

MALTBYS

DEFINING COSTS · MANAGING RISK · DELIVERING RESULTS

THE FULL MEASURE

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Maltbys Ltd
Maltbys House
Level 2, 9 Tory St
PO Box 1034
Wellington 6011

T 04 499 1468
F 04 499 4648

Maltbys Ltd
17A
212 Antigua St
PO Box 29 112
Christchurch 8540

T 03 377 6215
F 03 442 5931

Maltbys Ltd
Level 2
The Station
7-9 Duke Street
PO Box 975
Queenstown 9300

T 03 442 5965
F 03 442 5931

Maltbys Ltd
Level 2
Princes Court
2 Princes Street
PO Box 2176
Auckland 1140

T 09 303 4394
F 09 307 1034

admin@maltbys.co.nz
www.maltbys.co.nz

Current Project List

Wellington Office

Stokes Valley Community Hub
Wellington Zoo - Meet the Locals
Ministry of Justice - Whangarei Courts
New Plymouth Boys and Girls High
CERA- Various
Southern Response - Various
Ministry of Education - Various Schools
MAS EQ Reinstatement
Taranaki Schools Bundle - Various
Kapiti Performing Arts
Wellington City Council Children's Garden
Wellington Girls College
Greymouth Hospital
Thorndon School
Queen Margaret College
Newtown Fire Station

Auckland Office

Rototuna High Schools
Mt Eden Countdown
Diocesan Arts Centre
Western Springs College
Pridelands - Auckland Zoo
Tarawera High School
Murupara Area School
Holy Trinity Cathedral
Waiuku Area Schools
Kelston Deaf Education Centre
HNZC Titirangi/Great North Road redevelopment
Animates
CPD Batch 14 Schools
Reliving, Waiheke
Westgate Multi Purpose Facility
Rutland Street Apartments
Takapuna Grammar School

Queenstown Office

Aspiring Enliven Care Centre
Panorama Terrace
Mill Green, Millbrook
The Landing
Skyline Marine Parade
Hulbert House
Pinnacle Place House
Copthorne Lakefront Hotel
Summerfields Estates Subdivision
Residence Du Lac
Peak View Heights

Christchurch Office

Christchurch Men's Prison
Christchurch Schools bundle
Rawhiti School
Southern Response—Various

Murupara Area School Redevelopment

This project is a \$14.2m major redevelopment of the existing Area School and is being completed in two separable portions through until May 2016. Project includes demolition of a number of buildings including asbestos removal works. Included in the works are a new teaching block, ECE, gymnasium, plus the refurbishment of two existing classroom blocks, together with all associated siteworks and site infrastructure works.



With construction of stage one complete, works continue on the gymnasium (below) and the refurbishment of the two existing classroom blocks.



Pridelands Escarpment, Auckland Zoo



This \$7m African Savannah development which is a continuation of the original Pridelands development (completed in 1997) has now been completed. This is the first stage of Auckland Zoo's multi-million dollar 10 year redevelopment plan to improve the environment within the zoo for the animals as well as the visitors.

The new savannah was opened to the public on the 25th of March 2016, following a 12 month construction period.

The development includes new vistas into the African savannah exhibit and new environments for the Zoo's African birds, meerkats and tortoises.



Tawhiti School Gymnasium, Hicks Bay

The new \$4m multi-purpose hall/gymnasium was officially opened on the 15th April 2016. The school and wider community were very excited to officially open the centre. The ceremony began with a dawn service then a powhiri, followed by a hakari.

The facility is the second stage of the redevelopment of TKKM Kawakawa mai Tawhiti, which is located in Hicks Bay at the top of the remote East Cape. This new 850m2 facility provides a multi-purpose space for use as a gymnasium and community facility, and is one of the largest buildings to be built in this area for many years.



Rototuna Junior & Senior High Schools, Hamilton



Following on from the completion of the first stage of the Junior High School at the end of November 2015, stages two and three have now been completed with the official opening held on 6 May 2016.

