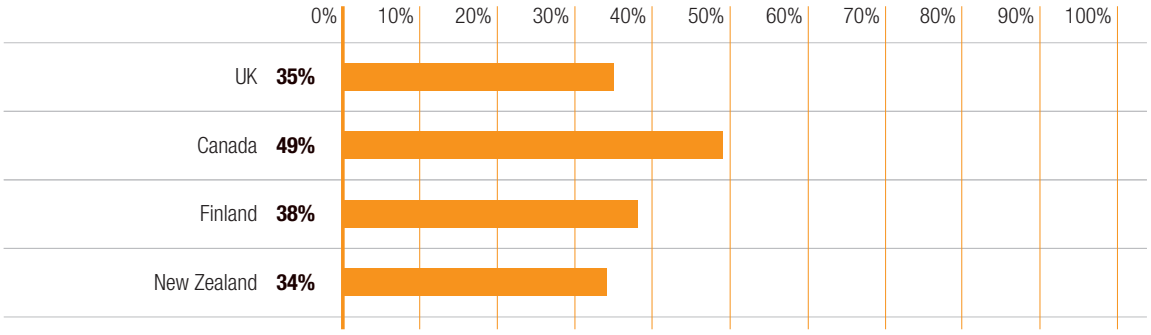
Parallel surveys were carried out in three other countries, offering useful comparisons with the results gained from the New Zealand BIM survey. These other countries were the United Kingdom (UK), Canada and Finland. All three countries have shown a strong engagement with BIM and along with New Zealand, are also members of the International Construction Information Society (ICIS).

Awareness of BIM



While New Zealand's response is tabled as highest, the results from three of the four (98%, 96% and 94%) are close enough to show that awareness in the three countries is much the same. Finland at 87% shows a slightly lower response but still within a close range of the other three. This comparison is heartening as it shows New Zealand is taking the subject of BIM adoption seriously and its progress is in parallel with the rest of the Western world.

% of respondents who are confident in their knowledge and skills in BIM

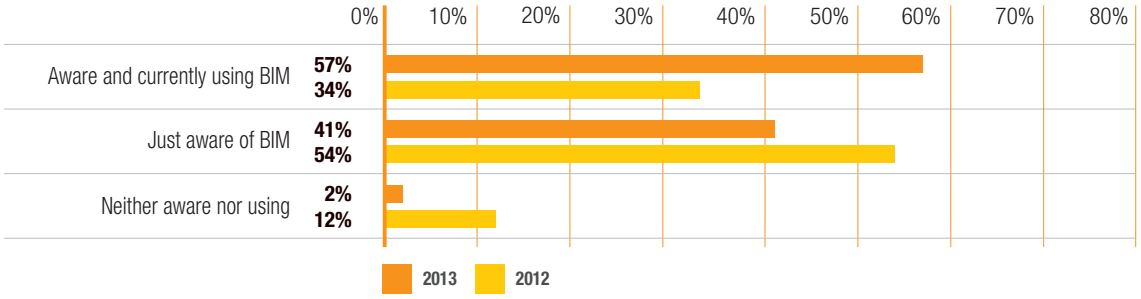


The Canadian result is an exception, as it has been reported that the survey in Canada was focused more on those already engaged with BIM. The close range of the results from the three other countries (38% to 35%) once again supports the view that all are taking a move to BIM seriously. This augers well for New Zealand who should therefore be able to take advantage of advances in knowledge and the development of supporting tools and guides from other countries.

