

APRIL 2012

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THE FULL MEASURE

NEW PREMISES IN CHRISTCHURCH:

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Current Projects

Wellington Office

ASB Tower
Wesley Haven
Queen Margaret College
Ronald McDonald House
Wellington Zoo The Hub
Summerset Hastings
Summerset Hamilton
Luxford Villas
Newlands New World
Island Bay New World
New World Whitby
Stoddard Road
Foodstuffs Kiln Street Fitout
DOC—Taupo & Hamilton

Auckland Office

Rotorua Police Station
Alpha Labs
New Lynn TC Gt Nth Rd
Sunnydene Special School
Sir Keith Park Special School
Shed 10 Cruise Terminal
Kelly Tarltons Underwater Stg 3
415 Great South Road
Waihi Gold Discovery Centre
Otautau Stonefields Centre
MOE Kura Redevelopments

Queenstown Office

Barley Station
Ardmore St Development
Fong/Gabler Residence
York Street
Aspiring Lifestyle Village
Styles Apartments
Fryer Street Development

Christchurch Office
Earthquake Damage
Scoping
Norsouwest
Ashburton Museum & Art
Gallery
Methodist Church

MATAATUA WHARENUI

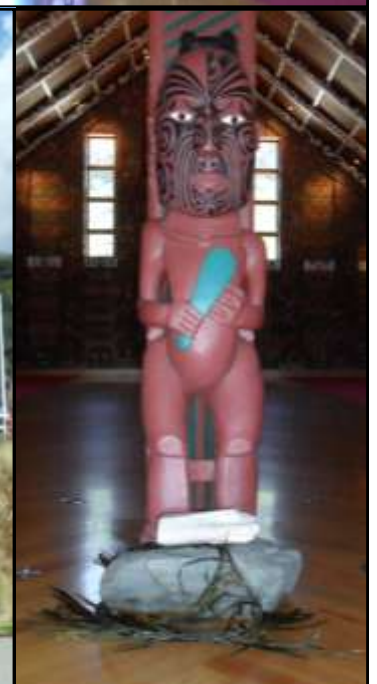
The Ngati Awa's Wharenuui meeting house in Whakatane was dismantled and exhibited around the globe by the Crown only 5 years after it was first opened in 1875. It finally returned to New Zealand in 1925 where it was displayed at the Dunedin Museum for the next 70 years. Following a treaty settlement with the Crown and Ngati Awa in 1996, its final voyage back to Whakatane began with its careful restoration over many years culminating in its installation from 2010 for the grand reopening 17 September 2011.

Design Tribe Architects produced the final Wharenuui plans along with DWP Architects with the surrounding modern Wharekai and Interpretation Gallery buildings which developed overall into a \$6.1m showpiece. The Tauranga contractor Marra Construction Ltd had the main construction contract totalling a final \$4.6m all under the auspice of Whakatane local project manager Hawiki Ranapia of G.H.Management Ltd on behalf of Te Runanga O Ngati Awa with the assistance of Maltbys Ltd.

Maltbys Ltd provided full Quantity Surveying services from the various concepts and feasibility stages right through to the agreement of the final account sum with the contractor.

More information on the journey of Mataatua Wharenuui and exploring this extraordinary house can be seen at

<http://www.mataatua.com>



MALTBYS

RICS Extract February Edition

How does BIM affect Quantity Surveyors and Project Managers?

What types of clients are using BIM?

Public sectors such as health and rail are using BIM - partly due to the recent UK government drive to increase take up by 2016 and improve public asset performance in cost, value and carbon performance. PFI projects show how to successfully utilise BIM through their life cycle (e.g. St Helens and Knowsley Hospitals). The private sector is gradually realising the long-term benefits of BIM - from retail (e.g. Asda and Waitrose) through to commercial landlords. Commercial pressures of lower rates of return and the constant reassessment of viabilities are driving developers to find alternative ways of making projects more 'lean'.

Where is the UK on the BIM learning curve?

Scandinavia and North America are ahead of the UK. In 2007, Finland and Denmark mandated BIM use on the public sector projects. A 2010, McGraw-Hill study found that 36% of western Europe (UK, France and Germany) respondents used BIM versus 49% in North America. The 2010 UK rate of adoption was 35%, led by architects (60%), engineers (39%) and contractors (23%). A 2011 BCIS study of the UK and US members found that 10% of QS's and 3% of BS's were regularly using BIM and a further 29% of both have had some limited engagement.