Stage two comprised of Block B (Food Tech etc) which was handed over at the end of January 2016 and stage three Blocks C & D (Performance Theatres and Library) was completed at the end of April 2016.

Construction of the Senior High School began in early 2016 and is due for completion in January 2017.



Rore Kahu, Bay of Islands



Foundations are poured.



Rammed earth walls are constructed.



Walls are finished.



Roof is lifted into place.

Recently featured in the *architecturenz* magazine, and a Finalist in the Completed Buildings (Culture) and Small Projects category in the 2015 World Architecture Festival, Rore Kahu is the Marsden Cross Heritage Centre by Cheshire Architects and a project worked on by the Maltbys team.

Rore Kahu which translates as 'soaring hawk' is the visitors centre that sits within the Rangihoua Heritage Park in the Bay of Islands. Construction was completed in 2014 for the bicentenary of the first missionary sermon in New Zealand on the site over two centuries ago.

The walls are constructed from rammed earth and the roof is a composite product of PET panels and e-glass skins. The roof is so light that those poles aren't holding it up, they are stopping it from flying away.



A copy of an article titled 'Fair Shares' written by Joe Martin in the February / March edition of the RICS Construction Journal.

Fair shares

Joe Martin explains how the BCIS inflation indices will help mitigate risk on construction projects

Inflation is, in former US Defence Secretary Donald Rumsfeld's term, a "known unknown". We know that prices tend to change over time but we do not know by how much or when. This uncertainty is thus a risk when considering future expenditure. The magnitude of the risk will be exacerbated by the length, size and location of a project. The longer the project the greater the uncertainty; the larger the project the greater the monetary value of the risk, and in some parts of the globe prices are more volatile than in others.

The most common method of allowing for inflation is by use of indices. In the UK the most commonly used indices are the price adjustment formulae indices (PAFI) prepared by the Building Cost Information Service (BCIS) of RICS.

Over the past year BCIS has been reviewing the PAFIs used in civil engineering contracts with the industry.

A couple of notes on terminology:

- Inflation adjustment clauses are referred to by different names in different contracts – fluctuations, variation of price, price adjustment for inflation etc. – I have referred to them in this article as 'inflation adjustment clauses'
- Inflation, strictly speaking, is increases in costs as distinct from deflation, which is falling prices. However, inflation adjustment clauses in contracts are designed to deal with both. Rising prices are the norm, but with recent falls in fuel and commodity prices the impact of an inflation adjustment clause would be that the client receives the benefit of the savings, rather than the contractor.

Why allow for inflation

To ensure the best price on a contract, the risk for inflation should be taken by the party best able to manage it. Inflationary risks derived from the local market can probably be managed by a

contractor and their supply chain, but the underlying inflation caused by wider pressures from the outside construction and global markets probably cannot.

So who should take the risk of inflation on a construction contract? To quote from Crossrail's procurement strategy:

"It is considered that the achievement of best affordable value will be supported by a sensible and fair allocation of risks between the parties to the contracts. Requiring contractors to take responsibility for risks which they cannot assess or manage would be likely to result in either high risk premiums, or commercial pressures caused by insufficient provision."

Who is best able to "assess and manage" the risk of inflation will vary from contract to contract depending on the client, the contractor and the work.

When should inflation adjustment clauses be considered?

- **Periods of high or uncertain inflation:** that the formulae method of price adjustment was developed in the 1970s is no surprise when you consider the levels



of inflation at that time. Figure 1 shows that construction costs (labour, material and plant) rose on average over 16% per annum in the period 1972 to 1980. Over the past 10 years (2006–15) the average was less than 3%. At the moment, when some underlying costs are falling, the client might consider that it should take the risk of this benefit rather than asking contractors to build it into their prices.