Industry changes

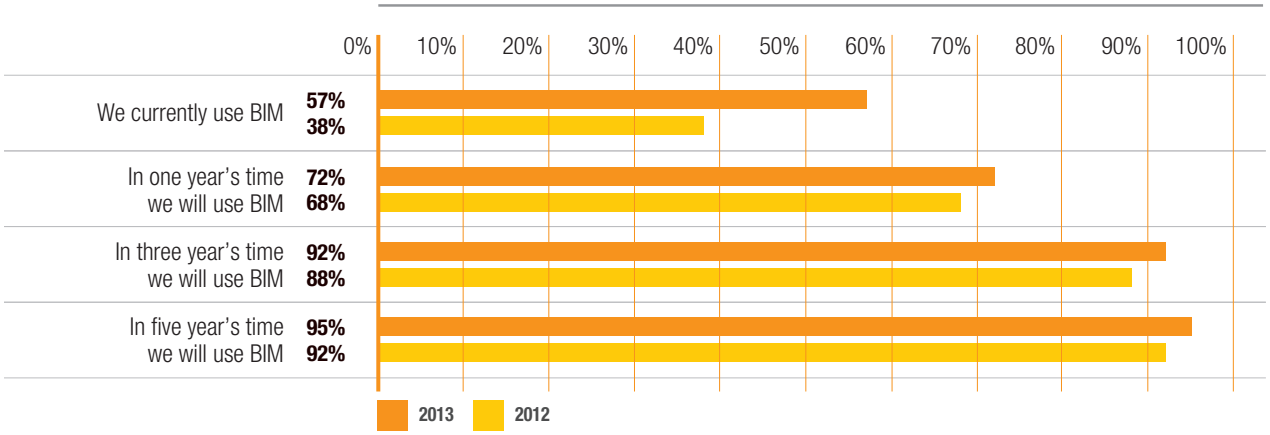
The following graphs combine the changes in response between the 2012 and 2013 surveys to the questions: *Awareness and use of BIM* and *The future of BIM*

Awareness and use of BIM



There has been a significant shift in those aware of and currently using BIM; from 34% in 2012 to 57% in 2013. Only 2% of respondents said they were not aware of BIM, as against 12% in 2012. These are significant shifts, indicating that the industry accepts that BIM is an important factor in future industry activities.

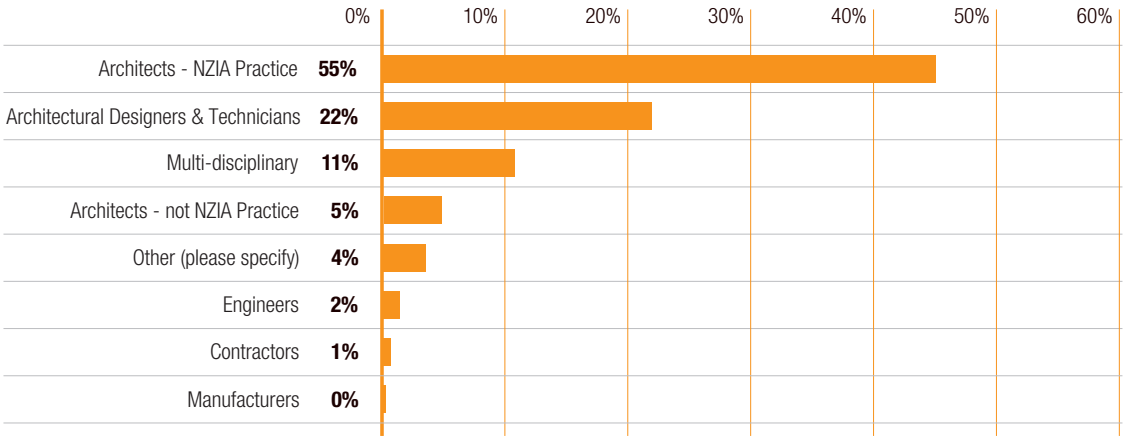
The future of BIM



The number of respondents currently using BIM has increased from 38% in 2012 to 57% in 2013, which closely parallels the response to the previous survey question on those currently aware of and using BIM (34% to 57%).

