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An introduction to the Australian Institute of Building

The Australian Institute of Building (AIB) is incorporated by Royal Charter and is the preeminent professional body for building professionals in Australia and the Asia-Pacific region. The AIB has a long and proud history of supporting and serving the building profession. For more than sixty years the Institute has worked with the building and construction industry, government, universities and allied stakeholders to promote the building profession, support the development of university courses in building whilst promoting the use of innovative building techniques and a best-practice regulatory environment.

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A Message from the National President Norman Faifer FAIB FAIQS FIAMA



Welcome to my third **Construct** column as National President of the Australian Institute of Building.

The six mainland State/Chapter Professional Excellence in Building Award events have now concluded – these awards are for not what was built but rather how it was built – the processes by which you, our members and active participants and practitioners of your craft and profession, initiated, followed and managed in the delivery of your project – mostly I dare say on time, on budget and with quality*.

To all the state Chapter winners of Professional Excellence in Building Awards, congratulations. By being Chapter winners you now automatically enter the National PEA competition and the National PEA Judging Panel will now assess you and your project in the national arena, the National Awards being held in Sydney on, 26 September 2015. I wish all nominees all the best.

When I was recently in Hong Kong with our CEO, Robert Hunt CPA, assisting our Overseas Chapter President, Robin Fardoulys LFAIB, conducting Professional Interviews for advancement of Hong Kong members to MAIB and FAIB grades, I was reminded by one applicant (quite robustly) that it is not just the three pillars of time, cost and quality* that constitute good building and construction management but also the two additional pillars of sustainability and occupational health and safety too. The Hong Kong regulators have written these two issues into their culture.

Producing sustainable items is a challenge for all industries, not just in the building and construction industry and producing these items in a safe and healthy environment for us to work in is also a challenge.

In having visited all chapters at least twice in the preceding months (once for a regular chapter committee meeting and once for each Chapter's PEA event) I can report that we have both healthy chapters and a united national focus. As I mentioned in the last President's column that as this Institute is a truly national and united organisation we do not suffer from being a "federation" – a collection of states and chapters each doing their own thing but rather practicing a unified "united we stand" approach – this positive arrangement is increasingly proving its worth and coming to the fore with our relationship with other building industry stakeholders.

The current discussions and debates on non-conforming building products is hot and getting hotter, each state and the federal scene is affected and the various industry stakeholders are pulling together to broker a solution with associations, professional bodies, building product manufacturers and distributors, testing and code entities, regulators and government all in discussion and "jostling" for position.

The issue is complex: The Building Code of Australia (BCA) (or National Construction Code (NCC)) (via the Australian Building Codes Board (ABCB)) voluntary Codemark and mandatory Watermark schemes, formerly prescriptive rules are now performance based and deemed to satisfy arrangements, Australian Standards, overseas (approved and unapproved) Standards, local NATA registered testing laboratories/authorities, overseas testing authorities, the ACCC and the various free trade agreements the Federal Government has brokered with Australia's trading partners all having influence on how this issue will finally, if ever, be resolved.

The Institute is taking a proactive interest in the non-conforming products debates and has been invited and participates in meetings organised by various stakeholders: the Victorian Building Authority (being the unfortunate host regulator of the Lacrosse Docklands building fire), the ABCB, ACIF, ACIF Products Group, AiG Products Group, AIBS, FPA, MBA, HIA, COAG Building Ministers' Forum/Meeting, Senate Inquiry on Non-Conforming Building Products etc. We are at the table representing you!

There is a meeting of COAG Building Ministers being held in late July 2015 and submissions from industry will be provided and the Senate Inquiry has meetings and Inquiry days already mooted for later this year too, no doubt these meetings will add a rigor and robustness (not to mention a few other colourful things) to the whole issue.

I wish us all smooth seas and fair winds in our building and construction endeavours.

Norman Faifer FAIB FAIQS FIAMA

National President (and Chairman of National Council)
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What's in a Name?

A Brief History of Some of Australia's Construction Giants

By Neil Sarah FAIB (ret.)

In most industries, brand names are considered to be valuable assets. For example, it would be difficult to imagine the circumstances where the directors of Coca Cola would re-brand its range of products. However, in the last seven years we have seen five famous names disappear from our industry. First, in 2008, the directors of Bilfinger Berger Australia announced that its operating subsidiary Baulderstone Hornibrook would be re-badged Baulderstone. Secondly, in 2013, the directors of Lend Lease Corporation announced that its operating subsidiaries Baulderstone and Abigroup would be re-badged Lend Lease Infrastructure. Finally, in 2015, the directors of CIMIC, formerly Leighton Holdings, announced that its operating subsidiaries Leighton Contractors and Thiess would be re-badged CIMIC.

The purpose of this article is not to question the correctness or otherwise of these decisions. Rather, its purpose is to re-call, in brief form, the history of five important companies, AW Baulderstone Pty Ltd, Hornibrook Constructions, Abigroup, Leighton Contractors, and Thiess, and the contribution that their founders, Bert Baulderstone, Sir Manuel Hornibrook, Gennero Abignano, Stanley Leighton and Sir Leslie Thiess made to the social fabric and built environment in Australia.

BAULDERSTONE

AW Baulderstone was incorporated in South Australia in 1946 by the late Bert Baulderstone, a subcontract bricklayer with an ambition to operate as a head contractor in his own right. Despite serious under-capitalisation, the tiny company survived and grew, and by 1972, when Bert retired, AW Baulderstone was a genuine force in the South Australian

commercial construction and civil engineering market. Baulderstone continued to grow, and in 1982, the French contractor SAE (Societe Auxilaire d'Enterprises) purchased a 20% interest in the company, moving to 50% in 1985. In the same year, Elders IXL sold Hornibrook Constructions to Baulderstone for a 30% interest in the merged group, and, after the merger, the company traded as Baulderstone Hornibrook until 2008. SAE bought out Elder's interest in 1992, and Bilfinger Berger, a German contractor, bought 100% of Baulderstone Hornibrook from SAE and the family and staff in 1993. Bilfinger Berger sold its contracting interests in Australia to Lend Lease in March 2011, and about two years later, Lend Lease extinguished the Baulderstone brand.

In 2010, Baulderstone earned an after-tax profit of \$45 million on revenues of \$1.5 billion, and the company's status as a top-tier commercial building and civil engineering contractor was universally accepted throughout the industry. In its sixty four years Baulderstone completed a multitude of building and civil engineering projects too numerous to list. In Adelaide, Baulderstone's legacy, in my view, is expressed in the new Adelaide Oval, in Sydney the spectacular Anzac Bridge, and in Melbourne the elevated road and bridge linking the city end of the Tullamarine Freeway to the Westgate bridge. The Baulderstone logo was also seen in all of the other states of Australia, in Papua New Guinea, in Indonesia, in Vietnam, in Panama, and in mainland China, and when Lend Lease completed the take-over, it acquired a contractor with significant Australian and international presence.

Bert Baulderstone is to be credited with building the foundations for a future major

contractor, and in the 1960s he led the industry in the employment of young professionals in his company. In fact, his appointment of three graduates, Bob Mierisch, Dean Pritchard and John Goodman provided the company with three future Chief Executives between 1972 and 1992. Bert also left his mark in the community through his involvement in the Norwood Rotary Club, the Ashford Hospital, and the Norwood Football Club, as well as a number of other community and sporting organisations. He was a strong supporter of the fledgling Australian Institute of Building, becoming an associate member in 1952, a Fellow in 1956, and state chapter president in 1960. He also made major contributions to the Master Builders Association, organising the construction of the MBA headquarters on South Terrace, Adelaide, and playing a key role in the formation of the MR Hornibrook golf competition between members of State Master Builders Associations, a tournament that is still contested every year. In his book *Towards Excellence: The AW Baulderstone Story*, Peter Donovan made an appropriate summary of Bert Baulderstone's contribution to the industry and to the community in the following terms:

"From the outset Bert Baulderstone strove for a high quality product and resisted suggestions for compromise... Bert had a great insight and a high regard for professionalism and expertise. His recruiting of men who would complement and extend his own strengths meant that his company quickly outstripped its competitors. All the while Bert was attentive to the people... The loyalty that he displayed to them was reciprocated and was an important factor that helped the company overcome its many setbacks."

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HORNIBROOK

Hornibrook Constructions was founded in Queensland by the late Manuel Hornibrook in 1912, and incorporated in 1925. In the early days the company concentrated on civil works associated with water reticulation systems and open cut coal mines, and then on bridges and roads as its capital base and inventory of heavy plant and equipment grew. Hornibrook dominated the bridge building sector in Queensland, leaving behind such well known landmarks as the Storey Bridge and the William Jolly bridges in Brisbane. The company spread its operations into NSW, Victoria and South Australia, and by 1955 it was in the position to undertake a successful public float that raised about \$440,000 from the public with the existing Hornibrook shareholders maintaining a majority of the issued capital. The company was listed on the Brisbane and Sydney stock exchanges, but, for various reasons, and despite the successful completion of the superstructure of the Sydney Opera house, the fortunes of Hornibrook Constructions declined, and in 1965 the company was taken over by the English conglomerate and trading house Wood Hall Trust. Wood Hall continued to operate Hornibrook, but its performance measured by both revenue growth and profitability was lacklustre, explained in part by the retirement of Sir Manuel Hornibrook as Chairman in 1967. In 1982, the Australian conglomerate Elders IXL took over Wood Hall Trust in order to add the pastoral house and wool broker Australian Mercantile Land and Finance Company to its portfolio of Australian agricultural businesses, and in doing so it acquired a civil engineering

contractor that did not fit its business model. When approached by Baulderstone in 1985, Elders was a willing seller, taking a 30% shareholding in the merged group. As a result, Baulderstone Hornibrook was born, and over the next twenty three years it became a force in Australian contracting and in particular a major force in road and tunnel construction in the major east coast capital cities. The decision to remove Hornibrook from Baulderstone Hornibrook in 2008 was explained by the company's Chief Executive in the following terms: "In October the company changed its name to Baulderstone and we launched a new brand with themes of Rich Heritage and Strong Future. We have received many comments from clients and stakeholders on the new refreshed brand which continues the famous AW Baulderstone and MR Hornibrook traditions." And so, without any further comment, one of the most famous names in the history of Australian construction disappeared.

Manuel Hornibrook left school at the age of thirteen, and after completing an apprenticeship as a carpenter and joiner, he started his own business. The development and growth of Hornibrook Constructions would have received most of his attention, but he found the time to serve both the community and the industry. In the case of the former, he was both a participant and an administrator in his bowling and golf clubs, and he served a term as President of the Queensland Golf Council. He was an active Rotarian and the foundation master at the University of Queensland's International House. His commitment and service to the Master Builders Association of Queensland, the Master

Builders Federation of Australia, the Australian Institute of Building, and the Civil Engineering Contractors of Queensland was outstanding, and ultimately recognised by life membership of each of these organisations. Perhaps the role that he played in the formation of the Australian Institute of Building had the most profound and lasting effect on our industry, and without his promotion of the concept of professionalism, and his focus on the importance of tertiary education for building students, the progress towards the recognition of building professionals in the industry would have been much slower. Today we are much closer to having an equal footing with the architects and engineers as professionals in our industry, and we have Sir Manuel Hornibrook, amongst others, to thank for this. Sir Manuel's service to the community and the industry was recognised by the award of imperial honours, an OBE in 1957, and a knighthood in 1960. Finally, in August 1969, only eight months before his death, he accepted an appointment as an Honorary Fellow of the Institute of Building London, the only Australian ever to receive this prestigious recognition. Sir Manuel Hornibrook's biographer Waveney Browne summarised his life in the following terms:

"A humble entrance; the playing of many parts with distinction and honour; world acclaim and recognition for a star performance; a player who outshone the rest of the cast; but still a simple man, justly proud of his achievements who looked for only goodwill and fellowship- M.R. a man amongst men- "A man of achievement""

ABIGROUP

In 1957, Gennero (Jim) Abignano arrived in Australia as an immigrant from his native Italy. In 1961 Jim registered G. Abignano Ltd in Sydney, and over the next twenty years he developed a successful earthmoving and civil engineering business from humble beginnings. Such was the company's success that the public was invited to take an equity interest, and Abignano was listed on the Australian Stock Exchange in 1981. Jim was appointed to the position of Executive Chairman, and the family retained a significant interest in the business. As a public company, Abignano was able to use its resources to grow through acquisition, purchasing Enacon and Robert Saltzer Constructions. For a number of reasons, including the 1983 recession, the company encountered trading difficulties, producing a series of unsatisfactory results, and Jim Abignano left the company in March 1986. In 1988, a group of managers in the company bought out the Abignano family interests, changing the name to Abigroup, and retaining the stock exchange listing. In 2002 Abigroup had its first success in major road projects, winning the \$500 million M2

Motorway in Sydney. The higher profile that the company now enjoyed attracted the attention of the German giant Bilfinger Berger, and, in 2004, Bilfinger Berger acquired 100% of Abigroup, which was then de-listed on the stock exchange. In 2010, Bilfinger Berger changed its name to Valemus, and the Valemus stable, Abigroup, Baulderstone and Conneq Services, was sold to Lend Lease. In 2013, Lend Lease announced that the Abigroup badge would be phased out in favour of Lend Lease Infrastructure.