Consultants with multinational clients and international offices are often further ahead than their UK only counterparts. Multinational clients and consultants are assisting adoption of BIM in the UK through their knowledge of what BIM is, when to use it and how it can provide better value and competitive advantage.

What is the speed of uptake in the UK?

Many projects are on different parts of their BIM journey, which has three levels. Most of the UK is still at Level 1 (managed CAD 2D or 3D) while some are seeing the benefits of Level 2 (managed 3D environment utilising 4D time or 5D cost). Organisations will adopt new systems at different rates and their BIM journey will depend on industry/client push/pull. In the McGraw-Hill study, 34% of Western European BIM users have been using it for over 5 years. However, growth has been relatively flat until 2009-10 when it increased by 20%. As in North America, there are indications that BIM use will be surged among UK contractors to over 50% by this year.

Is BIM suitable for refurbishment projects?

A US NIBS study identified 5% net savings in capital costs for new build and 1.5% for refurbishments, so although the capacity for savings is less, there is still an improvement (it did not discuss post-occupancy savings, which should be similar across both users). 3D surveys of existing structures can create models for refurbishment and maintenance projects but should be treated with caution as constructing a model for an existing building will require assumptions about construction methods, materials etc.

Is BIM applicable to projects under £20m?

Large or repetitive projects (e.g. By repeat of a product such as housing units, or in terms of roll-out such as retail outlets) will enjoy the greatest advantages. The UK government recommendation for public projects covers those down to a value of £5m. Bespoke projects (e.g. using many innovative components) will have reduced benefits. However, a bespoke building will need greater co-ordination and supply chain integration and may still benefit from BIM.

RICS continued

What impact will BIM have on fees and PII?

Clients may use BIM to drive consultant fees even lower, however, new roles (eg. BIM manager) and therefore new business opportunities could compensate for this. QS's will have to perform more detailed reviews of the model than previously with 2D information. Time saved on measurement / quantification will allow design and value analysis, and option analysis to take place, requiring senior consultant expertise. This should be judged by 'value add' and not considered a resource-based fee. This front loading may change the fee profile, but not necessarily the overall amount. Insurance and liabilities are considered as barriers to BIM adoption, however, this will depend on the BIM maturity level for each project. Where the managed data is held in separate discipline BIM tools (including time and cost tools) and data collaboration occurs at specific milestones, then liability fundamentals will not change. Moving to a fully integrated environment, managed through a collaborative model with all of its datasets and attached data, means PI structures will need considering (e.g. 'project PI' insurance bought by the client). The UK government is thought to be reconsidering a 'no fault' project insurance for BIM and, as adoption matures, the insurance market will reflect the change in risk to consultants..

What are the benefits for the QS?

These include:

- visualisation will help assess scope gaps when costing and tendering
- real time costing will allow immediate decisions, removing abortive designs and reducing design/cost programme timelines
- producing quantities in hours/days rather than weeks/months, releasing time to review building efficiencies and other key performance indicators
- carbon-estimating software can be linked to the model
- programme analysis will facilitate reviews of preliminaries, valuations and claims for delays
- clash detection and improved co-ordination will reduce the number of instructions and limit unforeseen costs and delays, reducing the provision of cost risk post-contract in the form of site contingencies and builders work allowances
- opportunities to use BIM data for facilities management and create savings over the asset life cycle

How will BIM affect small practitioners?

They will need investment in software and hardware, development of internal procedures, training and marketing of their new capabilities. If clients can see the costs/benefits to a project it might encourage them to share some of the early pain/gain of implementing BIM and help pay for some elements, e.g. Software training. Some model data may only need 'read only' access so software licenses may be inexpensive or even free. If upfront costs become significant, smaller companies may struggle, especially if clients ask them to work 'at risk'. A small practitioner should, however, be able to change working practices more easily and quickly than a large organisation.

Does BIM imply a fundamental change of processes?

Attaining BIM benefits may require:

- changes in working methods and culture, stakeholders must improve team working and minimise silo mentalities
- plan of work changes as technical designs and specifications can be bought forward and closed out earlier, reducing risks during the build
- review of procurement routes in terms of rolls and responsibilities of the design team and on the contracting side
- under contractor-design contracts, some deliberation of when 'ownership' of the model passes to the contractor.