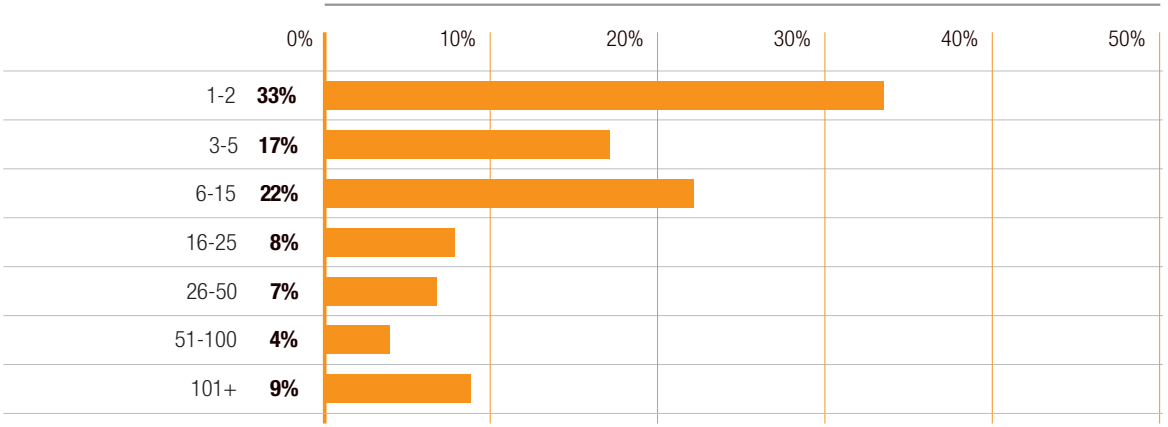
Survey respondents' details

Organisation's type of business



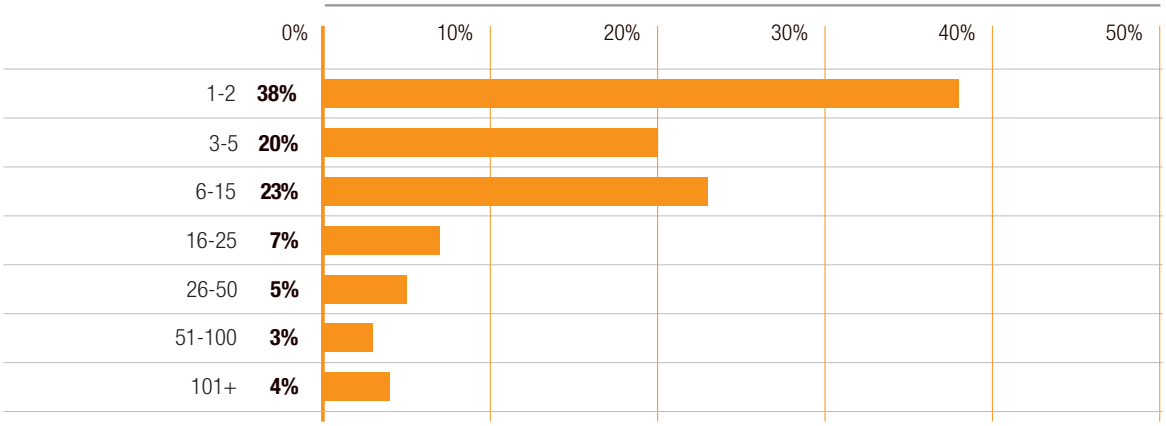
With 82% being architectural this reflects the response to the earlier questions. However the response also indicates that the number of engineering firms in the survey (11% multi-disciplinary + 2% engineering) is higher than indicated by responses to earlier questions.

How many people are employed in your organisation?