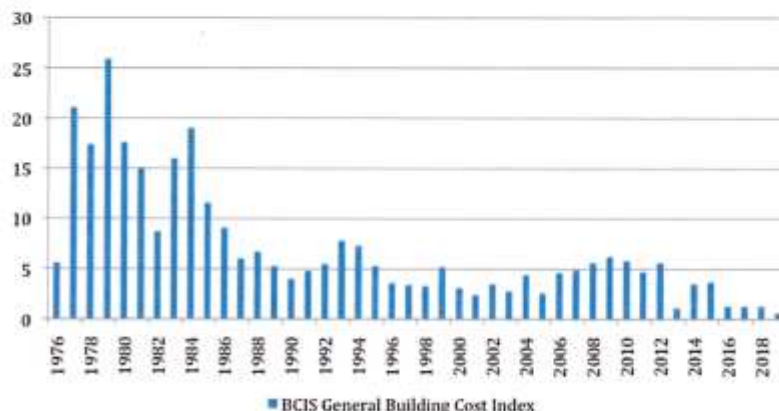
Figure 2 shows the recent trends in DERV, steel reinforcement, electrical goods and bricks.

- **Big projects:** where the impact of inflation is significant in monetary terms. 'Big' needs to be judged in relation to the size of the parties.

- **Long contracts:** the longer the contract the more difficult it is to predict the impact of inflation. This will apply both

Figure 1

BCIS General Building Cost Index (Annual percentage change)





to projects that will take a long time and long-term contracts such as framework contracts and maintenance contracts.

● **Complex contracts:** where different contractors will work at different periods during the project.

How to allow for inflation

Before the introduction of the price adjustment formulae, inflation adjustment clauses attempted to reimburse contractors for the actual changes in their resource costs. Contractors were asked to list in their tender the current prices of the resources that they wanted to be adjusted.

One of the drivers for the introduction of formulae price adjustment was the cost both to contractors and clients of administering the old contracts, which, despite the level of detail involved, resulted in imprecise recovery and were open to abuse.

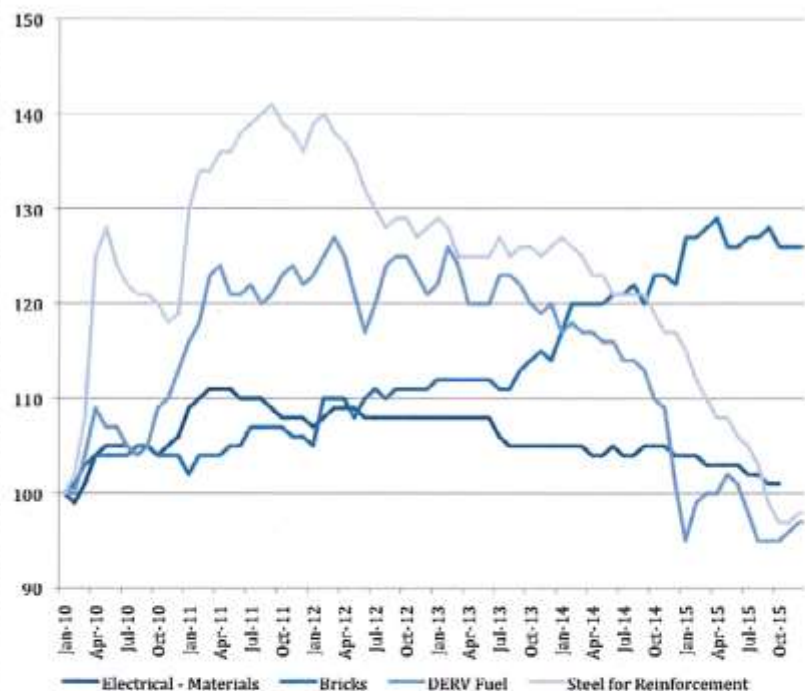
The formulae method of inflation adjustment was introduced due to industry demand for a speedy, yet credible, way of calculating and reimbursing fluctuations in costs.

The method relies on resource cost indices for trades and individual resources. These can be weighted to represent the resources on a particular project so that the impact of inflation can be modelled. This allows the contractor to provide the best price in their tender, confident that the inflation reimbursement will reflect their costs.