Jim Abignano's life in Australia is a genuine success story. When Jim arrived in Australia, he was virtually penniless, and his capacity to form his own company only four years later was a testament to his determination to succeed in his new country. By 1981, his company was an established and highly regarded mid-tier civil engineering company, and, as noted earlier, the company was in the position to complete a successful public company float. Like Bert Baulderstone, Jim Abignano built the foundations for a company that by 2011 was a \$2 billion business, and which accounted for at least 40% of the \$1 billion that Lend Lease paid for Valemus. Jim also served the community in various capacities, and in 1983 he was awarded an AM (Member of the Order of Australia) for his services to the community and to the building industry.

LEIGHTON

Leighton Contractors was incorporated in Melbourne in 1949 as a subsidiary of the English company Leighton PLC. From small beginnings Leighton became a major Australian and international civil engineering and mining contractor, with revenues in 2013 exceeding \$24 billion. On any view, this is a spectacular story of corporate growth that involved expansion into South East Asia, Africa and the United Arab Emirates. Along the way Leighton Holdings grew through both merger and acquisition, creating a number of operating subsidiaries including Thiess, John Holland, and Leighton Asia. The merging with Thiess became a turning point in the ownership and control of Leighton, with the owners of Thiess, the German contractor Hochtief, taking a 30% interest in Leighton in exchange for the transfer of the Thiess assets into Leighton Holdings. Over the years Hochtief increased its stake in Leighton, eventually moving to 70% ownership in 2013. By then Hochtief was owned by the Spanish group Grupo ACS, and, with the appointment of Marcelino Fernandez Verdes from ACS as Executive Chairman and Managing Director, the control of Leighton by Australian executives effectively came to an end. In 2014 Mr Verdes announced a strategic review that led to the sale of a number of assets including the John Holland group, and eventually to a

re-branding that was said to better reflect the new streamlined structure of Leighton. The new name, CIMIC (Construction Infrastructure Mining Concessions) was approved by shareholders at the 2015 Annual Meeting, and so Leighton, which with Lend Lease was the most recognisable of the Australia major contractors, disappeared from view.

Stanley Ellis Leighton was born in the United Kingdom in 1898, and he joined the family construction company D. Leighton and Sons in 1920. In the early days Leighton focussed on housing, and later on cinema theatres across England for the Odeon Group. Stanley succeeded his father as Managing Director, changing the name of the company to Leighton Contractors Limited, and expanding its activities to include factory and warehouse construction and development projects. Stanley retired in 1937, but came out of retirement during the Second World War, continuing to run the company after the cessation of hostilities. In England the company faced limited opportunities in a difficult competitive environment, and after investigating both the

South African and Australian markets, Stanley Leighton decided to commence operations here, taking charge himself, with the company continuing to operate in the United Kingdom. Stanley arrived in 1949, first building houses in Sydney, and then taking on civil engineering contracts in Melbourne. By 1962 its revenues had grown to more than \$4 million, and at that size, and with a record of stable profits, the company was able to seek public listing, joining the Melbourne Stock Exchange in that year. In 1971 the company was listed on the Perth and Sydney Stock Exchanges, and its name was changed from Leighton Contractors to Leighton Holdings. Stanley Leighton served as Chairman from 1962 to 1972, at which time he retired having reached the age of 74. Between 1962 and 1972, the company grew its revenues from \$4 million to \$58 million and in his last year the company earned after-tax profits of \$1.74 million, representing a return on revenue of 3.1%, an exceptional result in an industry where competitive pressures more often than not forced returns on revenues below this level. Stanley Leighton's legacy, then, is the founding of a company that was in a strong position





when he retired, and which used that base to grow into Australia's largest major contractor. In his retirement, Stanley continued to live in Melbourne for another nineteen years, passing away in June 1991 at the age of 93.

THIESS

Horn and Thiess was founded in Toowoomba, Queensland, in 1933 by Leslie Thiess and his brother Herbert. Four other brothers, Cecil, Patrick, Stan and John joined the company, and when Henry Horn retired in 1939, the name of the company was changed to Thiess Bros. From the outset the small company grew rapidly, accumulating heavy equipment as finances permitted, and by the late 1940s, Thiess was a major contractor in Queensland, specialising in road construction, open cut coal mining, and large scale land clearing and ploughing for grain farmers.

Thiess played a major role in the building of defence infrastructure in the Second World War, particularly in the area of airstrip and road construction for bases required by the United States armed forces, and in the process it increased its inventory of the very latest American heavy equipment. In 1944, Thiess had its first exposure to open cut coal mining in Blair Athol in Queensland, and mining coal for the Japanese export market in a joint venture with Peabody Coal and Mitsui would later become Thiess's most profitable activity.

In 1951, Thiess Holdings was incorporated with Les and Herbert and their families each owning 35%, and the four brothers sharing 30%. A public float was considered at that time, but it was decided to defer this into the future. Later, in 1958, four hundred thousand 50 cent shares were issued to the public at a premium of 33 cents, and Thiess Holdings became a listed public company. In the same year Thiess won the first of three dam and tunnel contracts for the Snowy Mountains Authority against strong international competition, the successful completion of which cemented Thiess's reputation as a world class heavy engineering contractor.

Les Thiess had already established contact with Japan in relation to the export of coal, and he became aware of the potential for using the Toyota Land Cruiser in the difficult terrain in the Snowy Mountains. The import of these vehicles led to the appointment of Thiess as the Australian agent for Toyota, and ultimately, in 1971, to the incorporation of Thiess Toyota, 60% owned by Thiess, and probably one of the most valuable vehicle franchises in Australia at that time.

In 1961, the Thiess Peabody joint venture shipped its first coal to Mitsui in Japan, and the Queensland coal export industry was born. In addition to coal mining, Thiess continued to build roads and dams around Australia, as well as other infrastructure projects and some commercial construction, and after an early setback in 1964, Thiess established itself as a successful public company, with the share price reaching \$3.00 in 1967.

In 1973, Les Thiess retired from the position of Managing Director, but stayed on the board as Chairman, and in 1974 he accepted an appointment as Chairman of the Darwin Reconstruction Authority following Cyclone

Tracy. Over the years Thiess had established a strong link with Mt. Isa Mines, and, by 1976, MIM owned 16% of Thiess's issued capital. This holding was sold to CSR, indicating CSR's interest in the Thiess coal mining assets, and in 1980 CSR launched a take-over bid for Thiess, which, despite resistance from the board that was described as fierce, was ultimately successful. The total value of the bid was \$480 million, one measure of the success that Les Thiess and his brothers had achieved.

The construction assets of Thiess did not fit CSR's business model and they were sold to the German contractor Hochtief in 1981, and in 1983, Hochtief sold Thiess Contracting to Leighton, receiving a 30% interest in Leighton's issued capital as consideration. As part of the Leighton stable, Thiess went on to become the world's largest contract miner. When the directors of ACS abandoned the name Thiess in favour of CIMIC in 2014, yet another great name in the history of Australian construction was lost.

Les Thiess was born in 1909, and he left school at the age of twelve, immediately going to work on the family farm. His father encouraged Les's interest in heavy machinery, leading in 1933 to the formation of Horn and Thiess, earthmovers. Les Thiess was very much a hands-on person, and for many years he and his brothers worked on the various sites, most of them involving camping a long way from home. In later years Les was continuously on the move around Australia and to Japan, using private aircraft owned by the company.

His enormous energy and commitment spilled over into his employees, who were into loyal and hard-working, and this was particularly significant in the difficult conditions encountered in the Snowy Mountains. Even after the CSR take over, and at the age of seventy one Les continued to develop his interests through the family company Drayton, focussing on further coal development and his cattle interests in the Kimberley, and he showed no interest in retirement. In 1971, Les Thiess was knighted in recognition of his contribution to the coal export industry with Japan, and in the same year he received a very rare award from the Japanese Government, the Third Order of the Sacred Treasure. Sir Leslie Thiess died in 1992 at the age of 83.

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How Local Councils can Promote Heritage Conservation in a Positive Fashion

Having respect for heritage buildings shows respect for good builders of times gone by.

By Dennis McManus PSM. Heritage Consultant and retired Senior Heritage Officer, NSW Heritage Council.

This article is based on a presentation given to the Annual NSW Local Government Heritage Network Seminar in Parramatta in August 2013. That presentation reflected briefly on the development of the NSW Local Government Heritage Program and of the successes in Wingecarribee Shire in the NSW Southern Highlands related to this Program.

I started work as a town planner with NSW State Planning in 1966. In 1981 I was seconded to the Heritage Branch. That secondment turned into 25 years of work in an area I loved. It was made a pleasure by the nature of the work and by the people I worked with as colleagues and in the wider community.

We sometimes forget it, but a primary quality of heritage is about beauty. Regrettably that was not always my experience of planning – it should and could have been different but quite often the attention of planning was on floor space ratios, traffic management and parking controls. We were told that how things looked was simply a value judgement. The ugly three story walk flats from this time are a legacy of this “planning”.

But good planning has to be the context for all heritage work because without the right setting heritage buildings and sites sit in sea of junk and no beauty at all.

In the 1970s the battles over new development

were inevitable because there was little community trust in planning because of the poor standard of approved development. When heritage legislation was first introduced in April 1978 some planners and developers argued that residents were unfairly invoking heritage concerns to stop new development. But who could blame them when the quality of new development in Australia at that time was by and large lacking.

In the 1970s there was almost no prior identification of heritage items in planning schemes. The first local government heritage studies were funded in Berrima and Braidwood in 1979 and then Gulgong and Orange in 1980.

My first years in heritage taught me that there was a real gap between heritage experts on the one hand and heritage item owners on the other. Many altercations took place which simple discussion might have resolved.

In 1983 an architect arrived at our office at 175 Liverpool Street in Sydney to tell us about the Heritage Advisory Service in Victoria and in particular the places where she had worked in - Beechworth, Chiltern and Yackandandah. That person is Elizabeth (Liz) Vines. Liz quite rightly received an Order of Australia Medal for her services to heritage in 2009.

What Liz had to say made complete sense to me. Even if you have the best heritage studies

and controls in place they will be useless if you cannot communicate the requirements to the outside world in a practical way. And to do this before someone had committed themselves in mind and money to a non-happy solution.

Better to get in front of this confrontation with good discussion and perhaps quick sketch plans and ideas before development applications were lodged. And do this with the best practical knowledge of how to restore buildings and how to design new buildings and additions that fitted into heritage settings.

Liz became the first adviser in NSW and this was in Hawkesbury Shire. In very little time the service grew to many councils and in due course to cover much of the state.

At least three key aspects made the heritage advisory program successful.

|||| It was a free professional service to heritage owners;

|||| To a large extent it operated independently to give without advice fear of favour advice to building owners, the council and the community;

|||| It emphasised finding solutions rather than dwelling on conflict

I mentioned above the early funded heritage studies. In 1979 small one off local heritage funds were set up in Braidwood and Canowindra. These heritage studies, the heritage advisory service and local heritage funds formed the basis of what became the NSW local government heritage program.

This program was by far the best way to spend limited heritage grant funding. Dollar for dollar money spent outside the heritage office to encourage local government to be actively involved in heritage management made complete sense to me.

In due course we had an 8 point program on how councils could promote heritage conservation. They were:

1. Establish a heritage committee
2. Do a heritage study and list the items in your Local Environmental Plan
3. Run a heritage advisory program
4. Manage heritage in a positive way
5. Run a local heritage fund
6. Run a main street program
7. Present educational and promotional programs
8. Set a good example by making sure council's own heritage assets are well looked after.

We coupled this program with support funding for studies, advisors, local funds and main street programs and this is the program which continues today. Needless to say it is a legacy of which I am very proud.

Some heritage successes in relation to Wingecarribee Shire using the Local Government Heritage Program:

Wingecarribee Shire is located in the Southern Highlands about 100 kilometres south from Sydney. It was formed in 1981 from the amalgamation of 3 councils – Mittagong, Bowral and Moss Vale. As a result of this amalgamation it has three main towns – Bowral, Mittagong and Moss Vale and many villages including the larger centres of Robertson, Bundanoon and Berrima.

I mentioned above the necessity of good planning as the context for all heritage work. Wingecarribee does have good planning controls and it has the blessing of being almost wholly within the Sydney Water Catchment which provides an additional layer of control plus it has several national parks and state forests.

Wingecarribee Shire has good planning staff including several who are well versed in heritage matters. Its planning controls are reflected in:

- a) The controls to prevent urban sprawl and a determined policy for to keep the towns of Bowral and Moss Vale apart by a major green belt
- b) The restriction on rural subdivision and the siting of new dwellings
- c) The complete lack of advertising signs in countryside
- d) Good use of development control policies for the towns and conservation areas
- e) Good design of many new developments in both traditional and modern style

Of course not all is perfect in Wingecarribee Shire, but at the risk of telling a good news story, I would like to speak of the successes in this Shire and to do so against the 8 point program.

1. Establish a heritage committee

Wingecarribee Shire has a good heritage committee. It has two active councillors, representatives from the local National Trust, the local Garden History Society and the Berrima District Historical Society, a heritage landscape specialist and two others with heritage expertise a heritage architect and heritage consultant.

The committee is serviced by a dedicated Heritage Officer in the council. The committee



New building connecting St Jude's Church and Hall in Bowral. The initial plan for this link building was modified as a result of advice from the Wingecarribee Heritage Committee so as to minimise the effect on this important heritage complex.

meets once every two months and its focus is on bigger picture matters in heritage.

Importantly, in between times the committee is able to comment on any development application involving heritage items. Members of the committee are sent by email any development matters where a heritage item/s is/are involved. Members can respond to the Heritage Officer who is able to put together a quick coordinated response to the development office concerned. If the matter is a major one, the committee can meet on site to discuss.

