

MALTBYS

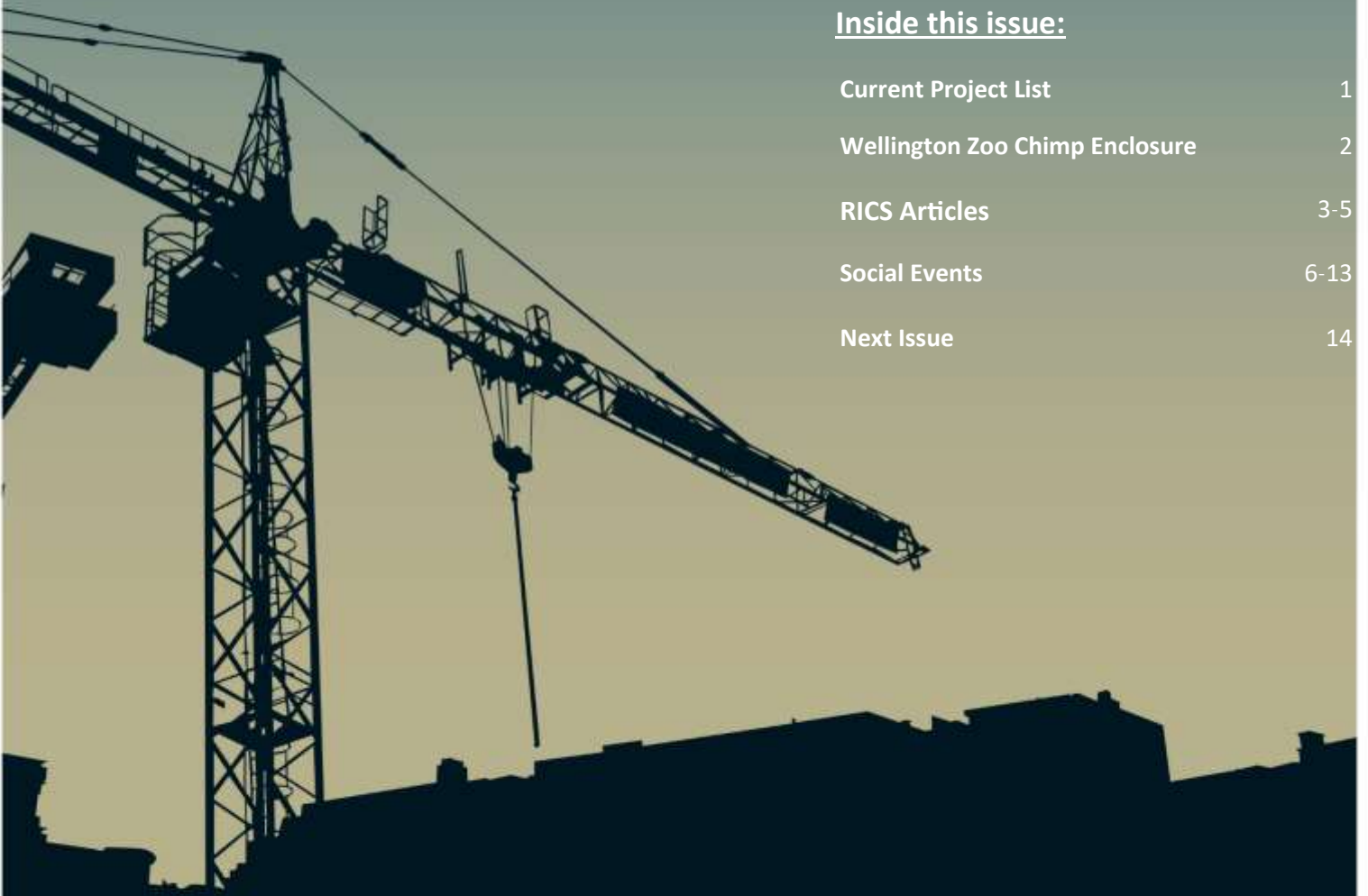
DEFINING COSTS · MANAGING RISK · DELIVERING RESULTS

THE FULL MEASURE

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Current Project List

Wellington Office

Kelburn Normal School Redevelopment	Trent Street Townhouses
Kapiti College Performing Arts Centre	NPD Sockburn
Aotea College	NPD Wigram
Thorndon School Redevelopment	NPD Harewood
Khandallah School New Classroom Block	NPD Gore
Taranaki Schools Cluster A	NPD Darfield
Taranaki Schools Cluster B	NPD Winton
Brooklyn School Refurbishment and Extension	NPD Green Island
Churton Park School Redevelopment	Wellington Zoo Chimpanzee Enclosure Upgrade
Houghton Valley School New Double Classroom Works	Wellington Regional Stadium Trust Concourse
Central North Cost Management Services	Naumi Hotel
28 Hanson Street	18 Oriental Terrace
Whites Line East Redevelopment	Sebel Hotel
Te Papa Museum of New Zealand Roof HVAC	Hutt Valley Medical Centre
Bombay Street Ltd Bankot Terraces	Palmerston North Cultural Precinct
Department of Corrections Rapid	HNZ Whanganui Tranche 1
Deployment of Prison Accommodation	HNZ Epuni Stage 1 Precinct 7
54 Webb Street Apartments	Napier Boys High School

Queenstown Office

The Freshwater Apartments, Queenstown	Copthorne Lakefront Hotel, Queenstown
Golden View Lifestyle Village, Cromwell	Arrowfields Subdivision, Arrowtown
Bullendale Residential Development, Arthur's Point	M-Space Industrial Development, Frankton
Residence Du Parc Apartments, Arthur's Point	Domaine Thomson Winery, Cromwell
Whyte House, Millbrook	Lewis Road, Queenstown
Montgomerie House, Millbrook	Aspiring Lifestyle Retirement Village
Gibbston Valley Wines Lodge & Spa Development	

Auckland Office

Aotea Centre Refurbishment	Aotea Centre Shared Services Building
Western Springs College Redevelopment	Otara Park Redevelopment
Takapuna Grammar School Redevelopment	Hayman Park Redevelopment
Hotel One, Dominion Road	MOE Central North & East Coast Bundles
Salvation Army Royal Oak Housing Development	NZDF Papakura Regeneration Project
OKLA (Kingsman) Apartments	Westgate Multipurpose Building
Arvida Copper Crest Village, Tauranga	HNZC Various sites
Arvida Cascades Village, Hamilton	46-48 Cryers Road Industrial Park
Papamoa College Stage 3	Ellerslie Panmure Highway
Waiheke Island Primary & High Schools	Mahia Road Residential
Redevelopment	Manuka Road, Epsom
Bay of Islands College Gymnasium	Westlake Boys' School Language Block