The original guide to the formulae stated: "There is a fundamental difference between calculating price adjustment

Figure 2

Materials cost inflation – DERV, Electrical goods, Rebar, Bricks [BCIS Price Adjustment Formulae Indices – January 2010 = 100]



(up or down) on a range of actual costs, and calculating price adjustment by formula methods. With actual costs, price adjustment is a net amount calculated from wages sheets, invoices and the like in accordance with the contract provisions.

"Price adjustment is applied only to those materials on an agreed basic list, and there is usually no specific provision for the adjustment of overheads and profit.

Formula price adjustment is calculated from the movement in index values irrespective of the actual extra costs (or savings) incurred by the contractor. Individual costs included in the build-up of a tender are not used in the price adjustment calculation. There is no need, therefore, to specify the materials subject to adjustment, no need to submit a list of basic materials

- prices and no need to take into account future changes in wages.

"It is important that users of formula methods of calculating price adjustment should appreciate that they do not purport to reflect, with accuracy, every minor change in construction costs or resource prices. They are a method designed to compensate the contractor reasonably for increases, and reduce the delays and labour associated with traditional methods of payment.

"The quantity surveyor or engineer should not expect their task to be translated into mere mechanical activity. Professional skill and judgement are required in the use of the formula methods. The contractor can take into account any advantages or disadvantages which they foresee in using the formula methods when building up their tender."

When the formulae method was introduced, the weightings of the indices were linked to items in the bill of quantities so that they were applied differently at each valuation. However, the alternative single index method has become the standard practice so that the weightings of the indices are set, usually by the client, at the outset of the contract and applied to all payments.

Spending time choosing the right mix of indices, and discussing it with the contractors where there is early contractor involvement or competitive dialogue, will help in ensuring that the contractors are comfortable that they are protected from underlying inflation and so offer the best current price. As Figure 2 illustrates, the cost of resources can move in very different ways.

As the practice of using indices in inflation adjustment clauses has become standard practice, the choice of indices has proliferated, but is not always made wisely. The point of the indexation is to match the indices as closely as possible to the work to be carried out.

Therefore, using a general inflation index such as the retail prices index (RPI) or applying a general construction index to specific sectors such as the use of the all-new construction output price index (COP1) to water projects, imposes a double risk for the contractor, in terms of both the inflation measured by the index and the inflation in their actual costs.

The same applies to the practice of main contractors using an all-trades index to specific subcontractors. Applying an inappropriate index or indices will never



achieve the desired effect of attracting the best prices.

BCIS has published six golden rules for choosing an index:

1. Be clear about what you want to measure and how you want to apply it.
2. Choose an index that is measuring the costs that most closely match rule 1.
3. If you are using the index linking something in a contract or agreement, be clear that it meets your needs, particularly in respect of:
 - frequency of the publication (monthly, quarterly, annual)
 - updating and revisions policy.
4. Understand the inputs to the index and the calculation methodology.
5. Read the notes and definitions.
6. Never choose an index because of its past performance.

Depending on the procurement method, the index can be applied either to the contract sum or the target cost.

PAFIs

When the formulae method of calculating fluctuations in contracts was introduced in 1973, the PAFIs were produced to facilitate its implementation.

The indices were set up under the aegis of the National Economic Development Organisation (NEDO).

The series were devised by two committees, one for civil engineering under the chairmanship of JW Baxter and one for building under JG Osborne. As a result, the PAFIs are colloquially

referred to as the NEDO indices, the Baxter indices (civil engineering) and the Osborne indices (building).

The indices were initially calculated by the Property Services Agency (PSA). The responsibility for the indices followed the PSA's successor departments that are responsible for construction price and cost indices and other statistics, latterly the Department for Business, Innovation and Skills (BIS). In 2009 BCIS took over the responsibility for the indices from BIS.

The indices are intended to represent the underlying inflationary pressures, not the actual costs on a particular project. However, the range of indices is intended to allow those underlying inflationary pressures to represent the resources used on a project.

The indices signify the movement in factory gate prices and nationally agreed wage awards and are for national (UK) application. They are not intended to represent the effect of market pressures, national or local, on prices from subcontractors, merchants, factors etc. The management of these is the commercial concern of the contractor.