2. Conduct a heritage study and list the items in your LEP

Wingecarribee Shire had what was a state of the art heritage study done in the 1980s and the listings from this study were included in its 1991 Local Environmental Plan. Currently the 2010 Plan contains 352 listings, comprising 328 heritage items (40 of which are on the State Heritage Register), 16 heritage conservation areas and eight archaeological sites.

In 2008, heritage consultants were engaged by Council to review more than 700 potential heritage items identified by Council and the community for potential heritage listing. More than half were recommended to be heritage listed. In 2012 Council resolved to proceed with heritage listing of 80 of these properties whose owners supported the heritage listing and those under the ownership or control of Council, comprising 57 in private ownership and 23 in the ownership or control of Council.

The other 300 plus items have been deferred at this time.

3. Run a heritage advisory program

Peter Kabaila, a Canberra based Heritage Architect, is the current advisor to Wingecarribee Shire. Peter is well respected locally and as well as being an architect he brings to the job the skills of an archaeologist, historian, writer and publisher.

4. Manage heritage in a positive way.

The council is committed to this. It has on its staff appropriate people to give best advice and of course the back up of the heritage advisor. It is able to look at "out of the box solutions" to achieving a good outcome.

One project close to my own heart is the management of the abandoned shale oil mining town of Joadja near Berrima. Many councils and the Heritage Office would probably be wary of getting involved with this project. But not Wingecarribee Shire. It has established a small Joadja Advisory Group as part of the main heritage committee to oversee the conservation of this site with the new private owners.

Council established with the previous owner a rural subdivision agreement whereby the first time a new block of land sold in the valley near the heritage site a contribution of \$55,000 per block would be made towards a trust fund to aid the conservation of the Joadja site. So far five blocks have sold netting \$275,000 to the trust fund.



The large scale conservation of the remains of the important 19th century shale oil mining town of Joadja near Berrima NSW is a good example of the cooperation of Wingecarribee Shire Council and the private owners of this site. These photos show the before and after shots of the conservation of six cottages on the site. Work was completed during 2014.



This fund is overseen by the Joadja Advisory Group and money from it was used to attract a \$114,000 dollar for dollar grant from the Commonwealth in 2013 to undertake a range of work to the site completed in 2014. This

work included the removal of trees destroying the ruins, the rebuilding and roofing of six early cottages and the reconstruction of the tops of three massive chimney stacks.

The owners of Joadja had the full support of the council, the heritage committee and the heritage advisor and money to make this onerous job possible. For me, Joadja is the perfect example of an owner, the community and council working together to achieve a good result.

5. Run a local heritage fund.

Council has run a local heritage grants program four times since 2005 providing funding for 27 individual projects. Typically many of the projects have been for painting and other minor improvements like fencing.

6. Run a main street program.

No main street program has been run in Wingecarribee and to some extent this reflects the strength of its commercial areas compared with other centres in regional NSW.

The three main centres of Mittagong, Bowral and Moss Vale do have main streets of some character and these are reasonably well cared for. A major challenge for the future is the development of the rear areas of the main



The restoration of the early home of Don Bradman won the overall award in Wingecarribee Heritage Awards Program in 2013

streets of Bowral and Moss Vale – currently conflicted by car parking but they provide the opportunity for excellent design solutions including development of civic spaces at the rear linked to the main street by arcades.

7. Run educational and promotional programs.

Wingecarribee has an excellent tourism service based in Mittagong and a website. And it does take an interest in the promotion of heritage week, heritage sites and heritage trails.

For some years the council has been running a heritage awards scheme every second year. Again the responsibility of Sarah Farnese to run and she does put a lot of effort into this task. This year I was on the judging panel so able to see at close hand just what was involved.

The overall winner in 2013 was for the Don Bradman house in Bowral – his childhood home from 1911-1923. The conservation work to this site included reinstatement of a replica of the water tank Bradman used to hone his batting skills on.



The repainting of Bong Bong Anglican church at Moss Vale was assisted by a small grant under Wingecarribee Shire's 2013 heritage grants program.



Harpers Mansion at Berrima a 2015 Heritage Awards Program winner for best maintained heritage place

8. Set a good example by making sure council owned heritage items are well looked after.

Wingecaribee Shire has a number of civic buildings to look after as well as the great array of council owned assets including roads, footpaths, street trees, parks, playing fields and cemeteries. So far as civic buildings are concerned the Bendooley Street Group in Bowral presents a good example of the maintenance and the careful knitting in of a new library and health department complex at the rear.

I would like to conclude by summarising what local councils need to do to ensure best practice heritage management:

//// Have strategies and controls in place for the best possible future development of your area - this will provide an appropriate setting for any heritage items.

//// Know what heritage you have, legally listed or not, and have as much information as possible on it in council's property inventory system so that it is readily available to all to make good decisions.

//// Legally protect as much as is reasonably possible either as separate items or in a conservation area.

//// Heritage list items on the basis of heritage significance and manage with knowledge and common sense.

//// Have practical development control plans in place to guide and encourage good new development in conservation areas and around important heritage items.

//// Manage heritage in a positive manner – a positive attitude, free advisory services, waiver of fees, use of planning incentives clause and local grant funding.

//// Make best use of the heritage knowledge within your area to value add to decisions you make in relation to heritage items - e.g. through a good working heritage committee.

//// Promote and celebrate heritage conservation through the media, events and tourism.

Dennis McManus PSM BA, Dip T&C Planning, MBuilt Env



Wingecaribee Shire owns this group of heritage buildings in Bendooley Bowral which are well maintained and used.

Retired in 2006 after 15 years as a planner with NSW Planning and 25 years as a Senior Heritage Officer with the NSW Heritage Council. Dennis was awarded the Public Service Medal under the Australian Honours Awards in 1997 for his services to heritage conservation in NSW. He now lives in the Southern Highlands of NSW and is an active member of his local council's heritage committee. His other interests include University of Third Age, gardening, a book club and golf.



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Profile:

Alan Todhunter – University of Western Sydney

From Materials Australia

Alan Todhunter has over 30 years' experience as a senior materials scientist, working predominantly in infrastructure and built environment projects in the building, transport, and mining industries across Australia and Asia.

Alan has balanced a career in industry with a career in academia. He has actively lectured in materials science in various roles in built environment degrees since 1996, and is currently a lecturer at Western Sydney University, in Construction Management.

Prior to this, Alan was Senior Materials Science Engineer at Aurecon, a high-end engineering consultancy within the Australian construction, mining and transport industries. As a highly experienced materials and durability technologist, Alan has extensive experience in construction and infrastructure industries in materials, degradation, corrosion and material failure diagnostics. Alan has extensive experience in giving expert opinion on the durability and performance of construction materials in built structures.

Alan holds a Bachelor of Applied Science (Hon.) in Materials Science and a Master of Science, from the University of Technology, Sydney. He is a Member of the Australian Institute of Building (MAIB), member of Royal Australian Chemical Institute (MRACI CCHEM), and a Certified Materials Professional (CMatP) with Materials Australia.

Tell us about your current role.

I lecture in Construction Management at the School of Computing, Engineering and Mathematics at Western Sydney University. In this role, I am responsible for the delivery and unit coordination of subjects in the second and fourth years of the Construction Management Degree program, integrating face-to-face and online learning for content delivery and assessment. Subjects include:

||||| Materials Science in Construction: properties and durability of construction materials.

||||| Major Project in Construction: a research based methodology subject that facilitates individual learning in a construction-based topic.

||||| Construction in Practice Three: a capstone group project for final semester students, aimed at developing a hypothetical construction project in an established commercial or residential area, which complies with both Local and State Government regulations.

What study have you undertaken to prepare yourself for a career in materials science?

My studies have been in materials science, completing both an Honours and a Master's degree from the University of Technology, Sydney. My Master's thesis in the 1990s was on the use of finite element analysis as a tool to investigate the properties of ceramic materials.

In what way is ongoing education and training important to a career in materials science and engineering?

When it comes to ongoing training, the most important factor is that the education should be within the chosen discipline. For me, as a materials scientist in construction, it is essential to not only be aware of the materials used, but also to understand the significance of material performance, durability and specification. This is something that cannot be learnt in a classroom environment. It can only be learnt within the construction profession, participating in projects, consulting and tenders. It is this industry experience that is incorporated within the lecture material that I present.

Working as a consultant has given me exposure to a diverse range of materials in service. In doing so, I am able to keep up my reading on new materials technology as well as what is happening in materials durability and remediation. Associations with consultants from BCRC have broadened my opportunities to gain knowledge by direct involvement in solving construction durability matters.

After a 20-year break from study, I recently commenced research to complete a PhD at Western Sydney University in the discipline of solar energy.

What projects have you most enjoyed working on? Why?

My career as a materials scientist has seen me move from the coatings industry to dental and biomedical composites and into construction materials. A great advantage of a sound undergraduate degree is the ability to diversify into many industries.

The experience within industry, in senior materials science and engineering roles, has challenged me to go back to the fundamental sciences of materials and incorporate that into large infrastructure projects.

For me, the challenge of being part of a team looking at coating failures, corrosion and concrete degradation at the Olympic Dam site, reviewing concrete durability in major coal port facilities, and preparing durability tender reports for North West Rail Link have been the highlights of my career.

There is also a fondness in my heart for a coatings project that I completed several years ago in Shenzhen, China. There, I was able to review the performance of coating materials in an environment quite different to Australia. Looking at coating failures on the 40th floor of a building during a typhoon is an experience that is hard to forget.

Back in the 1990s, I was part of an industry based research team to develop tough, light cured dental composite materials that lead to a two-year research assistant position at the Centre for Advanced Materials Technology at Sydney University. This gave my first experience in an academic environment and fostered interest in teaching. A professor in engineering asked me to give his lectures while he was attending a conference. All of a sudden, I found myself in the midst of academic life. It was a very humbling experience, realising that what I was teaching would contribute to the materials education of so many bright minds.

What aspect of your career do you most enjoy? Why?

It is easy for me to be passionate when I am working on the construction of large infrastructure projects. On these large scale projects, all components are made of materials, and it is fantastic to see the diversity and application of materials in the built environment. The diversity of employment and consulting in my industry career, leading to an academic career, has opened up many opportunities for me.

I have been able to pass on not only my experience in the performance of materials in the built environment, but also the processes associated with research and project management.

Over the last year, I have been fortunate to be part of a team in Western Sydney University Construction Management Program, which is looking into the education process that prepares students for a career in the built environment.

What are some of the common challenges that you face?

The biggest challenge for me is ensuring that my knowledge of the built environment and construction materials are current, and appreciating the significance of the built environment. It is important to be passionate and experienced within any chosen profession. A major challenge is accountability. In industry, a decision on the durability of a material, such as concrete, can have a profound impact on the long-term performance of a built asset, such as a tunnel, and also on the cost of a project. Similarly, as an educator, it is essential to impart knowledge to students that helps them develop their interest and stimulates thought on the 'what ifs' of construction.

What is the most innovative advancement that you have seen in materials science engineering?

My observations of innovative advancement have been focused on the increasing awareness and significance of durability and sustainability, and the impact of the use of resources and energy. This is not so much innovative in terms of materials, but innovative in terms of how people think. The development of clean energy, such as solar power, is an area into which material scientists can contribute. This is why I have chosen to pursue this area for my PhD.

How can Western Sydney University assist young graduates?

Western Sydney University can help young graduates by ensuring that the curriculum is focussed on the needs of the broader construction industry. A stand-alone degree in materials science is not offered at Western Sydney University, but materials science is a core subject within the Construction Management degree.

This subject focuses on construction materials, so the content is less about the fundamental properties of materials, and more about the performance, specification and durability of materials such as concrete, steel and coatings. The challenge is to impart sufficient knowledge to students about how these materials behave in the built environment. Construction Management is a degree that was developed to facilitate project management in construction. It combines management, law, business, engineering technology, building science and material science. I believe that education is a discipline that needs to be grounded in the passing on of knowledge, and that also creates a mindset for innovating and problem solving.

What piece of career advice would you give to today's materials graduates?

I would suggest that they keep an open mind on where they take their career. If I had been told, 25 years ago, that I would be on a construction site, solving problems associated with the curing temperature of concrete, or finding the cause of corrosion in high-tension cables, I would have been puzzled. The transition from a lab coat to a safety helmet and high visibility vest is not a great leap, but it does require a sound, solid undergraduate education. The opportunity I had a number of years ago to join Aurecon was very instrumental in my personal development and given me a broader range of skills as an academic.

What does the future hold for your industry?

There are fewer opportunities in manufacturing industries than when I was a student in the 1980s and 1990s. This is an economic reality within Australia. From my observations, research into clean energy and sustainable materials is most likely the future of the industry. Research into the science and engineering of materials will remain strong, so long as there is progress. Personally, I believe that the construction industry offers incredible career potential for materials scientists and materials engineers.

Construct Magazine

Just a short note to remind you of the discounts you can receive by supporting the Australian Institute of Building **Construct** magazine.

As you are aware the **Construct** magazine goes to all members of the AIB, the last edition was distributed electronically and has received almost 10,000 reads so far from the AIB website, increasing exposure to more businesses other than members.

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2015 Professional Excellence Awards

The Presidents and Committees of the NSW, Victorian, Queensland and South Australian Chapters of the Australian Institute of Building (AIB) were delighted to host their Chapters' annual dinners to celebrate the achievements of the AIB and its members in Sydney, Melbourne, Brisbane and Adelaide. During the evenings, the winners of the 2015 AIB's Professional Excellence in Building Awards were presented. The AIB's Professional Excellence in Building Awards are the only Australian awards that recognise the contribution of individual building professional excellence in the building and construction process.

New South Wales



Victoria



Are your showers ticking time bombs?