Diocesan School for Girls' Stage 2 Performing Arts Centre	St Kentigern Boys' School Shore Road Campus Stage 1
Dilworth Junior School New Gymnasium	Holden Dealership
The Northern Club, Bankside Extension	Pakuranga College New Classroom Block
	Arvida Mary Doyle Village

Wellington Zoo Chimp Enclosure



Maltbys Wellington recently completed a project that allowed for a lot of monkeying around... The Wellington Zoo Chimpanzee Enclosure!

This renovation of the chimpanzee area had to take into account advice from animal behaviour and habitat experts and ensure that the chimps were well taken care of while allowing them space to play and maintain their complex social structure.

The enclosure focused on being environmentally friendly as well, as seen in the photo above in which the hammocks were made out of recycled fire station hose pipes.

The view of the chimpanzee troop is also more accessible to visitors, something the chimps love as they enjoy interacting with those who come to see them.



Above: the chimps play on their new habitat.

Left: Jessie sits on one of the new playground structures.

Photos courtesy of Wellington Zoo.

A copy of the first part of a two-part article titled 'Made to order' written by Joe Martin in the September/October edition of RICS Construction Journal.

RICS CONSTRUCTION
JOURNAL

COST ESTIMATING

Made to order

In the first part of a two-part article, **Joe Martin** looks at the different methods for using BCIS data to produce an order of cost estimate for building costs at the earliest stage of a project



Cost advice provided at the outset of a project is key to its success. However, this is often based on a schedule of accommodation alone, from which a block or wire design is generated so there is sufficient quantification to produce an order of cost estimate. So even at this early stage, an elemental order of cost estimate can be used to advise the design team on the most cost-efficient shape and layout for the building.

The need to produce a robust budget that reflects the client's brief and informs the design was highlighted in *Riva Properties Ltd & Ors v Foster + Partners Ltd* [2017] EWHC 2574 (TCC). Here, the client successfully sued the designer for abortive fees on a hotel project that did not proceed as the design could not have been realised on budget. The judge noted that the designers should "confirm the client's key requirements and constraints" and that "the client's budget for the project is plainly a constraint".