The indices are currently published online as four series:

- building
- specialist engineering
- civil engineering
- highways maintenance.

The indices used in civil engineering contracts (civil engineering, specialist engineering and highways maintenance) have undergone industry review in the past 12 months by clients, contractors, subcontractors, material suppliers, consultants, the government, the Office of National Statistics and BCIS. The new series is available early this year. ●

More information

> To subscribe to the PAFIs, please visit <http://bit.ly/1OjXNtl>

Joe Martin is Executive Director of BCIS
jmartin@bcis.co.uk

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Related competencies include
**Design economics, Cost
planning, Contract practice**

A copy of an article titled 'No Gain without Pain?' written by Karen Rogers in the February / March edition of the RICS Construction Journal.



No gain without pain?

Karen Rogers talks to a candidate, an assessor/chair and a counsellor about the challenges and rewards of the APC process

As an assessor/chair, Michelle Bernhardt has had many candidates over the years telling her that obtaining professional membership has been the most stressful and difficult thing they have ever done. While she fully sympathises, she says that membership is something to be cherished.

"RICS has a long and established history as a professional organisation: our brand is recognised worldwide for quality and standards. To ensure that all

members meet a universal level of attainment, we have a quality education system. The process may be perceived as hard or difficult, but it is important that we have such rigorous standards to uphold the future of the profession."

Counsellor Kostas Papacharalampos agrees: "The APC process is indeed stressful and has to be taken step by step. It needs ambition, good spirit and hard work, but by becoming a chartered surveyor you put a global audience in a position to trust your skills."

Support mechanism

A common complaint she hears from candidates is that they feel they are not getting enough support from their employer, supervisor or counsellor in guiding their day-to-day work in relation to the APC. But Bernhardt says

it is down to the candidates themselves to ensure that they meet the requirement. After all, it is the candidate who sits in the room at final assessment, not their employer, she adds.

For instance, RICS helps candidates in a wide range of ways: from the basic candidate's and pathway guides providing highly detailed information on competencies and the assessment process itself, through to specific training courses dealing with interview technique or submission preparation.

"But you would be surprised how often I see submissions that do not meet the stated criteria in the candidate's guides," says Bernhardt. "Case studies may be too long or in the incorrect order and may not address key issues. The guidance is there

for candidates, and as an assessor, I expect them to adhere to it."

Then there are other, more personal, support groups: RICS Matrics, regional training advisors, mentors and the LinkedIn APC community where questions and queries can be posted online. "These networking-based groups are vital," says Bernhardt. "The ability to talk and share concerns or worries is a very important element. I would urge all candidates to take full advantage of all elements of support available to them."

Papacharalampos recalls his own experience. "I had good support from my employer with additional training and discussions with my supervisor, counsellor, APC specialists and colleagues. However, an element of challenge was there for me." As a result, he



says, he finds it important to establish an open and honest relationship with the people he is helping. "I believe there are no wrong questions on anything. With this in mind, I encourage all sorts of questions from candidates."

"The challenge is to really own the process. My aim is to establish a strong understanding of candidates' everyday activities within their APC, both in personal, professional and technical matters. Being a bit of a mentor does help and inspire candidates."

As the first person within his company to undertake the APC, candidate Ben Stupple says he had to be quite proactive in his approach to ensure he achieved sufficient experience under each of the competencies.

"Fortunately, both my counsellor and supervisor have been very willing to assist, meeting me regularly to ensure I am reaching the required competencies as well as providing the exposure required to obtain level 3. This has been imperative to my training, because without this input it would have

been difficult to monitor my progress appropriately."

Advice and hints

The key to the APC is preparation, says Bernhardt. Keeping up to date with reviewing training plans, meeting employers and obtaining appropriate professional development to address any technical or skills gaps is crucial.

"Give yourself enough time. Do not rush towards the final assessment if you do not feel ready. Do not put yourself in the position of having to compile your submissions hastily to meet a deadline. Take time to prepare your case study. Choose a topic that allows you to demonstrate your competencies to the full. Draft and redraft it, then do so again after others have read and reviewed it."