Despite builders best efforts, leaking showers are consistently listed in the BSA's top ten defects.

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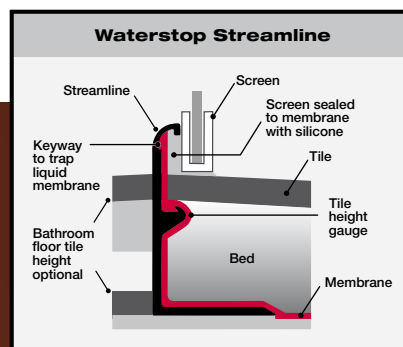
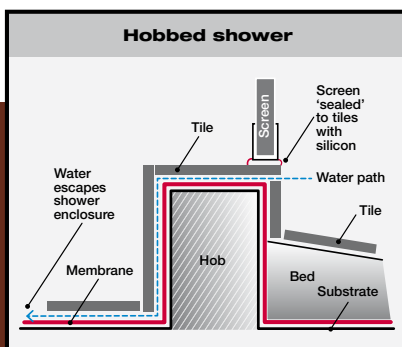
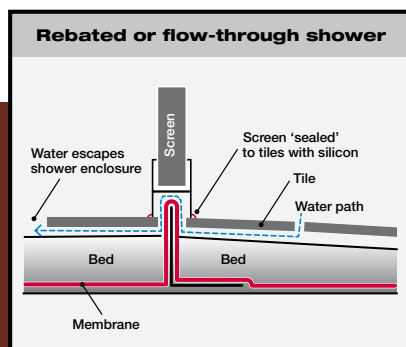


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ACT - Martin Cairns

Company: Built

Project: Australian War Memorial - First World War Galleries Redevelopment

Category: Commercial Construction \$10 Million to \$50 Million

Martin has over 37 years' experience in the construction industry and has held the position of Site Manager for the last 19 years. Martin's attention to detail is derived from his trade background. He has since developed a reputation in delivering challenging projects with efficiency and low impact to stakeholders.

This \$14 million project involved sensitive heritage refurbishment work to the Australian War Memorial's First World War Galleries to house the memorial's new permanent exhibition, Australia in the Great War. Works were carried out in the Gallipoli Gallery, Sinai Palestine Gallery and Western Front Gallery in preparation for the Centenary of the Gallipoli Landings. The scope included heritage base-building refurbishment works as well as the high-quality gallery fit out. The combined complexities of creating state-of-the-art gallery space, operating in a live environment while the War Memorial remained open to the public seven days a week, and ensuring the protection of some of the nation's most significant cultural heirlooms, made this project particularly rewarding and worthy of consideration for an award.



New South Wales – Garry McLeod

Company: Hutchinson Builders

Project: Metro Residence Chatswood

Category: Residential Construction \$100 Million Plus

Garry came to Hutchinson Builders with over 25 years of operational and construction experience. Garry's extensive work history has provided him with varied experience both on site delivering projects as well as working across business operations including the tender process, industrial relations, PCG and employee management and reviews. This cross section of skills puts Garry in a strong position to mentor and manage teams and high profile complex projects. Garry's key strength is his ability to lead, manage and motivate his team and deliver the best results for all involved in every stage of the project lifecycle.

The Metro Residences Chatswood Project involved the construction of three high quality high-rise residential towers. View, Spire and Grand rise through 29, 40 and 42 storeys respectively and is constructed above an existing five level podium consisting of basement car parking, retail areas and the Chatswood Transport Interchange. Clad in soaring curtain walls of glass, their elegant structures and crowning metal features are an exciting and significant addition to the Sydney skyline. Now complete, the top of Grand is the highest point by AHD of any residential building in Sydney.



Queensland - Tim Treby

Company: Lend Lease
Project: Lady Cilento Children's Hospital
Category: Commercial Construction \$100 Million Plus

Tim is one of Lend Lease's senior project staff. As a long term employee, he has progressed through positions utilising his extensive experience in project and design management of a wide variety of projects. Tim has been primarily involved in institutional works including hospitals, laboratories and education facilities, most of which have had a design management responsibility and have been characterised as heavily serviced and complex projects. All projects have been successfully completed and several have been recognised through regional and national industry excellence awards.

Lady Cilento Children's Hospital brings together all highly specialised paediatric and children's health services currently offered by the Royal Children's Hospital, Brisbane and the Mater Children's Hospital in one location, comprising more than 74 specialist clinical departments. The facility has been designed from the outset to be welcoming, safe and environmentally sustainable, combining innovations in architecture, engineering and construction in a manner which will ensure the best possible health outcomes for patients.



Victoria – Damien Penfold

Company: Hansen Yuncken Pty Ltd
Project: Deakin University Frontage Building
Category: Commercial Construction \$100 Million Plus

Damien is a highly experienced construction Project Manager who has completed a broad range of projects in the government, institutional and private enterprise sectors including university buildings, hospitals, prisons, and commercial projects. He has well developed leadership qualities and understands how to motivate a project team. He is also an excellent communicator and problem solver and develops constructive and mutually beneficial relationships with his client and consultant teams to ensure best for project outcomes on all projects he is involved with. He takes great pride in his work.

Deakin University's Frontage Building is a world class educational facility. This significant addition to the Burwood campus now provides a range of research, meeting, retail, executive and administrative spaces, spread over some 18,000m² of floor area. Its striking intersecting towers sitting over an expansive landscaped podium is the main gateway for staff, students and the public alike. Beneath the building are generous undercroft and basement spaces, generally following the line of original ground contours, housing 370 car spaces, lifts, water harvesting tanks and major service plant. Emphasis has been placed on providing an excellent and flexible indoor environment. ESD principles feature throughout with its high performance façade, elevated levels of controlled daylight penetration, under floor air distribution, in slab active mass cooling, overall low energy use, solar hot water, stormwater retention and plenty of cyclist facilities.



Western Australia – Jon Stone

Company: Brookfield Multiplex Constructions Pty Ltd
Project: Fiona Stanley Hospital
Category: Commercial Construction \$100 Million Plus

Jon Stone has a strong track record in the management of major public and private-sector projects and the ability to form long-term alliances with clients, consultants and key subcontractors. Jon's focus on quality, safety, budget control, training and effective management of industrial relations resulted in his appointment as Project Director of the Fiona Stanley Hospital Project, the largest design and construction project that Brookfield Multiplex has ever undertaken. In recognition of his success in this role, Jon was recently promoted to Regional Director for Brookfield Multiplex Construction and Development in WA.

The \$2 billion Fiona Stanley Hospital (FSH) in Perth is the centrepiece of the Western Australian government's newly revamped state's health system. It is the largest building infrastructure project ever undertaken by the State and provides 783 beds and twenty-four-hour acute care, together with teaching, research, medical and surgical services. Brookfield Multiplex was responsible for full project management, design, construction, testing, commissioning and transition support under a Managing Contractor delivery model. As Project Director for Brookfield Multiplex, Jon had ultimate responsibility for delivery of all aspects of the project. Working closely with the client and a team of more than 120 staff on site, Jon's focus on communication and collaboration ensured the smooth operation of the project as the teams worked together to achieve this landmark project.

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The University of Melbourne, in conjunction with The University of Sydney, Curtin University of Technology and Monash University, has been awarded \$4 million to establish The Australian Research Council (ARC) Training Centre for Advanced Manufacturing of Prefabricated Housing that will advance and transform the building industry in Australia.

Training Centres will be established at each university, led in Melbourne by Professor Priyan Mendis and Dr Tuan Ngo from the Department of Infrastructure Engineering. The funding is funded for four years and includes support for six post-doctoral fellow positions and 14 PhDs across the centres.

Professor Mendis said the Centre aims to unlock the potential growth of Australia's prefabricated building industry by creating a co-operative training system between industry and universities.

"The Centre will enable the next generation of engineers and architects to apply advanced manufacturing ideas to prefabricated modular buildings," he said.

"This emerging highly trained workforce driven by the needs of the customer will identify innovations in the use of advanced materials, design for manufacturing and assembly."

Professor Mark Hargreaves, Pro Vice-Chancellor (Research Partnerships and External Relations) said the University of Melbourne is proud to lead the delivery of innovation and excellence through the ARC.

"The Centre will secure the Australian industry's competitive advantage leading to local employment growth and increased exports of prefabricated products and services," he said.

"Through this program, we will train emerging industry professionals, enable industry, with world-leading research capability, to develop and apply new materials, processes and technologies that will create products, processes and business models," Professor Hargreaves said.

Ideas from this project will enable the prefabricated building industry to produce innovative and customer specific building products required in future markets.

The ARC Training Centre for Advanced Manufacturing of Prefabricated Housing is a highly collaborative venture involving four universities (The University of Melbourne, The University of Sydney, Curtin University of Technology and Monash University) and nine partner organisations, mostly companies.

The Australian construction industry has faced severe challenges over the past two decades. Spiralling costs of building materials and construction have made housing less affordable. Sustainability, health and well-being, and safety imperatives together with the market-wide expectation for high-quality design have further challenged traditional construction. Advanced manufacturing of prefabricated housing is a viable alternative. Leading figures in the Australian industry have recognised the productivity and efficiency gains that advanced manufacturing techniques can offer. In particular, enabling technologies such as composite lightweight materials and systems, automated off-site manufacturing, mass customisation and complex systems thinking are essential components of prefabricated housing. Nevertheless, a sophisticated skills-based workforce is critical to implement these technologies and realise the full potential of prefabricated housing.

The ARC hub aims to unlock the potential growth of Australia's prefabricated building industry by creating a sustainable training eco-system between industry and Australian universities. The Centre will, in partnership with industry, prepare the next generation of industry professionals and researchers, and develop the materials, systems and design thinking that will transform the construction industry towards an advanced manufacturing future. This innovation will secure the Australian prefabricated housing industry's competitive advantage in the global value chain leading to local employment growth and increased exports of prefabricated building components, systems and design expertise.

Powerful global trends have seen a renaissance

in housing prefabrication and modularisation in Europe, the US and Japan. By comparison the Australian industry is in its formative stages but has great potential for growth in revenue, employment and exports. Innovative design, lightweight and high performance materials, and new manufacturing techniques have the potential to enable high-quality prefabricated housing tailored to customers' needs that is ecologically sustainable, reusable, smart and affordable. New thinking is required to chart the successful work flow from design through to supply, manufacturing and delivery – workflows more akin to automotive, ship and aeronautical manufacturing than traditional design and building methodologies.

This training centre will bring together the leading companies and organisations in prefabricated housing and four leading collaborating organisations (COs) by creating a training environment to develop the essential skills for the growth of partner organisations (POs) and the broader Australian industry. It will provide a training pipeline of 14 PhD graduates, 6 Postdoctoral Fellows (PFs), and more than 100 coursework Master students (funded by COs). This Centre directly addresses the Industrial Transformation Training Centre Strategic Research Priorities of Manufacturing and Lifting productivity and economic growth. The resulting industry innovation will advance high value employment; assist with accelerating the construction of prefabricated housing in Australia; and stimulate the consumption and export of prefabricated and modularised finished products, componentry and services.

This Centre will deliver a broad range of benefits to the POs and the nation including:

- |||| Training skilled professionals to embed innovation and secure Australia's competitive advantage;
- |||| Supporting a 10% growth of market share by 2025 which will create 20,000 new jobs by 2025-6;
- |||| Expanding export opportunities for componentry and expertise;
- |||| Up-skilling existing industry workforce; and
- |||| Addressing shortage of affordable and end-user focused residential housing.

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Determinants of Prefabricated Housing Activity

By Dr Dale Steinhardt and Associate Professor Dr Karen Manley, QUT

Prefabrication is a radical innovation that requires restructuring of traditional methods of house construction. As recognised in the literature, such innovation increasingly takes place in open systems (Chesbrough & Appleyard, 2007). In the context of adopting prefabricated housing methods, there is thus a need to consider building firms, suppliers, wider industry policy-makers and end-users not as individual actors working in isolation (or in 'silos'), but rather as an interactive network that creates barriers and drivers to prefabrication uptake (Da Silveira, Borenstein, & Fogliatto, 2001; Gassmann, 2006; Zainul Abidin, 2010). A model that animates this conceptualisation of innovation in the construction context is shown in Figure 1 below.

The determinants of prefabricated housing activity arise from this innovation system. This is the conclusion of a recent synthesis of the international literature on prefabricated housing (Steinhardt, Manley, & Miller, 2014). That study found that the interaction of the participants and activities shown in Figure 1 gives rise to seven distinct determinants of adoption, as discussed below.

1. Gaining industry acceptance

At the centre of this model are the hands-on practitioners responsible for the construction

of a new house – the builders, architects, engineers and a variety of trade subcontractors. They serve a critical role as:

“ultimately, the potential for any building material, product or process to be implemented successfully depends on its ability to gain acceptance from the average builder” (Friedman & Cammalleri, 1993, p209-210).

Gaining their acceptance can be achieved through driving down costs, improving construction process efficiency, improving the quality of the final delivered house product, and aligning with industry pressures. Prefabrication however disrupts many traditional construction norms and inevitably will be compared on its abilities to meet long-held expectations about the look, feel, price and processes of housing.

2. Simplification and Speed of Construction

Construction tasks are simplified through the installation of prefabricated panels or modules which significantly reduces the requirement for external contractors and 'wet trades' like plastering and tiling (Pan & Sidwell, 2011; Poon, Ann, & Ng, 2003). This has potential flow on effects in reducing the burden of staff management (Roy, Brown, & Gaze, 2003) and substantially increasing the

overall speed of construction (Lu & Korman, 2010). Prefabricated construction in a factory setting can also reduce the likelihood of construction delays due to inclement weather, one of the reasons underpinning the high adoption of prefabrication in nations such as Sweden (Bildsten, 2011). This reduced onsite time can offset higher costs incurred in terms of new material development or pre-construction planning processes incorporating large prefabricated elements (Aburas, 2011; Bildsten, 2011).