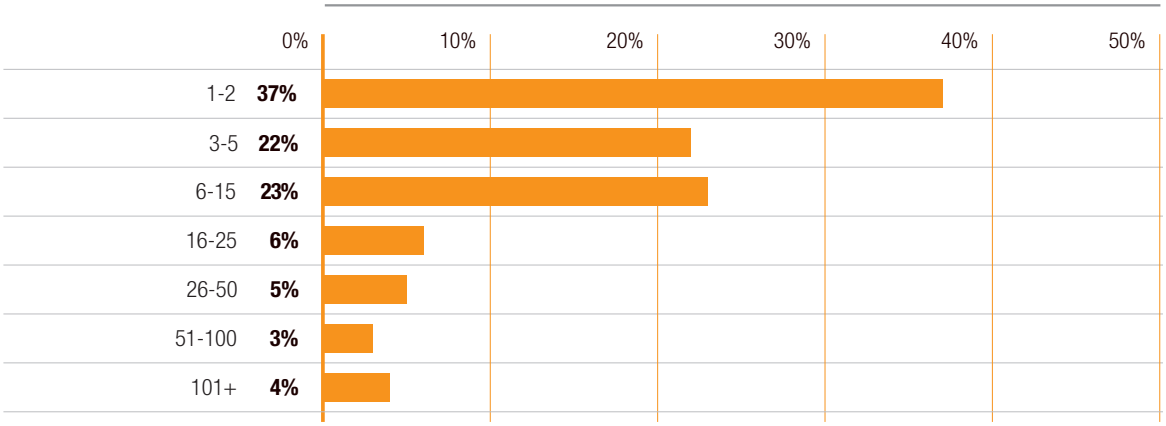
50% of respondent's firms employ 5 or less people, with 13% of respondents being from firms with more than 50 people. This closely reflects the overall profile of the design industry and shows that adoption of BIM may still be relatively difficult (i.e. expensive) for the majority.

How many people in your organisation are directly involved in building documentation and drawing?



The results show that 38% of respondents work in organisations where only 1-2 people are directly involved in building documentation and drawing.

How many people in your organisation are using CAD software?



In this case the results show that 37% of respondents work in organisations where only 1-2 people are directly involved in using CAD software.

Michael Thomson
Director

Peter Jeffs
CAD/BIM Manager

For and on behalf of Architectus
Bowes Clifford Thomson Ltd

architectus™

Rocky Road to BIM - a design professional's viewpoint

So the future has arrived, this year's survey reports that over 50% of the respondents are using BIM and within 3 years the figure will be over 90%. Thrilling stuff, as we embrace the new parametric virtual world of intelligent models. It's been hard work, and there has been a lot of pain on this road but we suspect, that like the confectionary, there's a fair bit of marshmallow involved.

We still have not seen a BIM project carried out in this country. That is a reasonable size building with a fully integrated intelligent model carried forward into the construction phase, integrated with the programme and cost estimating and used for fabrication and shop drawings. Let alone being developed into the fabled LOD 500 model and linked to the facilities manager's databases for the ongoing management of the building.

But of course we are wrong as 57% of the respondents are using BIM? No of course not, what we are doing is using 3D modelling with varying degrees of intelligence, and in the best and most organised cases we are producing co-ordinated architectural, structure and services models that form the basis for a true BIM project.

We have made enormous strides over the last few years in learning to work together in a co-ordinated fashion, but there is still a long way to go. There is a large culture shift needed in the way various consultants approach the drawings. Services consultants particularly seem to have had to undergo a major shift in focus away from doing diagrams to modelling real objects. It is gratifying to see that generally they are making real progress. There is also real progress being made in setting standards and protocols such as the imminent NZ BIM Handbook being prepared by MBIE and the Building Industry Productivity Partnership, and in setting up a national BIM Library to standardise delivery of content (components, families, etc.).

What is needed now is for the contractors to embrace BIM. They are the ones who stand to make the greatest savings and productivity gains by using intelligent building models. They are already to varying degrees, and some are genuinely advanced in their capability, but the take up and knowledge throughout the industry is very varied. Once it becomes more widely adopted we can start to see the benefits from the work we have been setting foundations for.

In the words of Yusuf Islam (also known as Cat Stevens) "I know we've come a long way, We're changing day to day,…." but there is a long way to go, and one thing is certain you cannot do it alone. In our office and others we have made massive investments in time and money to try and tame this beast. But the challenges and management issues are too massive to think individual organisations can operate alone and claim special knowledge. If it all comes to fruition we are looking at a fundamental change in the way we produce and share information that really does involve genuine collaboration and a need to forgo for the moment selfish commercial imperatives (not forgetting the liability issues). We do not think that the consultants will necessarily be the driving force behind the adoption of BIM. It will be the contractors, the government and the client/owners such as the universities and the hospitals when someone can get on top of software that will genuinely allow them build a virtual database of their buildings.