At final assessment it is often easy to see the candidates that have come forward too quickly, Bernhardt adds. "There are gaps in the submissions, or a lack of technical understanding to demonstrate the necessary level 3 competencies. The APC is not a race. Do it once, and do it well."

Having submitted documents some months previously, candidates should read them again, she advises. Ensure you are fully familiar with the various cases you have outlined in your summary of experience to demonstrate your competence. "When the candidate looks blankly at you after an assessor has asked a question, it is not a good start," she says.

She adds: "The other thing that comes up too often is the 'we' versus 'I' scenario. It is appreciated that as a trainee member there are certain things you may not be able to do. However, constant reference to 'we' in submissions or interview can

lead an assessment panel to doubt your experience."

Papacharalampos reiterates this advice. "There are experienced people who are there to answer your questions during the months of training – the more you get them involved, the better. Make the APC your own personal, professional and technical commitment and seek help from RICS Matrics and APC mentors volunteering across the UK. Owning this process will give you the best rewards."

Some recent changes in the APC have been announced by RICS after extensive consultations. Papacharalampos' advice is to keep informed and speak to your employer and the dedicated APC teams in RICS, in order to understand where you now stand in the process and what actions, if any, you need to take to keep in good position with your submission plans.

In the meantime, he says, regularly assess your existing APC plan and actions to ensure you are prepared with your summary of experience and your case study. Is your everyday work relevant to your APC requirements? Is your manager aware of this? Aiming to have interesting and challenging projects in your work pipeline will be to your own benefit as the market is now out of recession.

From the candidate's point of view, particularly those working for small and medium enterprises, Stupple offers some tips:

- be proactive and do not become complacent

- meet regularly with your supervisor/counsellor
- seek out opportunities that can broaden your learning
- get involved with your local RICS Matrics group – a great chance to meet people undergoing the APC and see RICS in practice.

In the longer term, professional membership will help your career advancement, and the RICS networks will offer you support and assistance as you develop in your working and personal life.

Bernhardt urges members to consider helping others going through the system once they have qualified. "I qualified in 1996 and shortly after put some time in to help as an APC doctor – now known as mentors."

"That developed, and my involvement with the APC and education has continued, which is incredibly rewarding and also beneficial to my career," she says.

For Stupple, as he approaches his session 1 2016 deadline, there is still plenty to do. Describing his current feeling as cautiously optimistic, he is also aware that a failure to perform on assessment day could result in a resit, and so is determined to be well prepared come the final interview. ●

More information

> Isurv offers a range of advice and guidance for APC candidates, supervisors and counsellors: visit <http://bit.ly/1QldTPe>

Karen Rogers is RICS Matrics and UK Operations Manager
kr Rogers@rics.org

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+info



Related competencies include
APC

A copy of an article titled 'Beyond Big Data' written by Kim van Rooyen in the February / March edition of the RICS Construction Journal.

Beyond big data

Kim van Rooyen investigates how industry-agreed standards on data use are essential to improving project performance

Expectations about what 'big data' can achieve are rocketing, but if the built environment sector is to maximise the benefits, we must take collective action to define, standardise and share its data more widely.

Change has to happen at both a micro and a macro level, within organisations and project teams, across industry groups and supply chains. It will not be easy; to be successful requires a non-adversarial culture and high level of trust. But data maturity is essential if we are to drive the next level of improvement in the way we build and manage assets.

The built environment sector needs its own route map, and professional organisations should take the lead on this by developing certification, accreditation and training.

Setting priorities

With such a vast array of data potentially available on a typical project, measuring the right things is key to driving better performance.

So it is important to define your priorities and corresponding data needs, resisting the temptation to place too great an importance on the things that are easy to measure but less useful to your objectives.

Technology should not become a distraction from the bigger picture. Too much data can overwhelm and slow down decision-making; it could be as damaging to the progress of a project as too little.