RICS continued

What are the accuracy issues around quantities?

Like 2D CAD drawings, designers must model to scale and end users should always check the scale is correct. With the integration of different models (e.g. architectural and structural), it should be possible to highlight any errors immediately, but there is no automatic check to ensure scales are correct. Each model consists of standard components selected from a library, allowing schedules of components to be formed - if the wrong component is selected the schedule will be inaccurate. An example of this would be a set of columns incorrectly drawn using a beam component. The column would look identical to others when viewed in the model but the schedule will pick up the wrong type of component and quantification will be wrong. There is no automatic check for this. All components have their own property sets that include standard information e.g. steel columns include m²/ linear metre and kg/linear metre, which allow surface area and tonnage calculations. The components are all modelled to size and schedules are produced using the property set information. If this is correct, the output will be compromised. While existing libraries of components are tried and tested, new component libraries should be reviewed to identify errors. While the model can detect clashes and highlight the critical path, it cannot detect human error. This also applies to 'scope gaps' within drawings and checking will still be required for missing items and quantities that do not tie up.

What skill do PMs need to implement BIM?

Establishing BIM on a project requires a client who understands the upfront costs (in return for future benefits) , a good BIM protocol and a procurement strategy that constrains silo thinking. The PM may need to guide a client through the business case for adopting BIM and the changes to skills, roles and responsibilities. From a skills perspective, BIM is business as usual with the same processes and controls except for a modified management information system/document protocol, roles and responsibilities, and procurement strategy. The role of 'BIM manager' should be considered and the responsibilities they would adopt. The primary issue for PMs is the management, control and interfacing of a data-rich environment that, depending on the maturity level, may be heavily integrated.

Can models generate programmes or risk registers?

Using software such as Navisworks, BIM allows programme sequencing to be modelled visually, meaning more rigorous interrogation and possibly significant time saving. As BIM is a way of managing data during a building's life cycle it is possible to link expected sequencing with their components, and thereby produce an automated programme. However, BIM is only as good as the input and it is likely that, as schemes become more detailed and external/abnormal factors need considering (e.g. Night-time working), additional manual manipulation will be needed. Generic risks can be embedded into the model components and then scheduled out. This would pick up risks regarding the construction works, e.g. clashes and specification risks such as curing times. But it would not necessary highlight issues that are more specific, e.g. those influenced by third parties, such as failure to close out planning conditions. Again, as the design develops more detail, a manual consideration of risks will be required.

RICS continued

What are the benefits for the PM?

These include:

- updates can be dynamic, removing some risks associated with data management
- increased confidence and risk reduction, such as design co-ordination (e.g. structure and services), construction logistics and timelines
- cost and programme implications, ideally, would be real time (but will need a sense check to understand all the implications, e.g. whether weekend working is required)
- improved communications between the PM, stakeholders, owners, end users, third parties and within the project team
- the project team and client can visualise, stimulate and analyse a project before actual construction begins. It allows the visualisation of phasing and subsequent impact on logistics, cash flow and sales (e.g. you cannot sell prime residential apartments if they face construction works)
- integration of design and programme increases confidence in completion dates and refines project preliminaries
- depending on a projects position on the BIM maturity model, change management should be simplified and easily identifiable (what will not be evident is why the change is being considered) and the change impact will immediately be reflected throughout the model
- if performing design management, BIM will co-ordinate a change made anywhere in the model: in 3D views and drawing sheets, schedules and elevations, sections and plans, and scope gaps can be checked for
- for performance management of the design and construction team, the design updates and readily available (or as parts are designed off-line, tested and uploaded to BIM) for performance review and checking against programme
- BIM is updated during construction to create an 'as-built' record and the model becomes a record to support facilities management. The objects link to data about each component, which facilitates delivery of the building record documents.

How is BIM being integrated into the supply chain?