Richard Capie
GM Research Strategy

BRANZ

Accelerating the uptake of BIM in New Zealand – the door is open

Looking at the latest forecasts for building and construction activity it is clear that New Zealand industry is going to be very busy over the coming decade. This coming "wall of work" presents a golden opportunity, but also presents some significant challenges - getting and keeping skilled labour, managing inflation pressures, developing supply-chains, managing health and safety risks, improving access to working capital to name a few. One of the greatest challenges remains around levels of productivity; concerns that have been well-highlighted by the government-industry Productivity Partnership.

If industry is to fully capitalise on the volume and nature of work on offer then it's clear that productivity also needs to improve. But this productivity increase isn't likely to be achieved by incremental improvements alone, it will require transformational change where it can be found.

We are starting to see how the power of technology can be applied to change the way we work and improve the buildings being delivered for clients. In our industry, much of this potential is discussed in the context of increased BIM adoption and use. As this latest CIL survey shows, the level of penetration and pace of take up of BIM in New Zealand is accelerating rapidly. Perhaps the most compelling statistic is the expected almost doubling of BIM use in the next three years.

If adoption of BIM does become this widespread then it could significantly change the face of the New Zealand building and construction industry. The benefits being realised here and offshore are well-documented – improved speed of delivery, significant reductions in mistakes, elimination of costly re-work, avoidance of clashes, improved procurement processes, effective whole of life modelling, improved facilities management. In short, improvements across every stage of a building's development and use.

The numbers are equally compelling. Most international studies on BIM identify cost savings of between 7% and 20% on a project. And while these savings will vary from project to project, the message appears to be consistent – there are real productivity gains at stake and significant benefits on offer for both businesses and clients.

The recently published Industry Research Strategy, Building a Better New Zealand, developed by BRANZ, CIC, CSG and MBIE, is clear about the importance of BIM to our industry and economy. That is why BRANZ has been so keen to support the acceleration of BIM in New Zealand through investment of Building Research Levy in key projects.

BRANZ has also been working hard to bring our own resources and capability up to speed. As a key provider of information and resources to industry we want to make sure that the information we provide will work in an increasingly BIM influenced environment.

Looking ahead, it looks like the next few years will provide not only an opportunity to leave a lasting legacy of better buildings, towns and cities, but could also leave a lasting mark on industry as well. The changes around how we conceive, design, consent, construct, certify and manage buildings could be profound.

Andrew Reding
Chair - Construction Systems Work Group

BIM – The Building Industry Productivity Partnership Perspective

Over the last two years the Productivity Partnership has carried out a number of projects researching ways to improve productivity in the New Zealand construction industry. The results can be viewed by visiting the website www.buildingvalue.co.nz.

No other initiative has been identified as having as much potential to create a step-change in productivity than accelerating the introduction of Building Information Modelling (BIM) or Building Information Management as it is becoming more commonly known. Its potential is magnified significantly by ensuring that BIM models are inter-operable and can be part of a data rich environment that will include national online consenting and location based information systems. This resulting data-rich environment will be exploited in ways it is difficult to forecast today, but will include city planning modelling in a way that has been impossible historically.

To enable BIM inter-operability the Productivity Partnership has sponsored the creation of a National Technical Standards Committee (NTSC) whose role is to promote open data standards. Membership of the NTSC includes representatives from stakeholders within the construction industry: architects, engineers, quantity surveyors, constructors, local councils, central government and universities.

Further work is being done with the Government to accelerate the introduction of BIM, ideally through its use on significant public sector construction projects. Part of this work includes ensuring adequate infrastructure will be in place to support the use of BIM on these projects. To this end, a New Zealand BIM handbook is nearing completion and ideas for an industry-wide generic BIM object library are being investigated. Furthermore, educational institutions are looking at co-operating in producing training modules for BIM covering all qualification levels.

The Productivity Partnership is very supportive of the work being done by Masterspec in surveying participants in the New Zealand construction industry to understand how the introduction of BIM is proceeding.