This principle should also be applied to how senior management collect and look at data. Traditionally, project managers have filed progress reports at agreed intervals. Now, with real-time visibility, an international programme director can instantly access project data from any location across the world.

But while this can be beneficial, particularly in terms of the assurance aspects of a project, senior directors need to be disciplined about how they exercise this tool. Dipping in and out of the information risks getting too close to one aspect of a project, becoming obsessed with minutiae and failing to see the bigger picture.

Common standards

Without common standards, the quality of data could be at risk at any point in a project, from the moment it is collected to the occasions when it is transferred, stored or aggregated.

Interpretations of standards can vary from project to project within a single organisation, and this can lead to a lack of confidence in the data itself. For example, the anticipated final cost (AFC) at a certain milestone of a project is critical for forecasting outcomes and making decisions. But if the AFC does not conform with a standardised measurement, it cannot be meaningfully compared with the other repeat projects that an organisation is undertaking around the world.

Adopting industry-agreed definitions for data would not only help companies improve their internal processes, it could ultimately drive up standards across the sector as a whole, as data could be shared more frequently.

Creating a common architecture that defines data is an important step. However, if data is to have longevity, it also needs to fit into a hierarchy or architecture that is recognised throughout the industry. This common coding structure would standardise the way that data on every project is captured and stored, from an oil rig to a retail outlet. It would enable organisations to compare performance on areas such as cost and schedule against their peers, or even other industries.

Improve data management capabilities

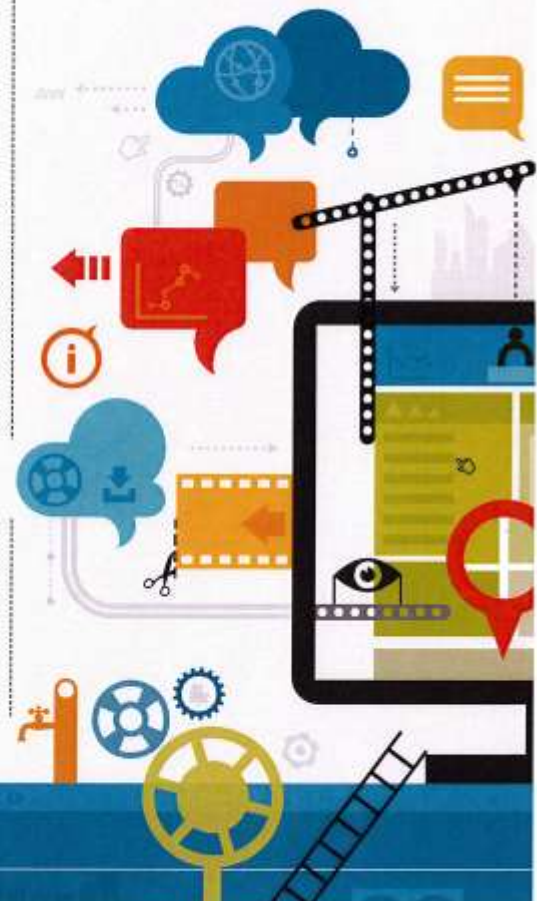
Other sectors, notably retail, employ armies of data specialists to track and predict trends. The built environment sector is catching up with them slowly, with a noticeable rise in the number of data analysts or information managers being embedded into organisations and project teams. However, data management tasks are often bolted on to an already existing role – for example, a quantity surveyor. Alternatively, they are carried out by an IT specialist who may have little understanding of construction.

In coming years, data management will become so central to the success of a built environment project it should be a recognised discipline in its own right. Data analysts within the sector should have the same status as chartered surveyors, construction managers, engineers or architects.

As an industry, we should start defining what the role of construction data manager or analyst would entail. Accredited qualifications in this area are urgently needed.

Collaborate across supply chains

Sharing data more widely is essential if we are to drive improvements in the



way we build and manage assets. But at present, data transfer between parties can be inefficient and ineffective even within a single project.

The lack of common standards and protocols is only part of this problem. There are also commercial and cultural barriers to transparency, rooted in distrust and adversarial ways of working.