The RICS New Rules of Measurement 1 (NRM1), *Order of Cost Estimating and Cost Planning for Capital Works*, states that "The purpose of an order of cost estimate is to establish if a proposed

building project is affordable and, if [so], to establish a realistic cost limit for the project. The cost limit is the maximum expenditure that the employer is prepared to make in relation to the completed building project, which will be managed by the project team (i.e. authorised budget)". It also states that an elemental cost plan is "the critical breakdown of the cost limit for the building(s) into cost targets for each element of the building(s)".

The RICS *Cost analysis and benchmarking* guidance note (www.rics.org/cabmgn) states that an elemental cost plan also provides a frame of reference for developing a project's design and maintaining cost control. It is normally produced for the initial appraisal of a project.

The order of cost estimate is based on benchmark data with general assumptions about quality and complexity. In developing a cost plan, these assumptions will be replaced by prices for the designed elements.

NRM1 sets out three estimating methods for an order of cost estimate:

- floor area method (£/m²)

- functional unit method, such as per bed space
- elemental method.

The first two of these are detailed below, and the third will be covered in the next part of this article.

Floor area method

For an estimate using this method, an estimate of the floor area that matches the definition of floor area used in the cost data is also needed. BCIS uses cost per square metre (£/m²) of gross internal floor area (GIFA).

NRM guidance

NRM1 states that the major component of the estimate is the cost of construction works, including contractor's preliminaries, overheads and profit. The others are:

- facilitating and external works
- other development costs, such as land acquisition
- client's risks: design, construction, employer's change and so on
- inflation.

Applying BCIS cost data

The BCIS average prices section provides cost per

square metre for most building types, which can be used to establish the construction cost of the building, the core component of the estimate (see <https://bit.ly/2t6pz7M>).

The section provides a statistical analysis of the costs of projects, which can be adjusted for location and date. Care should be taken when selecting an appropriate figure; the factors to consider are the following.

- The likely expectations of the clients in terms of design and specification – are they typical for the type of building, or are they likely to be more or less complex?
- The current local market – is the existence of other large projects likely to influence the demand and supply of labour and materials?
- The constraints of the site – will the physical characteristics of a site, its size, accessibility and topography have an influence on the design or on the ease of construction?
- The differences between the main contractor's preliminaries, overheads and profit of the source cost data and the current scheme. NRM1 suggests that these be considered separately, but they are rarely identified in tenders and so they are included with the works costs in BCIS analyses.

The BCIS statistics for a building type include mean, median, upper and lower quartiles, deciles and overall range. While an average figure is provided by the mean or median, it may be more

Table 1

Sample cost data (£) from the BCIS average building prices section

	Min	1	2	3	4	5	6	7	8	9	Max
Range	1,366										3,974
Deciles		1,712	1,856	2,036	2,175	2,349	2,465	2,563	2,756	2,984	
Quartiles			2,000						2,649		
Median					2,349						

Max. age of results: five years; number sampled: 68; mean value: £2,346/m²; standard deviation: £512/m²

appropriate to pick a cost within the range to reflect the project's likely position in the distribution of costs for a building type.

Table 1 gives an illustration, setting out the cost per square metre of GIFA for a new-build primary school, including preliminaries, based on a Tender Price Index (TPI) of 316 and UK mean location (index 100), using data up to the second quarter of 2018.

The chosen cost per square metre enables the cost of

the building to be derived, though estimates will need to be made for the additional costs identified in NRM1.

Most projects on the BCIS database are for firm-price contracts, so an allowance is needed if it is felt that inflation over the contract period will vary significantly from the average of projects in the sample.

In the BCIS online service, there is a template for early cost advice that sets out an order of cost estimate linked

to the BCIS data; Table 2 provides an example.

Functional units

Sometimes, for example where a client is developing the requirements for a programme of work, they may have not defined the projects in terms of buildings but as functional units, for instance the number of places in a school. These units need to be clearly defined and should match those that are used in the cost information.

NRM guidance

The cost estimate is built up in the same way as for the floor area method, but the works cost will be derived by multiplying a suitable cost per functional unit by the number of such units.

Applying BCIS cost data

The BCIS average prices section provides costs per functional unit for many building types, although the sample sizes are not as large as for the cost per square metre data. The BCIS data will provide the construction cost for the building, and the complete order of cost estimate will be built up in the same way as the cost per square metre example.

The functional units used by BCIS are defined in Appendix 2: Recommended Functional Units of the Standard Form of Cost Analysis (see www.rics.org/bcisesfca).