Prefabrication does however introduce a number of further complications, particularly in the use of highly prefabricated, volumetric works. Although it could be argued that prefabricated materials and transportable houses address issues of repeated travel to sites for contractors, the logistics of transporting heavy or large building modules does not compare favourably with the traditional transport of small subcomponent housing elements (Daly, 2009). Researchers in India have noted the problems associated with installing large housing modules in cramped urban environments (Arif, Bendi, Sawhney, & Iyer, 2012). Prefabricated housing can therefore reduce onsite building complexity, but may shift this complexity offsite in terms of planning and transportation overhead.

3. Flexibility

There is a close relationship between the standardisation of materials and processes for faster and cheaper prefabrication, and reduced design flexibility. This reduced design flexibility can cause problems for onsite builders installing prefabricated components manufactured in restricted sizes (Hofman, Voordijk, & Halman, 2009), architects who like to stamp their own style on projects and now have limited means of achieving this (Arif, Goulding, & Rahimian, 2012), and consumers who have fewer choices. Finding an appropriate compromise between total standardisation and total customisation is a difficult balancing act for prefabricators, but

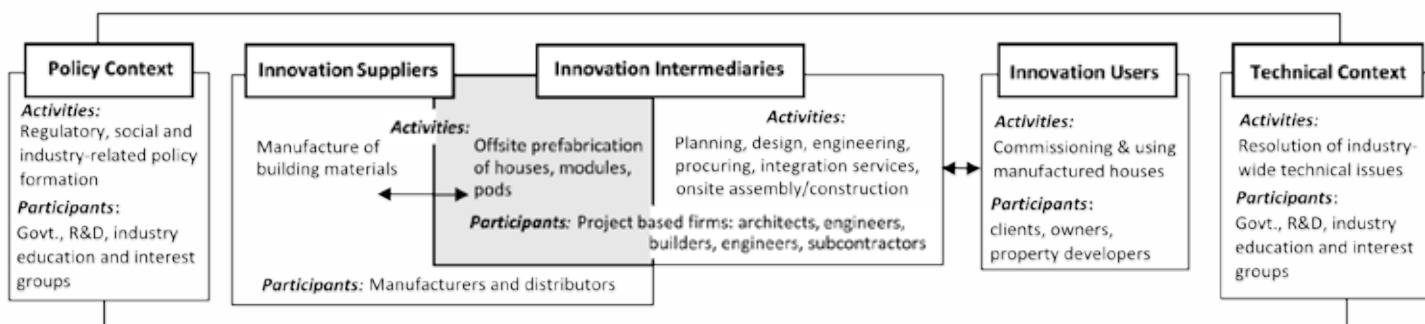


Figure 1. Prefabricated Housing Innovation System, adapted from Gann and Salter (2000)

necessary for marketing success (Barlow et al., 2003; Bertelsen, 2005; Gann, 1996). The end-goal of this balance is ‘mass customisation’ – the manufacturing of high-quality components which are adaptable to the design choices of designers and consumers alike, with large integrated Japanese homebuilders pushing at the forefront of this development (Barlow & Ozaki, 2005). Despite significant progress in offering both structural (floorplans) and aesthetic (fittings, appliances) customisability, the flexibility of Japanese prefabricators still falls short of onsite, custom-built housing (Aitchison, 2014; Patchell, 2002).

Yet Roy et al. (2003) have highlighted that customisation options in the dominant onsite UK housing market are also often limited to rearranging of internal fixtures within a predetermined, standardised structure. Australian architects have also drawn attention to dominant project housing being ‘reproduction designs of past styles... placed together in ways that create dull, uninspiring environments’ (Johnson, 2004). The major benefit of onsite housing is that it continues to define mainstream perceptions of how housing is meant to look. Prefabrication competes against this ingrained sentiment, which extends across both consumers purchasing new homes, and the builders constructing these homes for the market.

4. Construction industry perceptions

Industry conservatism is a major factor to overcome, with the Australian Industry Group recently going so far as to state that there are few benefits to be gained from new construction technologies such as prefabrication (Australian Industry Group, 2013). Emotive statements regarding the potential loss of uniqueness in building, and the “abolition of handiwork” have also been elicited from traditional tradespersons when confronted with calls for greater use of prefabrication (Outram, 2005, p11).

Indeed, there is a real threat to traditional house building work patterns if automation can be applied to the production process, as this could reduce the need for unskilled or unqualified onsite labour (Dainty & Brooke, 2004; Gann & Senker, 1993). Even without automation, prefabrication relies on increased standardisation to reap economies of scale. A shift to manufacturing has been noted by US-based housing manufacturers as generating a work environment that lacks employee input into customisation and individuality (Nahmens & Ikuma, 2011). The relative transferability of traditional construction skills to prefabricated products or materials highlights that the technical challenges remain a lesser



barrier than cultural resistance to change in the workforce (Dalton, Chhetri, Corcoran, Groenhart, & Horne, 2011; Daly, 2009; Elnaas, Ashton, & Gidado, 2009; Nadim & Goulding, 2011; Sardén & Stehn, 2006)

5. Community perceptions

Despite the positive outcomes associated with a shift to prefabrication, strong negative community perceptions of prefabricated housing have been driven by its historical and continuing association with temporary, emergency or low-quality housing. Across Europe, bland concrete panellised apartments draw associations with periods of government-provided housing; Australian and New Zealand residents recall demountable classrooms and mining accommodation with little fondness; poor quality post-war housing has tainted prefabrication's image in the UK, and the US industry still struggles to shake its relationship with mobile trailer homes and their associated low social status (Beamish, Goss, Atilas, & Kim, 2001; Craig, Laing, & Edge, 2000; Daly, 2009; Genz, 2001; Goulding, Rahimian, Arif, & Sharp, 2012; Hall & Vidén, 2005; Kährik & Tammaru, 2010; Kempton & Syms, 2009). While the modern prefabricated housing industry has moved on, refining processes from humble beginnings, it still has not attracted a large mainstream market in all but a few countries.

6. Costs and quality

The most obvious issue for any construction firm is their financial viability. The promise of prefabrication is that increased industrialisation and factory-based processes can increase

production efficiencies and drive down building costs. This should in turn drive down consumer costs and increase demand. The main challenges to reducing costs can be broken into the initial investment cost to establish prefabrication infrastructure (e.g. factories, supply chains), and related on-going revenue issues. The barrier of high investment capital to establish mechanised factories has been identified as a clear problem preventing smaller operators from competing in the prefabricated construction space in locations as diverse as the United Kingdom (Lovell & Smith, 2010) and Hong Kong (Poon, Ann, & Ng, 2003). This initial investment presents a significant risk, as unlike traditional construction, maximum benefit is derived from prefabrication when there is continuous production and supply-side economies of scale (Lovell & Smith, 2010).

Properly evaluating the costs of prefabricated housing is complicated, as research results have pointed to both the higher upfront cost of prefabricated materials, and overall reductions once broader costs are factored in. For example, U.S. and Australian research has identified upfront material cost increases of 5-20% for the use of Structural Insulated Panels (SIPs) (Gagnon & Adams, 1999; Gurung & Mahendran, 2002). Such basic analyses however overlook the potential to cut costs by up to 50% by reducing labour and material waste, and delivering a product earlier (Miller, 2010). Similarly, moving housing to a controlled manufacturing environment allows for monitoring of quality, defects, and incremental improvement of the product itself (e.g. increased insulation, improved

finishes) (Gaze, Ross, Nolan, Novakovic, & Cartwright, 2007; Tam, Tam, & Zeng, 2002). Each of these improvements can also lead to cost reductions for end-users in reducing maintenance and repairs, and reductions in post-occupancy operating costs. A valid assessment procedure would include both direct and indirect construction costs, and post-occupancy costs.

7. Industry capacity

The wider systems and regulations that support prefabricated construction also need to be considered. For example, existing funding models for house building have implications for prefabrication adoption. The house construction industry has traditionally not been capital intensive, relying primarily on investment from the end user commissioning the building to finance work. A movement to prefabrication could reverse this requirement. If house-building moves to a factory-based supply model rather than an individual demand model (Nadim & Goulding, 2011), the end users could no longer be relied upon to provide the necessary operating capital. This has particular implications for contexts where the housing market is small or geographically isolated because of the lack of a significant pool of potential investors.

Thus the actions and policies of financial institutions, lenders and insurers are critical. As a result of no established history of quality, or known estimate of product lifespan, reassurances to lenders that prefabricated houses will last and be attractive to potential buyers are still often needed (Craig, Laing, & Edge, 2000). The unfamiliarity of planners, regulators, insurers and certifiers with prefabrication all similarly support the

current status quo and reinforce end user uncertainty (Lovell & Smith, 2010). Building codes and government contracts are also often devised without explicit consideration of offsite manufacture as a possible alternative. A specific example is Australia's 'Little Hero' apartment building in Melbourne, which relied on overseas financing from the Arab Bank rather than Australia's major banks due to a declared 'obsession with bricks and mortar' (Boyd, Khalfan, & Maqsood, 2012). Though a supportive ecosystem for new prefabrication methods will assist in establishing and growing a prefabricated housing industry, it needs to overcome significant bureaucratic inertia.

Conclusions

A shift away from traditional building processes to prefabrication has been associated with a number of potential advantages and disadvantages. The simplification and increased speed of onsite construction resulting from the use of prefabricated elements is well-recognised, but this must be weighed against the potential for greater complexity in transport and planning. Similarly, while manufacturing offers productivity improvements over manual labour, this must be weighed against its ability to produce customisable housing that meets the market's needs. Concerns about building costs and house prices can be addressed well by prefabrication, but fairer assessment against traditional building practices is needed. Other influences that dampen demand include a history of negative consumer perceptions and a regulatory environment that is not tailored to support prefabrication. The above factors need to be collectively addressed if prefabrication is to realise its full potential.

Dr Karen Manley BCom BEc(Hons) PhD(Mgt)

Associate Professor, Construction Management, Queensland University of Technology

Dr Karen Manley is a global thought leader in the area of innovation on infrastructure projects. She is currently Associate Professor, School of Civil Engineering and Built Environment, Queensland University of Technology (QUT). She has many years experience as an academic and private consultant, specialising in the application of post-neoclassical approaches to the analysis of innovation and industry growth. She investigates knowledge-flows, networking and innovation systems, to shed light on the performance of a number of industries, including the construction industry. She has published extensively in international journals, and her work has informed the development of government policy across Australia in the area of innovation capacity.

Dr Dale Steinhardt BPsych, PostGradDipPsych, PhD (QUT)

Research Fellow, Construction Management, Queensland University of Technology

Dr Dale Steinhardt is currently a Research Fellow in the School of Civil Engineering and Built Environment, Queensland University of Technology (QUT). He has a formal background in psychology, and diverse research experience in social, policy and data issues. He is currently Project Manager for a QUT-based project reviewing the factors affecting the adoption of prefabricated housing in Australia.

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Building in value using BIM - an insight for students and industry

By Professor Peter Davis and Dr. Sittimont Kanjanabootra, University of Newcastle, NSW. This is a follow-up to a seminar provided by AIB members/Hansen Yuncken's team highlighting their approach to implementing BIM360 and their unique HYway enterprise, integrated management system.

Technology and IT changes our ways of working and continues to do so in an exponential way. BIM (Building Information Modeling) is a database that provides digital information about the design, fabrication, construction, project management, logistics, materials and energy consumption of a building. It represents significant change (Allen Consulting 2010). Implementation of BIM technology and proactive management (described by Love, Matthews et al 2014) enables asset owners to add value to their investments and obtain positive results. These writers propose a novel framework for realising the value of BIM through a learning process that is informed through regular questioning and benefits measurement. For the builder, the focus of this short article, it is said to provide improved information sharing and collaboration (Grilo and Jardim-Goncalves 2011); time and cost savings; improved quality; greater transparency and accountability; supports decision-making; increases sustainability and encourages labour market improvements (Allen Consulting 2010). Allen also suggests that it is an enabling, transformative technology with the potential to improve economic well-being and competitiveness, streamlining processes throughout the whole life-cycle of a building. Enabling technologies in the past have raised organisational barriers and BIM is no different. Change and innovation must be shown to add value in some shape or form.

In the following example, undergraduate students in a construction management degree course were presented with an industry perspective of the ways and means that an early adopter of the technology has benefited from its use. The University of Newcastle has recently incorporated BIM courses into its curriculum. The course examines the practical applications

of BIM technologies and processes for the development and delivery of construction projects. Importantly the course examines issues and problems that could be inhibiting the widespread application of the technologies in the industry.

Hansen Yuncken (HY) has deployed IT solutions in one shape or form since the 1970s and more recently BIM technology on projects since the early 2000s. For example the \$1.8 billion New Royal Adelaide Hospital PPP, commenced in 2011, has effectively incorporated all aspects

of the technology throughout the design and construct process. As a local supporter of the Bachelor of Construction Management (Building) (Honours) degree, HY assists University of Newcastle in the delivery of this particular course.

