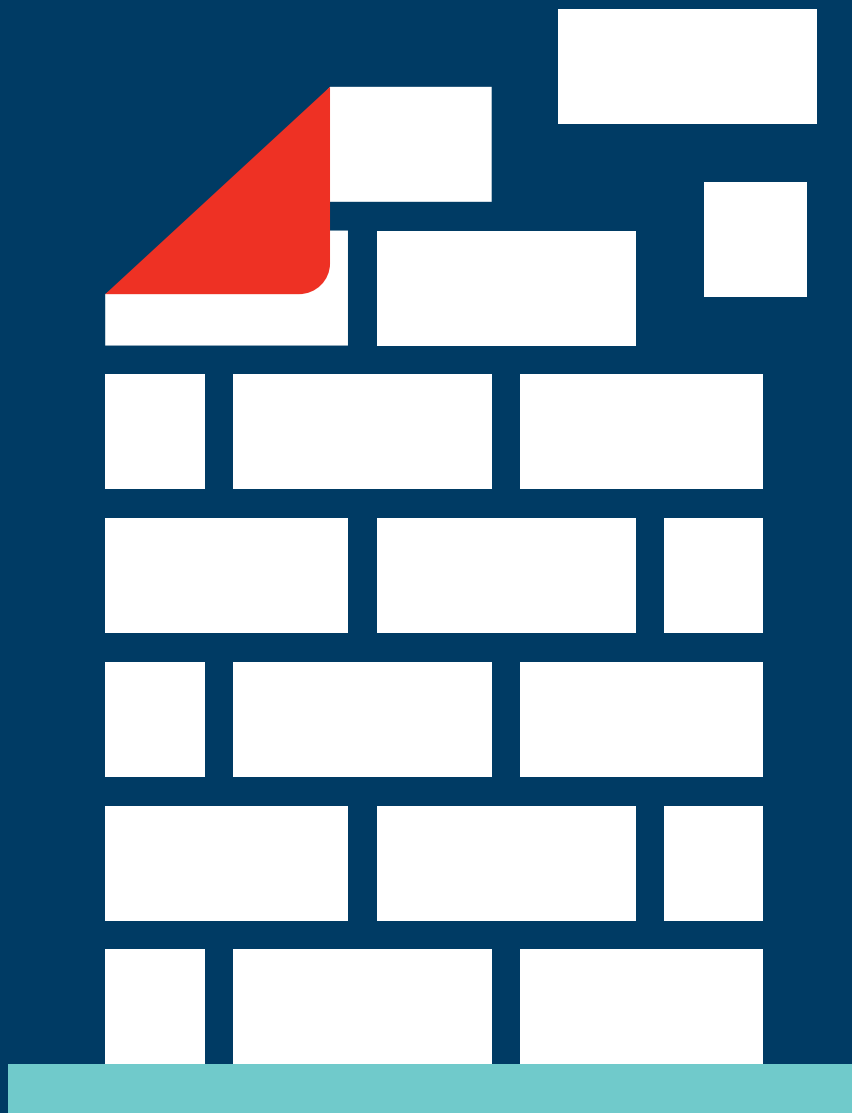


Bricks and Data

The best information management
solutions for the construction industry



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We always offer you more.

The construction industry deals with a number of challenges that affect the ability of companies and contractors to access, share and store information. These challenges can have a serious negative effect on the efficiency of information workflows – and ultimately damage productivity.

Construction's necessarily paper-based information management practices are the cause of many of the industry's current record-handling difficulties because of inherent organisational, ease-of-access and data-integrity issues. These concerns dovetail with compliance problems related to the storage of documents both during projects and on a long-term basis. Procurement agents also struggle to find information management solutions capable of delivering value for money over multiple short- to medium-term worksites, where engaging multiple third-party administrative providers can quickly elevate costs.

Fortunately, solutions are emerging with the goal of helping construction companies

optimise information management in line with these challenges. This report will address the key areas of weakness presented by current information management practices in construction and evaluate the solutions.