Conclusion

The processes and measurement rules set out in NRM1 and the cost data supplied by BCIS, applied by an experienced quantity surveyor, provide a means of calculating a robust initial estimate, and are the basis for strong cost control as a project design develops.

The second part of this article will discuss the elemental method for establishing an order of cost estimate and conceptual cost estimating.



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Related competencies include Commercial management (of construction), Design economics and cost planning

Table 2

A sample order of cost estimate linked to the BCIS data, for a two-storey, 90-place/year primary school and 52-place nursery school with external works. Source: BCIS, June 2018

Works cost estimate			
	Variable	Rate	Cost
Facilitating works estimate			£0
Building estimate	3,500/m ²	£2,349/m ²	£8,221,500
Location – Norfolk (building estimate x location index ÷ 100)	Index 97; sample 121		£7,974,855
External works			£2,000,000
Adjustments and additions			£0
Difference between date of source data and date of estimate			£0
Works cost estimate (subtotal A)			£9,974,855
Project/design fees and other development costs			
Project/design team fees	10%		£997,486
Other development/project costs estimate			£500,000
Project/design fees and other development costs (subtotal B)			£1,497,486
Base cost estimate			
Base cost estimate A + B (subtotal C)			£11,472,341
Risk allowance estimate			
Design development risks estimate			£100,000
Construction risks estimate			£0
Employer's change risk estimate			£100,000
Employer's other risks estimate			£0
Risk allowance estimate (subtotal D)			£200,000
Cost limit (excluding inflation)			
Cost limit C + D (subtotal E)			£11,672,341
Tender inflation estimate			
No date adjustment; costs at 2Q 2018 (TPI 316; forecast)			-
Tender inflation estimate (subtotal F)			£0
Cost limit			
Cost limit (firm-price tender) E + F (subtotal G)			£11,672,341
Construction inflation estimate			
Firm-price contract, no allowance			-
Construction inflation estimate (subtotal H)			£0
Cost limit			
Cost limit (including inflation) G + H (rounded)			£11,700,000

A copy of an article titled 'Our evolving expertise' written by Rachel Titley in the September/October edition of RICS Construction Journal.

LEADER

RICS CONSTRUCTION
JOURNAL

Our evolving expertise

The skills required of a quantity surveyor have changed markedly over the past three decades.

Rachel Titley looks at the aptitudes we need today – and tomorrow

Just over 30 years ago I walked into a university lecture room, and the lecturer informed us that to be a good surveyor we needed to be able to do four things: drink, smoke, play golf and play squash. To do all four would be ideal, but three would suffice.

At the time, a shiny-faced 18-year-old, I wondered what this had to do with the technical course I'd signed up to. Surely these were not the only skills I would need?

Traditionally, a quantity surveyor was just that – a quantifier and valuer of construction works. This simply demanded numeracy, an attention to detail, a knowledge of construction methods and the ability to "colour in within the lines".

The modern quantity surveyor, however, has become much more than this, as demonstrated by terms such as cost manager, commercial manager, cost engineer and cost analyst by which we are known in the UK and the around the world.

Our traditional core skills remain relevant, but we have adapted and evolved. We have become more proactive and added wider commercial

management skills. We consider the whole project lifecycle, advise and strategise with clients at earlier phases of schemes, perform project and programme management, and use new technologies and standards.

Fresh technology

As we enter the Fourth Industrial Revolution, we are seeing new technologies prompt significant change. The amount of digital information being generated, both in construction projects and the wider world, requires an understanding of data management and manipulation. At this year's RICS World Built Environment Forum Ann Bentley, Global Board Director at Rider Levett Bucknall, said that new roles may need to be created for professionals who can act as interpreters between technology and construction. Indeed, Kier is one major contractor that has hired its first cohort of digital construction apprentices in response to this development.

Building information modelling and intelligent software will eventually take measurement and quantification out of the quantity surveyor's everyday skill set. However, the need to interpret, assess and influence the inputs to and outputs from the design team will remain; as will the adage "garbage in, garbage out".

Commercial management of the design process remains key, and the ability to carry out optioneering with computer models using real-time information allows us to offer better value to our clients and profits for our firms.

If we don't respond to these changes, the risk to the future of quantity surveying is immense. Professions such as accountancy have always seen opportunities to widen their offerings into construction, and even Google's parent firm Alphabet has entered the market with its Sidewalk Labs project in

Toronto. The competition to respond to and embrace these changes is increasing.