HY's expertise in the Hunter Region of New South Wales includes the construction, extension or refurbishment of institutional buildings such as hospitals and educational facilities. The company has built a wide range of buildings for the University of Newcastle in

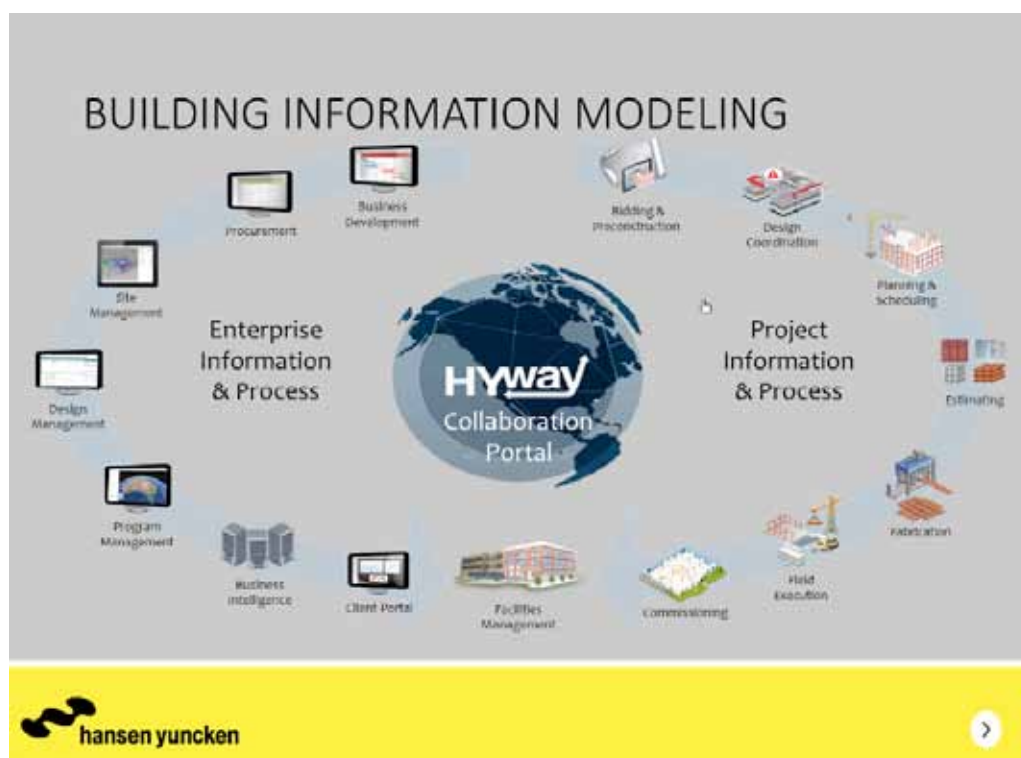


Table 1

PHASE OF PROJECT	BENEFIT
Preconstruction	Programme interrogation and analysis, clear communication of methodology.
Design coordination	Reduction of re-work, constructability analysis, improved quality and safer buildings.
Estimating procurement	Improved certainty of costs, efficient measurement, cost optimisation.
Planning and scheduling	Improved resource planning, better coordination of trades, less downtime and actual progress reporting
Fabrication	Enabler for off-site manufacturing provides improved quality and safer sites together with time efficiencies.
Field execution	Enhanced project teams/site collaboration, transparency in HSE processes and issue resolution in a timely manner
Commissioning and handover	Transparent commissioning process, site data collection and validation and streamlined transition to life-cycle management
Facilities Management - design and construction	FM labour utilisation savings, risk management, fuel and material savings, comfort management, as built data accuracy, regulation compliance, space optimisation, inventory management and configuration management.
Facilities management – operations	Energy management, continuous commissioning, disaster recovery, work order management, visual works orders and inventory reconciliation, facilities condition assessment and asset inspections

recent years and is currently completing design documentation and commencing construction of NeW Space, a \$90 million, nine-storey Business and Law 'City Campus' building in the Newcastle CBD.

A panel consisting of a Systems Manager, Project Manager, Project Engineer and Contracts Manager from HY provided a detailed presentation to a group of students. The presentation commenced with an overview of HY's collaboration portal, HYway as seen below and its integration with BIM.

This was followed by several slides that described HYway in use for preconstruction, design coordination, estimating and procurement, planning and scheduling, fabrication, field execution, commissioning, handover and facilities management. Table (1) below identifies the phases of the project and benefits that can accrue:

This was followed by a series of slides that set out advantages in business development, procurement, site management and program management (table 2) that provide enhanced

collaboration, shared knowledge, and a transparent structured process within projects. These notions accord with contemporary academic approaches that we set out at the commencement of this article.

In conclusion, it goes without saying that the future holds many changes for students graduating from construction management courses in Australia. BIM is but one change with which to come to terms for those learning in the industry. Its value to the industry is quite clear. The students that attended the session recognised BIM's benefit and its potential. In addition, they were supportive of the learning style, particularly the industry engagement that underpins this example.

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Hansen Yuncken - "our Hyway in 2015"

Notice of Annual General Meeting

Notice is hereby given that the sixty fourth Annual General Meeting of members of the Australian Institute of Building will be held at 3.45pm on Saturday 26 September 2015 at the Sofitel Sydney Wentworth 61-101 Phillip Street Sydney NSW.

Business:

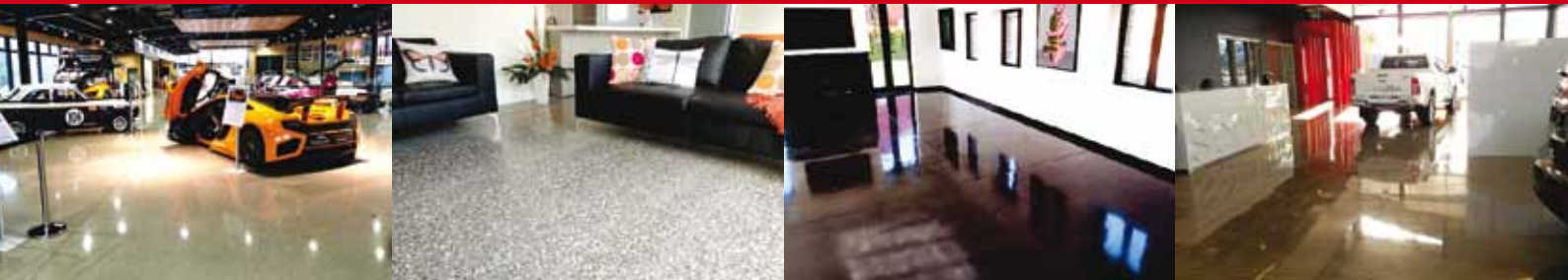
- To receive the minutes of the sixtieth third Annual General Meeting held in Canberra, ACT on Saturday 20th September 2014.
- To receive and consider the financial statements for the Australian Institute of Building for the financial year ended 31 March 2015.
- To receive and consider the annual report of the Australian Institute of Building for the year ended 31 March 2015.
- To declare the election results for Australian Institute of Building Councillors for the year 2015-2016.
- To install President Elect as the President of the Australian Institute of Building for the year 2015-2016.
- To appoint auditors for the financial year ending 31 March 2016.
- To transact any other business which may properly be transacted by an Annual General Meeting.

An AIB member who is eligible (individual at the grade of either Member or Fellow) to vote at the Annual General Meeting may appoint a proxy in accord with by-law 6.7.3 of the AIB Handbook. The Agenda and proxy forms will be available in the Institute's website (www.aib.org.au) on 4th of September 2015.

Mr Robert J Hunt CPA
Chief Executive Officer
21 August 2015

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Mingary Castle stands by the sea a mile or so to the east of the village of Kilchoan, in the west highlands of Scotland. It is a castle with a long and rich history, the seat of the Clan Maclain, a sept of Clan MacDonald and once one of the most powerful clans along the western coast of Scotland.

The thirteenth century castle had been unoccupied for 150 years but since April last year Mingary has been restored at a cost of £2.3 million and turned into a luxury hotel. The castle had been crumbling, and the ruin was without a roof. However, now the castle has almost been returned to its former glory, and with all the twenty-first century comforts. Secret passages and a small room that were sealed up around 500 years ago have also been discovered during the restoration work at the castle.

Remote, little known, it would have been so easy to allow Mingary to collapse into a picturesque ruin. That work to rescue it is thanks to the efforts of the man who owns the Ardnamurchan Estate and Mingary itself, Donald Houston, who has set up the Mingary Castle Preservation & Restoration Trust. The Trust has now almost finished the process of restoring the castle to its former grandeur. Donations can be to

the trust via their website.

The name Mingary, or Mingarry, may be the anglicised version of Mioghairidh, but the exact meaning of the word is cause for dispute. A possible translation is that it is derived from two Norse words, mikil, meaning great, and gardhr, a garth or house, so 'great house' – though the name has been translated by some to mean 'great land between machair and moor'.

To start to appreciate the importance of Mingary Castle, we have to understand the role of castles in mediaeval and pre-mediaeval times. Their job was to dominate an area militarily, and the most important castles therefore dominated major route ways.

When Mingary was in its heyday, most movement was by sea. Travel on land was dangerous, uncomfortable, unreliable, and slow. Further, the people of the west coast had the Norse amongst their ancestors, and therefore, the sea in their blood. So most goods and people travelled by ship.

In our modern system of routes, Mingary is way off the beaten track, stuck out at the end of the long Ardnamurchan peninsula, far from the modern



nodes of settlement and transport. Some of the castle's importance therefore lies in its very neglect, with the result that much of its original structure is still there and visible. That it became so remote had another benefit: it wasn't changed, so it remains an iconic example of Gaelic architecture uninfluenced by Norman, English or other outside ideas.

Whilst some ascribe the original construction of the castle to the MacDougalls, there is some debate here and it seems equally possible that it was a MacDonald castle from its inception. It is hoped to expose the various strands of evidence and supposition on this in more detail over forthcoming months. However, it is clear that Mingary did become one of a chain of castles in the Lordship of the Isles, part of the great MacDonald fiefdom, and the seat of one of Clan MacDonald's most important and powerful septs, Clan Maclain. The Lordship was almost a kingdom in its own right, for it often operated outside the jurisdiction of the Scottish king.

The castle's curtain walls, up to 14 metres high, form a hexagon. The longest and thickest wall is to the north, facing onto a neck of land which is cut by a defensive ditch 7.5 metres wide and 3 metres deep. There is a sea gate in the south wall, and a rock-cut stairway leads from the beach at the west to a land gate in the north-west wall. The walls enclose a courtyard roughly 20 metres north to south and 18 metres east to west, within which rise three ranges of buildings.

Sources:

<http://www.mingarycastletrust.co.uk/mingarycastletrust/>

The Scotsman, 13 July 2015



ACRS Seminar Series on the Risks of using Non-compliant Steel October 2015



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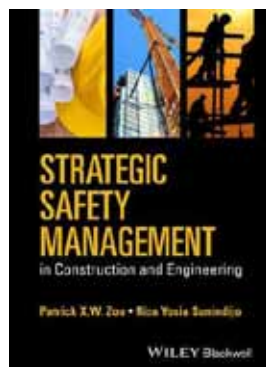
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Newcastle Courthouse AIB Site Visit

By Trevor Nye FAIB

On 13 of May the AIB Hunter local committee organised a tour of the John Holland Group \$95 million Newcastle Courthouse Project. A group of over thirty enthusiastic members and students were shown over the eight storey complex by Matt Morrison the JHG Project Manager. The view from the roof over Newcastle harbour was magnificent although this is unlikely to be seen by most of the Court's customers as the group were also shown the holding cells which still have a Dickensian appearance with massive steel doors and traditional padlocks. The court staff prefer the 'old-fashioned' security rather than entirely trusting in the electronic methods used nowadays. Services were being installed and internal walls framed up for the courtrooms on each level and the timber wall linings were expected shortly. These are manufactured pre-finished modules which will 'clip' onto the walls so the internal fit out will complete at a rapid rate. The ground floor entry has a cast in-situ concrete feature wall finished in black comprising a series of intersecting hemispheres. They reminded one of the old convict ball and chains - perhaps this was in the mind of the designer. The facade is made up of a range of different cladding systems. Features include a sculpted GRC facade across the podium with aluminium faced panels, sandstone, timber and pre-cast concrete finishes. The overall effect provides a high quality, leading architecturally designed building in a part of Hunter Street which has not seen new construction for some thirty years. JHG expect to complete construction in the final quarter of 2015. Combined with the adjacent University's NewSpace building now commencing construction, the Newcastle CBD is finally realising its long-promised revitalisation.



New Book: Strategic Safety Management in Construction and Engineering

Authors: Professor Patrick Zou and Dr Riza Sunindijo
Publisher: Wiley-Blackwell

This research-based book "Strategic Safety Management in Construction and Engineering" discusses the concepts and techniques of a wide range of topics in relation to the 'science' and 'art' of safety management in construction and engineering, including: Economics of safety, Safety culture and climate, Skills for safety, Safety learning and training, Safety in design, Building information modelling (BIM), Safety risk management, Strategic safety management, and Research methodologies and Research-Practice nexus. More details about this book can be found from the publisher's website: <http://eu.wiley.com/WileyCDA/WileyTitle/productCd-1118839374.html>.

"This much-needed book will get the construction industry thinking past the hazard-focused, technical, and legal view which currently bogs it down, and towards holistic strategic approaches. As an academic, I am particularly keen about their emphasis on qualitative research methods, and research-practice nexus." Michael Behm, PhD CSP, Coordinator: cib W099, Working Commission on Safety and Health in Construction.

New 'Recognised Provider' status to deliver faster Green Star certification

The Green Building Council of Australia (GBCA) is validating companies with significant technical expertise in the Green Star rating system as part of its commitment to continuous improvement. Wood & Grieve Engineers is the first company to be validated for its ability to deliver Green Star points consistently, and is now a Green Star 'Recognised Provider' in energy modelling.