Suppliers can be adept to change, especially if they produce a small range of products. They will have fewer staff to up-skill, change will occur to fewer products and technology changes will be for a small group. But they will have to change how they interface and deliver information to others. Suppliers of standard components, e.g. Schuco cladding systems, are already producing components for importing into models. Due to their different sizes and resource abilities, sub-contractors will have the greatest range of BIM integration and adoption. Predominantly labour-based trades are in no rush to adopt BIM, while those linked to forms of production (e.g. steelwork) have been utilising BIM in some form for years. Some main contractors have embraced BIM and are differentiating themselves with new offerings. They can be seen as competitors to designers and QSs as they offer a 'one-stop shop'. Contractors can also improve their margins by benefits in logistics, reduction in waste, improved product delivery management, design co-ordination, clash detection and delivery of a quality product.

This article was extracted from the RICs magazine February—March 2012 and written by:

Dawn Smith (a partner with EC Harris)

New Faces

Bernard Chapman

“Hi everyone, my name is Bernard and I am a born and bred Aucklander now living in the Capital. In January this year my wife, Clare-Louise, took up a position as Executive Assistant to Auckland Central Labour MP Jacinda Ardern and as a result moved to Wellington. I meanwhile was working for RLB in Auckland until April when having met with both David & Tony on separate occasions they offered me a position in the Wellington office. I have now been based down here for coming up 2 months and am enjoying all the challenges that a new job, home and city can bring.

My wife and I have been married for roughly 2 ½ years now and currently have no children that I am aware of! In terms of personal interests, I am generally a very social person who will always be up for a casual beer and have somewhat of an addiction to sports. Prior to moving, I had been playing indoor soccer up to 3 times a week fairly competitively and also have played club soccer and cricket at various stages over the years and will look to get back into it all once life settles down a bit. As with most New Zealanders I also love to watch rugby and spent an obscene amount of money (wife’s words) on tickets to last year’s world cup, going to roughly 11 games in the end, including the semi’s and final in Auckland.

To conclude I feel I am settling in well in Wellington and at Maltbys and am looking forward to making a new life and career for myself in our country’s capital.”

Think that’s more than enough about me!



Woody Bruce

Hi, I’m Woody Bruce. I have recently been doing some work experience in the Wellington office in my holidays. I’m in my first year studying Quantity Surveying and Construction Management at Otago Polytechnic. I have just had two gap years travelling, riding my bike and working in different countries around the world. I enjoy all sports. I’ve thoroughly enjoyed working at the Maltbys office and find it’s a great atmosphere. Everyone is very friendly and keen to help out. I have learnt a huge amount. Looking forward to coming up in the June/July holidays!

Elated Woody, at the top of Mt. Tongariro arriving before sunrise. Well done Woody.



MALTBY'S

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SOCIAL EVENTS

Auckland Children's Christmas Party



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Auckland

Children's Christmas Party / BBQ

The Auckland office were fortunate to get lovely weather for the Children's Christmas Party and BBQ. Arthur bought his BBQ and Kendall and Huw bought chilli bins and tables. We were fortunate enough to set up under a pohutukawa tree that offered shade. Kendall was the Father Christmas substitute and gave all the children their presents once they were all sitting nicely on the mat. In exchange for a present Kendall got lovely cuddles. We can see how wonderful Kendall was with the children and understand why she wants to make a career in early childhood. Well done.

Fishing

Once again it was the annual fishing competition to challenge for the Arthur Gabriel Trophy. This years trophy was really fought for with Gary Townsend winning by the slightest of margins. We had the most amazing boat and skipper who took us to the best fishing spots inside the Auckland Harbour. The fish just kept on coming and we all went home with 7 snapper for the BBQ. The Americas Cup boats were out racing and what an amazing site up close of how big they really are.



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Wellington

On May 1st David, Tony and Richard took some lucky clients to the Ronald McDonald House Supper Club.

This was an event organized by Ronald McDonald House to raise \$100,000 towards the rebuilding of this much needed 'home away from home' for parents and family members to stay while their child is receiving treatment at Wellington Hospital.

The evening started with cocktails and canapés then each table of 8 got their mystery dinner destination chosen from a hat. There are 42 participating restaurants around Wellington that donate a 3 course meal to this event. An auction is also run on the night in which David bid and won Christmas Dinner for the Wellington Maltbys team. We are all looking forward to that.

David and Richard also stood out in the cold on the streets of Wellington to shake their buckets and collect money on June 8th for Ronald McDonald House. Together they managed to collect \$200.00



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