Major Information Management Challenges For The Construction Industry

• The Paper Problem

Despite the general proliferation of digital information management systems and cloud-based storage solutions in recent years, for many construction companies hard copy remains by far the most popular – and practical – way of working. In a study released by the IDC in 2012, Melissa Webster found that “the need to print documents so they can be used where it’s difficult to take a PC was a leading reason why paper remains prevalent [within some organisations].”¹ Nowhere is this statement truer than in the construction industry, where paper is often the sole format capable of meeting requirements in terms of the physical size of planning documents and their suitability for multi-party collaboration.

But despite its practical importance, paper can often create for construction companies a series of costly organisational pitfalls, including impractical filing systems, misplaced records and the subsequent need to source or re-creation them, and haphazard archiving. Webster’s study found that workers who handled paper documents spent 7% of their workweek dealing with problems and time-consuming tasks unique to hard copies. When taking into account the time spent searching for documents that were never found, the figure rose to 11.6%. If those documents then had to be re-created, this took the total amount of wasted time to 15.6% of the workweek.² While an efficiency concern in itself for the reasons noted above, in construction environments with a large number of involved parties this busywork can produce a ripple effect that pushes back schedules and adversely impacts productivity.

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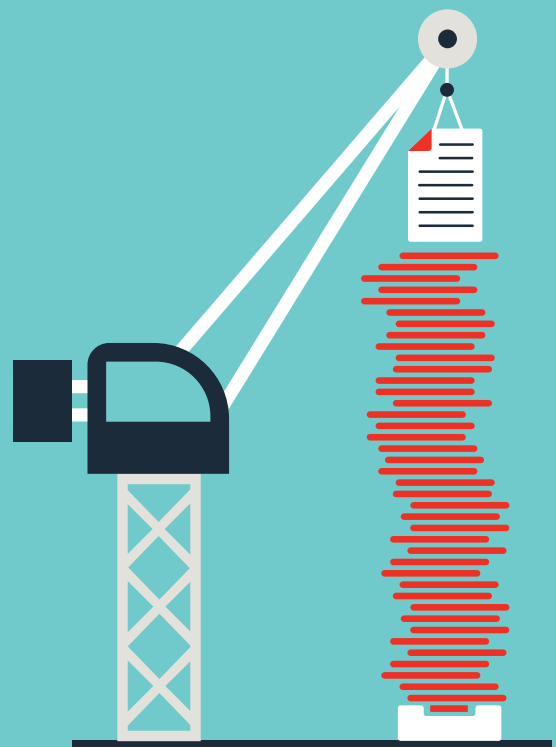
1. Webster, M., "Bridging the Information Worker Productivity Gap: New Challenges and Opportunities for IT" at [<http://www.idc.com>] (September 2012). p. 19.

2. Ibid. p. 8, Table 2.

An associated issue is worksite project units having reduced ease of access (sometimes known as a lack of neutrality) to a “single point of truth” that is updated in real time. Over the course of a project, a variety of participants will require access to the same information assets. In these situations, while paper formats allow for improved in-person collaboration and project visualisation, they can reduce the ability of work units to function independently. A parallel problem can arise in network environments when data is hosted entirely by a single (usually the best-resourced) project participant. While providing better access-equity than paper, online information management environments can create a bottleneck through the disorganised provision of administrative privileges or the security concerns of the hosting party.

Lastly, but importantly, paper-dominant workplaces face considerable compliance difficulties. In the next section we address these as well as broader compliance and security challenges.

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• The Complexities of Compliance

Construction is currently “one of the most highly regulated industries in the country from the perspective of both the industry and its clients.”³ The industry is serious about compliance with those regulations too. The Australian Building and Construction Commission (ABCC) has the power to impose severe penalties on non-compliant companies, and investigates even in the absence of any specific complaint.⁴

This makes compliance more than just a matter of only gathering documentation when something goes wrong – it necessitates maintaining an audit trail at all times. This is complicated, however, by the information management practices of typical companies. Paul Wilkinson explains in his in-depth publication on construction collaboration technologies:

In traditional paper-based construction projects, the project team may have exchanged literally thousands of pieces of information, including estimates, schedules, contracts, meeting minutes, change order, RFIs, CAD drawings, submittals, maintenance manuals, correspondence, faxes, memos and email. Some will now exist in paper form, some will be on computers; some may be stored in archive boxes or filing cabinets, others may be stored on computer disks, CDs, removable hard-drives or tapes. The information may be spread across several different organisations involved in the delivery of the project...⁵

When information is fragmented in this manner, compliance becomes a considerably more difficult endeavour. Even if a company



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keeps all its data in one place, under-resourced indexing can make it difficult for staff to know how to search for what they want. This kind also elevates the cost, time, labour and complexity of document discovery in the event of civil or criminal litigation.