"The Green Building Council of Australia is committed to listening to industry, and to finding ways to make Green Star faster, simpler and more consistent. Recognised Providers will provide project teams with increased confidence in the outcomes of their Green Star submissions," says the GBCA's Chief Executive Officer, Romilly Madew.

"We are delighted to validate Wood & Grieve Engineers as a provider of quality energy modelling services for Green Star. Recognised Providers are technical experts in Green Star, and as energy modelling can achieve up to 20 Green Star points, working with a Recognised Provider makes sense," Ms Madew adds. Wood & Grieve's Perth sustainability section manager, Prasanna Suraweera, says this new initiative will drive improvements in the Green Star process.

"The benefits to our clients, but more importantly the building industry as a whole, are far-reaching. Being a Recognised Provider means Wood & Grieve has quality control processes in place to provide our clients with far greater certainty that they'll achieve their Green Star points," Mr Suraweera says.

"The GBCA is truly listening to the industry and encouraging innovation," Mr Suraweera concludes. More information about Green Star Recognised Providers can be found at: <http://www.gbca.org.au/greenstar/certification/green-star-recognised-providers/>

About the Green Building Council of Australia

The Green Building Council of Australia (GBCA) is the nation's authority on sustainable buildings and communities. The GBCA's mission is to accelerate the transformation of Australia's built environment into one that is healthy, liveable, productive, resilient and sustainable. The GBCA works with industry and government to encourage policies and programs that support its mission. The Council educates thousands of people each year on how to design and deliver sustainable outcomes for Australia's buildings and communities. And it operates Australia's only national, voluntary, holistic rating system for sustainable buildings and communities – Green Star. See: www.gbca.org.au

About Wood & Grieve Engineers

Wood & Grieve Engineers (WGE) is a multi-award winning national firm. WGE's business model is shaped around exceptional client service and high performance and the WGE team is dedicated to maintaining a unique employee culture that is fundamental to success. See: www.wge.com.au

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Leading the way for construction industry innovation



The project team for John Holland's AIB award-winning project Riverwalk at New Farm were "incredibly proactive to develop unique solutions to ensure a sustainable environmental presence at the project".

A team of researchers at the University of Newcastle is undertaking a range of research projects that have the potential to enable positive change and innovation in the construction industry. Professor Peter Davis, who joined the University of Newcastle in 2014 as Chair of Construction Management, a position supported by industry partners John Holland and Lendlease, leads this team.

A balance of experiences

Professor Davis has a unique balance of experience in the construction industry and in research and teaching in tertiary institutions. His career began in the UK where he focused on construction management, estimating and administering significant economic and social infrastructure projects.

Professor Davis's transition into academia coincided with his move to Australia in 1988 where soon after he completed a Master's Degree in Project Management. His industry experience led to a research focus around relationship development and maintenance in collaborative construction procurement models. In 2006 he completed a PhD in Economics and Finance at RMIT University, studying the impact of relationship-based procurement and alliance development. His excellence in academia has been recognised through Innovation in Teaching Awards and two AIB Professional Excellence in Building Awards. He is currently an ARC Linkage Grant holder.

Professor Davis's unique commercial and research experience is complimented by professional relationships encompassing a significant network

from diverse sectors world wide including architecture, engineering and construction; oil and gas; law; and social science.

He continues to pursue competitive grant support and collaboration with key industry players in the public and private sector to generate outstanding research innovation. Presently he is involved with interrelated research projects that advance safety, productivity and excellence in construction management. Two of Professor Davis's current research projects are featured below.

Articulating excellence in construction

In a project supported by the AIB, Professor Davis has identified the AIB Excellence in Building Awards (PEA) as an avenue through which construction companies articulate specific innovation and value generation.

Run on an annual basis and over a number of years, these awards have captured valuable information from which the research team is developing taxonomy of capabilities. They have identified factors that encapsulate these capabilities, for example: innovation, value for money and productivity, problem solving, teambuilding and communication. These classifications can be used to differentiate construction companies and affect strategy and marketing at multiple levels and stages of operation, across a range of projects.

The goal of the research project is to de-identify, catalogue and analyse this aggregated information to enable the creation of baseline measures of

capability, allowing benchmarking at individual, organisation and project levels. This will lead to a better understanding of, amongst other things, the culture and norms that underpin construction capabilities, potentially accelerating beneficial change at an industry and create new research perspectives.

Psychological contracts in construction

Professor Peter Davis is leading a second research project focussed on personal deals or psychological contracts that have potential to shape construction employees' behaviour. A psychological contract is defined as an unwritten set of expectations between stakeholders, which are distinct from a formal, documented contract. Professor Davis's study will contextualise the psychological contract from a construction manager's perspective and consider its extent and validity in relation to construction project delivery.

The project team's initial research has revealed that despite the depth of academic attention that has been paid to psychological contracts in various industries there is limited research examining the psychological contract with respect to construction projects. Specific objectives of their project are to identify the presence of psychological contracts in construction project teams and catalogue the affects that the psychological contract has on the teams in various procurement models.

The results so far show that psychological contracts are clearly present in the construction delivery team and have considerable effect on the interaction between the project stakeholders.

Find out more about construction management research and training at the University of Newcastle at: www.newcastle.edu.au/sabe



Lendlease's Westmead Millennium Institute for Medical Research project, which won an AIB Award for Professional Excellence in 2015. The project was designed "...to exploit the critical mass in research to maximise synergies and economies of scale from scientific collaboration and coordinated investment.



THE UNIVERSITY OF
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Construction innovation leader

Research by Professor Peter Davis, Chair of Construction Management at the University of Newcastle, is enabling positive change and innovation in building and construction management.

The University thanks its partners John Holland and Lendlease for sponsoring Professor Davis's position and making a significant contribution to the future of the construction industry.

Find out more about our construction management research and education programs:
www.newcastle.edu.au/sabe



Agile systems needed to ride the wave of disruption

By Rob Stummer, Managing Director, IFS Australia & New Zealand

You would probably have to be living under a rock not to have heard all about Uber and Airbnb and the disruptive effects they are having on the taxi and hotel industries worldwide.

Uber in particular shows how revolutionary harnessing the power of information can be. Unlike the taxis it competes with, Uber tells you everything you need to know: where your Uber is, when it will arrive, what your trip will cost, your driver's details, and the ability to rate your service. So revolutionary, our CEO Alastair Sorbie calls it "the Uber effect".

In case you think your industry isn't in any immediate danger of disruption, consider the huge range of potentially disruptive technologies, many of which are now gaining traction. These include 3D printing, drones, next-generation batteries, hydrogen fuel cells, wearable devices and the Internet of Things.

No industry is immune from the Uber effect. In construction, there are numerous applications for unmanned aerial vehicles (UAVs), for example, including surveying, aerial overviews, worksite monitoring, inspections, even replacing cranes for delivery of lighter materials. 3D printing could also slash delivery times for out-of-stock parts and wearable devices will allow workers to access plans, visualisations, and detailed specifications as they work.

Before you panic, there are three things your organisation can do to benefit from disruption and not fall victim to it:

1. Know your business, be prepared to change
2. Be agile and respond quickly, as changes are hard to predict
3. Employ low drag systems which push you forward, not hold you back

The bottom line is this. Identified and employed effectively, disruption can actually supercharge business growth – provided you have an agile system.

What constitutes an agile system, as opposed to one that holds you back? Based on IFS's experience there are seven key characteristics to look for in your main run-the-business system or enterprise resources planning (ERP) application:

1. Enterprise-wide Visibility

The first thing you need is visibility into and integration of information across the enterprise. You cannot change or improve what you cannot see. To truly know your business you need to consolidate all your financial and operational information into a single system.

2. Real-time Operational Data

Organisations need a "single source of truth" for operations in real time. If information is not real time, it cannot drive new services or processes in real time. Capturing information at the source and communicating it immediately is vital.

3. Facilitate Customer Service

Does your ERP system facilitate customer service, including new services and apps? Can you optimise your service operations with integrated enterprise service management (ESM) software with mobility support? If not, how will you empower your customers?

4. Tailor Information to People's Roles

To make disruption your friend and not your enemy,

your organisation needs to tailor information to people's roles so they can consume it and act on it in an easy-to-use way. As more information becomes available, can you easily distil it down to what is needed for a particular job role or project and present it intuitively?

5. Support Digital Devices

Companies like Uber can put information into the hands of users wherever they are and whenever they need it. Is your ERP system accessible and useable across all devices – from PCs to laptops, tablets, smart phones and smart watches – and easily extendable to new devices?

6. Quickly Integrate New Technologies

Identifying disruptive technologies that can supercharge your operations is just the first step. The hard part is integrating them into existing business systems. Is your supplier constantly demonstrating new solutions to overcome challenges as they arise?

7. Configurable with Minimal Customisation

Disruptive technologies won't give you a long lead time to adapt to. Expensive customisation – when deploying systems or adapting them to business changes – is a drag on agility. To enable change, minimise customisation and use systems that are easily configured to meet new business requirements.

Ensure that your ERP system meets these seven key criteria and, like Uber, you will be well on the way to riding the wave of disruption and not being wiped out by it.

Rob Stummer is Managing Director, Australia and New Zealand for global enterprise applications company IFS, achieving significant growth over the last five years. He holds a Masters in Information Technology from Melbourne University and has consulted to many of the region's Top 500 companies. See: www.ifsworld.com/au



Make the most of your member benefits



The Fair Work Ombudsman commences an education and compliance campaign focusing on apprentices

The campaign will comprise a minimum of 700 audits of employers nationally and will check compliance with minimum employment entitlements and provide advice on the range of tools available to assist employers with their workplace relations obligations. Employers included in this campaign will be audited against the requirements of the Fair Work Act 2009, the Fair Work Regulations and the applicable industrial instrument, namely:

- //// Record-keeping;
- //// Pay slips;
- //// Ordinary rates of pay;
- //// Penalty rates/Overtime; and
- //// Allowances/Loadings.

In addition, the campaign will provide advice on contemporary issues including:

- //// Payment for time spent in off-the-job training, and where applicable
- //// Competency based progression
- //// Reimbursement for training fees as per the recent FWC Full Bench decision

Further information can be found at www.fairwork.gov.au/apprentices



New installation code for metal roof and wall cladding

Standards Australia has published the third edition of Handbook (HB) 39: Installation code for metal roof and wall cladding, which was last published in 1997. The 2015 edition supersedes the 1997 version.

A joint project between the Victorian Building Authority, the Australian Steel Institute and Standards Australia, the 2015 edition of HB 39 is based on contributions received from installers, manufacturers, educational institutes and industry training organisations, and peer reviewed by Standards Australia Technical Committee WS-014, Plumbing and Drainage.

The intent of the Handbook is to provide guidelines and a code of good practice for industry training providers, the Australian metal roofing installation industry and roofing contractors in any state or territory.

Some of the key updates are:

- //// Introduction of new aluminium/zinc/magnesium alloy-coated steel technologies that are designed to protect steel roofing from corrosion.
- //// Introduction of insulated roof panels, which are laminated panels manufactured from different materials, permanently bonded together so that they act as a single element. Installers are to refer to manufacturer's specifications when selecting, installing and working safely with these products.
- //// Practitioners are referred where applicable to AS/NZS 3500.3, Plumbing and drainage Part 3: Stormwater drainage; AS/NZS 3500.5, Plumbing and drainage Part 5: Housing installations; and HB 114, Guidelines for the design of eaves and box gutters. These publications include important criteria for roof drainage, roof flashings and cappings, and should be read in conjunction with this Handbook.

Mr Jarrod Edwards, Director of Technical and Regulation at the Victorian Building Authority, said: "The updated Handbook is a real collaborative effort between the industry, regulators, and practitioners. It aims to provide guidelines to resolve real-world installation problems and I am confident that the Handbook will serve as a useful resource for all in the industry."

Dr Bronwyn Evans, Chief Executive Officer of Standards Australia, said: "In line with our mission to develop contemporary technical documents that benefit the community, the revised Handbook 39 has been updated to take into account new technologies and developments. It is a culmination of the experience and expertise of many in the industry and represents a consensus view on good installation practices."