Exam revision

How quantity surveying skills are assessed has also evolved. Three decades ago, we would take an RICS Test of Professional Competence, a two-day, scenario-based paper exam sat in our own office. Now, candidates are judged by a more rounded Assessment of Professional Competence (APC) with a written submission addressing specific competencies, a case study, CPD, ethics and a one-hour face-to-face presentation and interview.

RICS has recognised that its competencies need constant review and the latest exercise is now complete, with the changes in effect since 1 August. The new pathways guides and details of the changes can be found at www.rics.org/apc. Mandatory competencies have been amended to reflect that the softer skills needed wider definitions. "Teamworking" is renamed "Diversity, inclusion and teamworking", and a new competency, "Inclusive environments", has been introduced. New technical competencies such as "Open data" and "Smart cities and intelligent buildings" have also been added to other surveying pathways, and will surely be added to quantity surveying in the future.

I think that we will continue to use the skills of the past alongside those of the future. But if that same lecturer were standing in front of this year's freshers and told them which four skills they needed, what would they be? ●



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SOCIAL EVENTS

1. Auckland Office Christmas Function
2. Auckland Office Children's Christmas Party
3. Wellington Office Christmas Party
4. Wellington Office December Drinks
5. Wellington Office Christmas Lunch
6. Auckland Office Beverage Tasting Competition

Auckland Office Christmas Function

This year the Auckland office went to Waiheke Island to do the zipline with Ecozip Adventures. This included state-of-the-art flying-fox ziplines in an immersive forest environment.



Clockwise from top left:

The team look over the forest at Ecozip Adventures;

The forest path the zipline follows;

Huw is all smiles despite the wet weather;

Jason reeling himself in as he completes the zipline.



Auckland Office Christmas Function contd.

The team had a fabulous time and didn't let the rain stop them from having fun. Afterwards they settled in for some pizza and celebratory libations.



Clockwise from top:

The Auckland office at Waiheke;

The group relaxes after some refreshments;

Post-zipline food break;

The team hang out



Auckland Office Kids Christmas Party

The Auckland Office also threw a party for the kids and while the day was over-cast, it was warm and filled with lolly scrambles and present giving.



Clockwise from top left:

The Auckland team enjoy some beers together;

Innovative use of a frisbee helps collect sweets in the lolly scramble;

The kids gather round to receive presents;

The gorgeous pohutukawa tree gives the event that special Kiwi Christmas vibe.



Wellington Office Christmas Function

The Wellington office braved not only a horror themed escape room but also rain and cold at their Christmas Function.

The escape room required the team to discover and solve many puzzles and make it out within the timeframe, which they succeeded admirably, working together and utilizing each person's particular skill set to get to the heart of the mystery.

They also chartered a catamaran which sailed out of Wellington harbour and even the grey and damp vistas couldn't stop their good time!



Photos from top:

Nuri Kaya, Wayne Muuren and partners brave the wet weather while enjoying some drinks on the catamaran.

David Morriss and Wayne Muuren attempt to get a photo of the vista behind them.

Jaques Taljaard enjoys a beer while the catamaran sails over the harbour. Luckily the temperature was warm despite the drizzle.



Wellington Office December Drinks

As the silly season made its mark on our team, Friday night drinks became competitive feats of attempted engineering. In a kind of reverse-Jenga, the team tried to add empty beer cans onto an already precarious base of two bottles placed end-to-end.



Disclaimer: no people, furniture or cans were harmed in the making of this tower and the Health and Safety officer was nearby to avert any potential danger.

Above: Competition is getting tight as the tower climbs.

Right: Matt Kotsifakis attempts a daring new height...



Left: ...That ultimately ends in failure.

Wellington Office Christmas Lunch



The Maltbys crew were spoiled by our local café, Floriditas for Christmas lunch on the last day before the summer break. Dressed in our finest and brightest attire, the team were treated to a personalized menu, crackers with Floriditas vouchers, dice, crowns and other fun items.

The photo above is courtesy of another customer of the café who recognised Dave and asked us for a photo.



Auckland Office Beverage Tasting

Below: The team smile after the completion of a team bonding session .



As a team bonding exercise and to scratch the itch of our collective competitive spirits, the Auckland office had a beverage taste test.

The aim of the competition was to correctly identify seven drinks that had to be matched to a list .

The drinks comprised of beer, wine and ciders which the contestants tasted and attempted to guess.

Congratulations go to Dean Pooley who certainly knows his beverages.

What you can look forward to in the next issue of The Full Measure:

- More information about upcoming projects
- 90th Anniversary celebrations
- Social Events

We look forward to seeing you then!