Another important compliance consideration is document retention requirements. Distinct from the practice of good information management during projects, retention requirements demand that companies keep physical copies of certain documents for at least seven years (for items relevant to the Fair Work Act 2009) and up to 20 years (for patents). Sentencing schedules must then be set up to ensure that documents are destroyed once the required retention period ends, both to prevent money being spent on unnecessary storage and, in the case of human resources documentation, to maintain compliance with the Privacy Act.

3. Housing Industry Association, *Housing Australians – Increasing Australia's Future Prosperity Discussion Paper - 5 year Productivity Review*, (December 2016) p.16.

4. <https://www.abcc.gov.au/compliance-and-enforcement/how-we-investigate/what-expect-investigation>

5. Wilkinson, P., *Construction Collaboration Technologies: The Extranet Evolution*, Taylor & Francis, Oxford, United Kingdom (2005) p. 119.

However, in much the same way as it impedes searching, poor indexing causes issues when it comes to defining document destruction dates. Most companies are aware of where their retention obligations end, but are unwilling to commit to sentencing schedules because of uncertainty over what their archives contain – especially if those archives date back to the pre-digital era. From a liability perspective, the relatively small cost of ongoing storage is more than justified by the possibility that an arbitrary sentencing mechanism might accidentally destroy something important. They could audit the archives themselves, of course, but the time- and money-consuming task of going through them would require a financial investment equivalent to the cost of decades of static storage.

And yet, the price of years of unmanaged storage adds up. Wilkinson cites the 2004 example of Arup, a multi-disciplinary consultancy that, over 70 years of project work, “had accumulated more than 100,000 archive boxes, with an index held in 150 lever-arch files, and over 650,000 drawings held on microfilm,”⁶ much of which was likely no longer legally relevant nor of any historical interest. If the company was storing their boxes in-house, they would have been paying for it through the opportunity cost of poorly optimised real estate. If they were using a third-party storage solution, they would have been committed to an unnecessarily large storage contract.

Situations like this are still common in construction, and in other industries that deal with large volumes of information assets. Below we address the attendant issues of value, and how traditional information management solutions are failing to meet the diverse needs of the construction industry.

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⁶ Wilkinson, P., *Construction Collaboration Technologies: The Extranet Evolution*, Taylor & Francis, Oxford, United Kingdom (2005) p. 122.

Value and Variety

As an industry that deals largely in tangibles, construction as a whole tends not to prioritise information management. A fear of scope creep and cost overruns exacerbate this problem, with a general feeling throughout the sector that resources would be better spent on something that provides a wider variety of benefits. The industry also deals with particularly high labour costs that have continued to rise in recent years. If these costs inflate at a faster rate than productivity growth, profitability decreases – followed by a lessened probability of securing new contracts.⁷ Overall, these concerns put pressure on procurement workers to save as much money as possible when engaging providers of non-core services.

Often, this can result in companies electing to handle their information management internally. But what is ostensibly a cost-saving decision can end up as a financial liability due to an unrealistic appraisal of the capability of in-house services – leading to the indexing and organisational problems mentioned earlier.

Another impediment to maximising the value of information management is the lack of holistic solutions. Companies may have information in a variety of formats, spread over multiple different systems, and managed by different in-house and third-party solutions. The mix of these elements can also vary from project to project. This deconsolidation reduces efficiency in the same way as fragmentation of information assets among different parties on a project, with the added effect of driving up operating costs.

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The same thing occurs in a broader sense through a failure to utilise the full service offerings of contractors. A plumbing contractor that also provides electrical services – and that offers a reduced rate to businesses engaging both of those capabilities – is a better investment than two separate contractors. In terms of non-core services, construction companies can find themselves in a situation of outsourcing their ICT system, information management, cleaning services, office relocation logistics and worksite FF&E to different providers. Rarely will a company look for a contractor that rolls all of these services into a single, cost-saving solution.