Parties in a supply chain can be reluctant to share more than the minimum of data with each other. Organisations may justify this by citing commercial confidentiality, but the real reason behind the secrecy is probably lack of trust: they fear that the data will be used against them to substantiate a claim.

To counteract this problem, common protocols should be established in the earliest phases of a project, long before work gets under way on site. Data should be shared centrally with all parties, including the client, in a common, collaborative environment.

With a critical mass of projects sharing data efficiently, the sector can move on to the next phase: specifically, sharing information horizontally, on a peer-to-peer basis. This is already happening in some sectors. Over the past two decades, for instance, oil and gas companies – which have well-established data protocols and hierarchies – have

Five stages of data maturity

- 1 **Little useful data:** the company cannot generate useful metrics and analytics, and does not understand, let alone anticipate, a project's performance. It has few useful insights based on robust data with which to make confident decisions.
- 2 **Big data:** the company may be inundated with a flow of data from many sources, but does not yet have the approaches or capability to turn that data into useful information. Project teams can spend too much time trying to make sense of large volumes of data, rather than driving the project forward – often referred to as paralysis by analysis.
- 3 **Incisive information:** the company uses high-quality information, backed by robust data, and applies context and relevance to using the right models to drive the project forward. Common taxonomies and coding structures help standardise and explain data, and its use in a meaningful way, explaining the links and interdependencies across the data.
- 4 **Predictive:** the company moves beyond the simple analysis of historical or current status – it is also able to carry out predictive analysis. By using data to anticipate what is likely to happen, it can better plan for how projects are driven forward successfully.
- 5 **Data-centred:** the company's entire project delivery model is built around its analytical data-led approach. Data and its use sit at the centre of driving project performance and improvement on a sustained basis. Both predictive and historical analysis models play a key role, and more advanced data analysis techniques – such as data mining and benchmarking – become increasingly important for leading performance.

* Adapted from *Big Data: Turning Data into Knowledge and Putting Knowledge to Work* by Markus Brenner (BentNetwork, 15 April 2011)

been benchmarking project performance data anonymously through a joint industry performance forum. The initiative has enabled awareness of the rising costs in the sector to be raised.

This practice should spread to other built environment peer groups as they begin to gather and share more consistent data.

Integrated technology

At present there is no standard model to define how technology should be integrated into a construction project: the systems used by project and cost managers, contractors, architects and engineers are all isolated from one another and they do not exchange information efficiently.

We need to develop best practice models for fitting this jigsaw of technology together so that data can flow efficiently between parties. This will be essential for maintaining a healthy ecosystem of interaction between the multitudes of contractors and suppliers, particularly on complex projects.

Admittedly, some built environment organisations are further ahead than

others on the data journey, but the progress is too slow and these pockets of best practice are not benefiting the industry as a whole. Clients and industry groups alike need to act strategically, and with more vision, if they are to drive genuine efficiencies.

Technology is presenting a once-in-a-generation opportunity. Failing to act and muddling along with inconsistent data will lead to loss of trust, worsening relationships and stagnating productivity. Therefore, we need to step up the pace of change. Moving faster to secure the quality of our data will accelerate improvement throughout the sector as a whole. ●

Kim van Rooyen is a director at Turner and Townsend
kim.vanrooyen@turntown.com

Further +info



Related competencies include **Data management**



Image: iStock

SOCIAL EVENTS

- 15 Arthur Gabriel
Memorial Fishing
Trip
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Arthur Gabriel Fishing Trip

Our annual Arthur Gabriel Memorial Fishing trip was a great day out on the Auckland Harbour. Snapper, Kawhai, and Spotty were the fish caught. Beth (again.....) won the trophy for the largest Snapper (41cm), and Beth probably also caught the most fish on the day.....(again.....).

Lots of food and laughs (and the odd beer) were had by all!



St Patrick's Day Celebrations

This year, once again, there were some green festivities in the office for St Patrick's day. Thanks to Anne for the yummy cupcakes!