⁷ Master Builders Association of Victoria, "Construction sector – outlook, labour costs and productivity", Deloitte Access Economics (March 2016), p. 27.

The Solution:

Connected, Compliant and Cost-Effective Information Management

To tackle the challenges presented by paper-based workplaces, compliance and the need to maximise value, construction companies are increasingly turning towards external information management solutions that go beyond the scope of traditional access and archiving partnerships.

Modern information management firms specialise in creating highly organised information environments.

that reduce or entirely eliminate the traditional inefficiencies experienced by the construction industry. To help worksites improve their information management, records management partners will audit in-house archives for content, then directly index the files, store them until they are needed, and physically or electronically deliver them on demand. Alternatively, information management firms can help construction companies assess if digitisation is likely to improve efficiency. If so, paper documents can be digitised using existing indexing conventions for rapid, real-time searching and retrieval through intuitive systems that deliver assets in any format, on any device. Digital solutions can also help make information equally available to all project participants.

Engaging a good third-party information management solution immediately simplifies compliance by making documents easier to find so they can be quickly handed over to regulatory authorities or in-house lawyers. These companies are conscious of the



Third-party information management

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evolving legislative environment and can keep track of stored information over time, setting up retention and sentencing schedules that ensure destruction occurs when documents reach the end of their lifespan. They can also assist with proof of compliance by providing certificates of destruction.

In terms of adding value, it is important for construction companies with a wide range of non-core needs to ask what additional services an information management provider can offer them, and what cost savings engaging those services might have. The best information management firms integrate their archiving, digitisation and retrieval solutions with a wider range of offerings, including asset management and data courier services, customisable ICT interfaces, cleaning services, a full range of office relocation services for rapid worksite redeployment, countrywide support, and many more functions.

A good information management solution not only directly addresses the major data-handling challenges of the construction industry, but also provides additional access, compliance and value benefits.

Benefits

: Clutter-free

After transitioning to an external information management solution, construction companies should notice an immediate improvement to efficiency through better organisation and accessibility. Because they have only pertinent documents on hand at any time, worksites using third-party archiving solutions are less cluttered, reducing the risk of document mishandling. This positive impact on efficiency has a flow-on effect across all parties involved in a project as each becomes more able to fulfill their responsibilities in a timely manner. To the extent a digital solution is engaged, data access over the full range of mobile devices means information portability is enhanced, allowing staff to access and transmit important documents on the go, in a format of their choosing.

Using an external cloud-based system also enhances information neutrality so that work units can operate more independently, drawing data from a real-time system rather than from disparate sources that may themselves be working on an information delay.

In addition, the best storage and retrieval solutions minimise the challenges of transitioning by being entirely customisable, removing the need for any significant staff retraining. Overall, this means a dramatic improvement in the way time is spent across all sections of the business – and a subsequent increase in productivity.

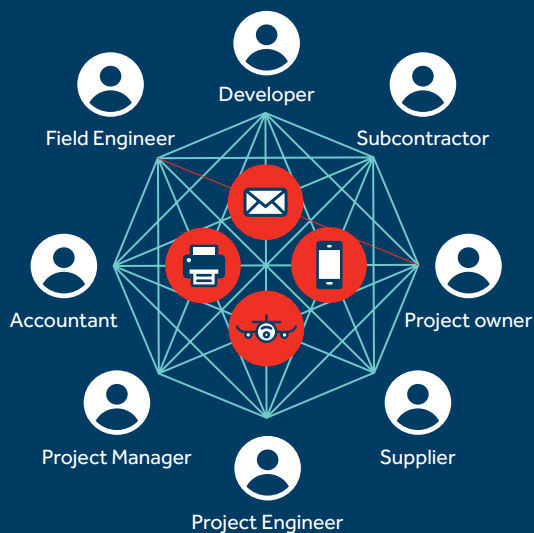
: Compliant

The benefits of better compliance in the highly regulated construction industry become particularly evident during an official audit when more effective indexation can save companies a considerable amount of money. This is especially true if lawyers have to be retained.

Additionally, having an information management partner paying close attention to sentencing schedules means that documents are less likely to occupy costly shelf space – both in-house and off-site – which dramatically reduces information storage overheads.

Finally, accurate retention and destruction calendars help ensure archives comply with the Privacy Act and reduce the risk of costly litigation down the track.

Fragmented Model



Integrated Model



: Cost-effective

An information management partner that provides an integrated solution simplifies the procurement process by acting as a one-stop shop for a wide range of logistics and administrative needs. As a result, not only is less time spent on the procurement process itself, but internal staff can be put to better use.

Solutions that integrate a wide range of services also mean construction companies enjoy reduced costs for those services overall. Providers of these consolidated systems will often provide attractive quotes to businesses looking to engage a number of different services. The silent benefit of this is that coordination between those services is also entirely managed by the information management firm – meaning, for example, that a worksite office relocation project would not need to be organised separately from, say, the archiving of physical documents and installation of a digital system in the new premises.

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7 Must-Ask Questions for choosing an information management solution in construction

1. Will the new solution make your documents easier to access?

If you move to an external solution, are your files going to be more accessible? The best solutions make your documents available electronically across all your devices, and can deliver hard copies within just hours.

2. Will the solution improve your existing archives?

The best information management solutions will combine the relocation or digitisation of your archives with a full audit of the files within them. This will help you clarify destruction schedules, make your indexing more accurate, and eliminate redundant storage.

3. Is the solution flexible and customisable?

Information management systems need to be easy for everyone involved in your project to use. The best providers will help you tailor a storage solution and access system that adapts to your existing filing references, industry terminology, record-keeping practices, and more.

4. Will the solution help all the project participants communicate better?

A major obstacle to the efficient functioning of worksites is the lack of a "single point of truth". Your information management solution should allow simultaneous access by multiple parties, with information updated in real time so everyone is always up to date.

5. Will the solution help you with compliance?

Compliance is one of the biggest concerns in the construction industry. The ideal information management solution will make relevant data instantly accessible, as well as perfectly matching your retention and sentencing schedules to your legal obligations.

6. Will your archived and digitised information be secure?

Your employees, business partners and clients deserve the best possible security. Your partner's storage sites need to be equipped with fire protection systems with back-to-base intruder detection and 24-hour surveillance. Employees should also all be police-vetted.

7. What other services can the information management firm provide?

You should be looking to squeeze as much value out of your information management partner as possible. The best way to do this is to ask what other services they can provide, such as commercial relocations or cleaning, and how consolidating could reduce your costs.

The Grace Advantage

With over 50 years in the business, Grace is uniquely qualified to deliver excellence in information management.

Grace provides solutions for the full range of construction industry requirements, from storage and indexing to retrieval and destruction. Here are the advantages your company will enjoy with Grace:

- Expert consultants to assess the precise needs of your business and tailor solutions that address your specific information management challenges.
- The speed, convenience and security of 26 information management centres across the country – more than any other provider.
- Many facilities are protected by state-of-the-art safety systems, including sprinklers and fire doors – all linked directly to the local fire brigade. Plus, electronic intruder detection with back-to-base alarms.
- Complete and customisable cataloguing, indexing and sentencing solutions for projects of any size, right across the country – with information management software that gives you total control from any device.
- A scanning and digitisation process to make searching and retrieval as fast as possible. Digital files are audited to ensure 100% accuracy, and can be delivered in any electronic format or securely hosted in Grace's online data repository.
- Fast and flexible retrieval, with a standard service that delivers documents twice per day, urgent scan-on-demand services that respond within just 3 hours, and the option to personally retrieve information on site.
- The only secure chain of custody in the industry that spans the entire country. With GPS-tracked vehicles and police-checked staff, your documents never leave Grace's sight. Their client-anonymous indexing system also ensures your confidentiality at all times.
- Real-time tracking of your documents, from anywhere in the world.
- Secure destruction of documents (either on schedule or on demand) that operates under a strict authorisation process, protecting against both accidental data loss and unnecessary storage terms.
- Innovative solutions that recruit Grace's commercial and fine-art removals expertise to cater to a wide variety of unique business requirements.

Contact Grace today to find out how their specialised information management solutions and integrated services can help you. Visit www.grace.com.au/information/contact-us for your nearest office.

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