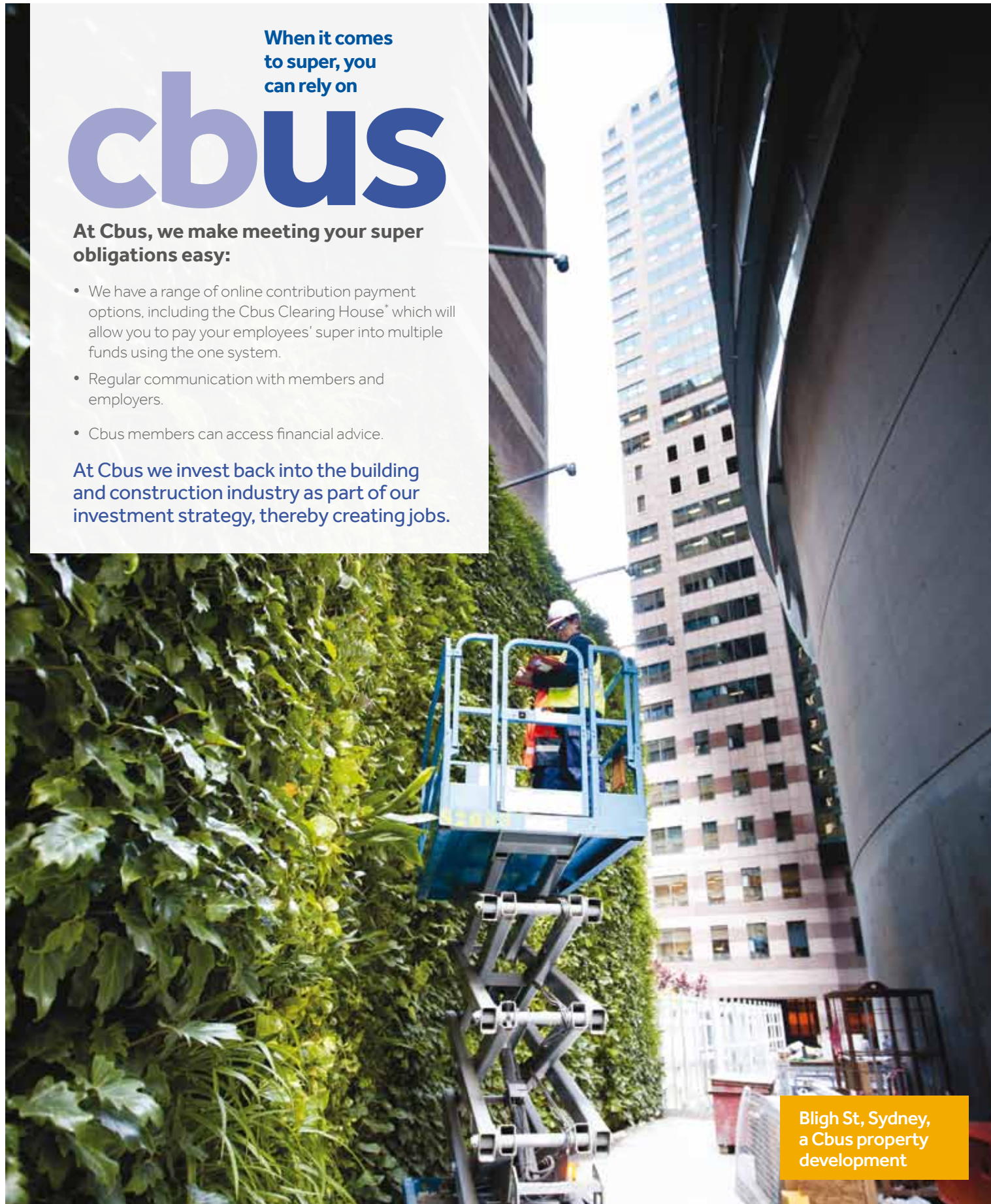
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The thing about caveats ...

We have been involved in a number of matters recently where the right to lodge a caveatable interest was in dispute. Caveats are the 'go to' security for many in the building industry, because the asset at the heart of the relationship is invariably a property. But often insufficient thought is given to whether registering a caveat over the land is really going to help recover the debt. Here are some things you should know.

What is a caveat?

A caveat is a place-holder. It is registered against the title of a property and prevents the owner from dealing with the land without the consent of the person who registered the caveat (the caveator). It does not give the caveator the right to do anything with the land.

When can I lodge a caveat?

A caveat must be supported by a proprietary interest in the land. Recent cases in New South Wales[1] and Western Australia[2] have held that simply putting a clause in a contract that says you can lodge a caveat over another person's land does not, of itself, create a caveatable interest in that land.

It is crucial that the contract itself creates some kind of property rights in the land. This might be expressly stated or implied from the context of the agreement.

In the context of a building contract, a caveatable interest will exist if there is a clause in the contract allowing the builder to register a caveat over the land AND the contract expressly grants the builder a charge over the land. The MBA's standard residential building contract has a 'caveatable interest' clause that satisfies these requirements (and which has been upheld by the ACT Supreme Court).[3]

However if you use a different type of building or supply contract, you need to be careful that any clause purporting to give a caveatable interest over land is actually effective to create a proprietary interest in the land. This may be something you need to seek legal advice about.

Can't I just lodge the caveat and see what happens?

If you register a caveat without a caveatable interest, the owner of the land can bring a claim against you for any loss suffered as a result of the caveat.[4] If a property transaction is blocked because of the caveat, this loss can be very substantial.

How will a caveat protect my interest in the land?

Many people think that if they lodge a caveat over land, this will somehow lead to the owner paying the amount due under the contract. A caveat gives you leverage, but it does not mean you will necessarily get paid quickly, or even at all. Your caveat could sit there for many years before the owner needs it lifted because of an impending sale or refinance.

Another common misconception is that once a caveat is lodged, the caveator can breathe easy. In reality, however, the owner of the land can easily apply to the Land Titles Office for a 'lapsing notice'. Once you have been served with a lapsing notice, you will have 14 days to apply to the Supreme Court for an order to extend the caveat. That application can be costly. If you do not bother with getting an order, that will be the end of your caveat – and you are not allowed to lodge another one.[5]

As long as you have an enforceable caveatable interest in your contract, you should be successful in getting that order. However a court will not allow a caveat to sit against a property indefinitely when there is a dispute about the underlying debt. You will generally be required, as a condition of getting the extension order, to institute court proceedings to sue for the debt owed to you. Those court proceedings can also be costly.

Further, the court will generally require the caveator to give an 'undertaking as to damages'. This means if the caveator ultimately loses the court proceedings about the debt, the caveator

will have to compensate the owner for any loss it suffered as a result of not being able to deal with the property.

If it's so hard, why bother?

Caveats are important as they inform third parties of your interest in the land. If you did not lodge a caveat and the owners of the property were to sell to a third party, your interest will be lost forever.

Also, if you have a legitimate debt and the owner cannot pay you, it is possible they are also defaulting on their obligations to the bank. In the event that the owner's bank steps in to sell the land under a mortgage, any money left over after the bank satisfies its debt must be given to you to satisfy your claim before any remainder is paid to the owner.[6] This means that (albeit in rare cases) the bank might well do your debt recovery for you.

What should I do next?

You should obtain legal advice on your building or supply contracts to make sure your security is both appropriate and enforceable. Caveats are one of many options. Personal guarantees or charges over other assets might be better (or used as well), depending on the circumstances.

Before you lodge a caveat you should always check whether you have a caveatable interest. A small amount of legal advice up front can save substantial costs later if you get it wrong.

If you would like to know more about the possible legal avenues open to you to recover money owed to you, we are very happy to provide you with assistance.

For more information or assistance, please contact:

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[1] Aged Care Services Pty Ltd v Kanning Services Pty Ltd (2013) 86 NSWLR 174.

[2] Yaran Holdings Pty Ltd v Goldsmith 7 Pty Ltd [2014] WASC 171.

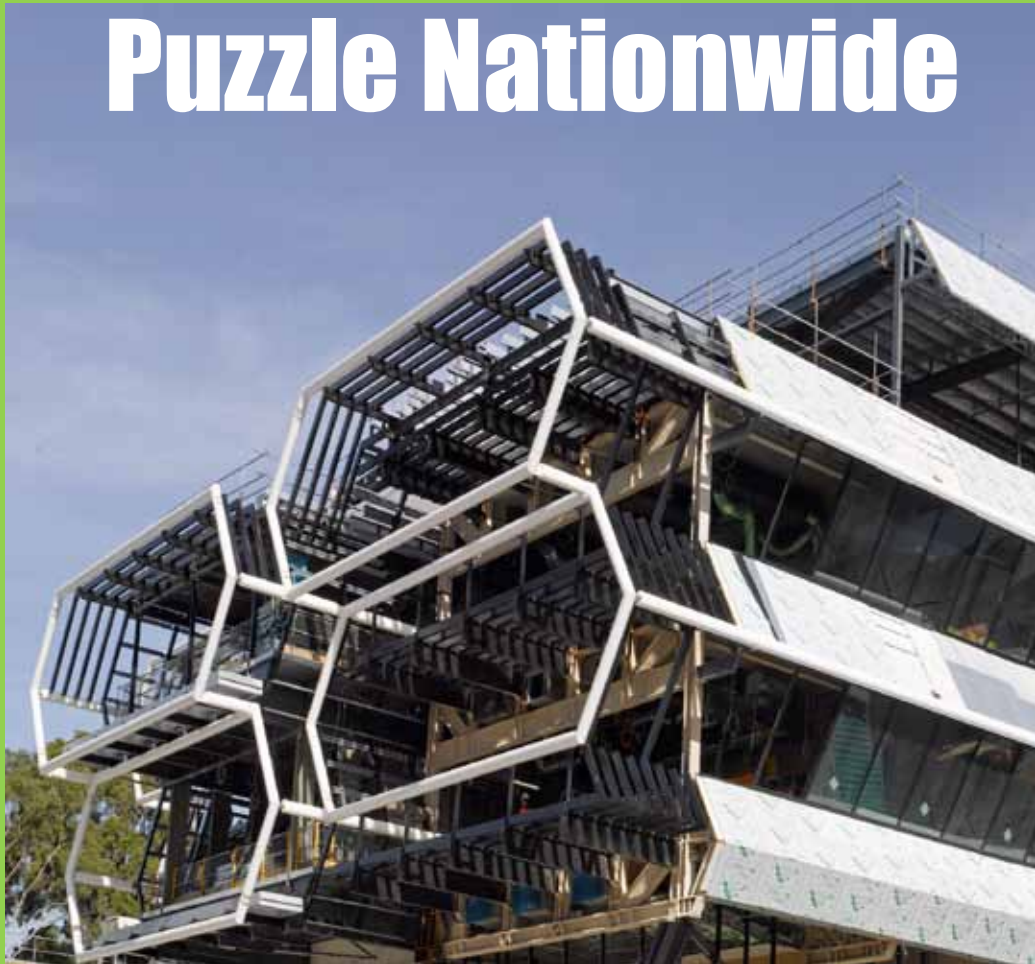
[3] Andara Homes Pty Limited v Tai [2014] ACTSC 38.[4] Land Titles Act 1925 (ACT) s 108.

[5] Land Titles Act 1925 (ACT) ss 107 and 107C.

[6] Land Titles Act 1925 (ACT) s 94.

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SuperStream starts for small employers - ATO urges employers to get ready

With the start of the new financial year, the ATO is urging small employers to get ready for SuperStream.

1 July heralds the start of SuperStream for small employers (with 19 or fewer employees). Medium to large employers (with 20 or more employees) should now be SuperStream ready but have until 31 October 2015 to finalise their implementation.

The ATO is advising employers that have not yet made the change to speak with their service provider, accounting professional or super fund to help find a solution that best suits their business needs.

Under SuperStream, employers are required to make super contributions electronically in a standard format. A significant benefit is the reduced time and cost it takes for employers to meet their super obligations.

Thousands of small employers have already made the change to SuperStream. Many employers now using SuperStream have reported they are experiencing significant benefits.

Accountant Peter Shonhan of Kennas Chartered Accountants said the move to SuperStream has cut down time spent on paying super considerably.

"We upgraded our payroll software and have been recommending our employer clients to do the same. What previously took around a day per month now takes less than an hour. The time savings are pretty high and allows us to focus on other parts of the business," said Mr Shonhan.

"SuperStream changes are much like the move to internet banking. There are a few steps to set things up, but, after that, making super contributions is so much easier and faster than before. We couldn't imagine going back to our old methods," he said.

Philip Hind, ATO National Program Manager, Data Standards and E-Commerce (SuperStream), said SuperStream is delivering real benefits for business.

"SuperStream is making super contributions super simple. For employers, it is cutting red tape by making all super payments electronic and introducing a standard way to pay contributions."

"Previously, it has been time consuming for employers who had to make multiple super contributions to numerous funds with many also using cheques to make payments.

"For many employers paying super took hours. Under SuperStream, employers need now make just one electronic transaction covering all employees – and this can considerably cut the time it takes to make super contributions."

"There are many options available to adopt SuperStream. Employers should investigate their options and prepare now. The ATO's SuperStream employer checklist is a great place to start," Mr Hind said.

Small employers also have the option of using the ATO's free Small Business Superannuation Clearing House to meet their SuperStream obligations.

For more information, go to the ATO's:

||||| employer checklist at www.ato.gov.au/SuperStreamChecklist

||||| Small Business Superannuation Clearing House at www.ato.gov.au/SBSCH

Australia to Capitalise on Favourable Construction Conditions

Local and global market conditions are helping Australia become a favourable construction nation, according to Turner & Townsend's International Construction Market Survey 2015.

Sydney is now positioned at number 10 with New York City taking the first spot for the most expensive place to undertake construction activities in the 35 markets surveyed. The 2015 survey also ranked Perth at 16, Melbourne at 19 and Brisbane took the 20th spot.

The International Construction Market Survey 2015 analyses input costs – such as labour and materials – and charts the average construction cost per m² for both commercial and residential projects in 35 markets around the world.

Gary Emmett, Senior Economist for Turner & Townsend commented:

"The tide is now starting to turn in Australia's favour with many factors influencing this change. These include a falling Australian dollar, a low interest rate environment which makes finance relatively cheap and stable construction costs. The winding down of construction within the mining sector is freeing up resources for other sectors including infrastructure, tourism, education and agriculture.

"Foreign companies are also looking for opportunities as a direct result of the low Australian dollar against the US dollar. The 2015 report shows that compared to 2011, it would cost overseas investors paying in US dollars 13 per cent less to construct buildings in Australia which is a significant reduction."

"With the exception of Sydney's apartment market, the cost of construction is stable and the outlook moderate for the medium term. Labour availability has improved significantly as a direct result of several mining projects slowing which is creating opportunities for other industry sectors," Gary continued.

"Wages growth is forecast to be moderate for the foreseeable future and in some cases is actually falling in regions such as Western Australia. Overall, it is a great time to build. Construction costs should remain fairly stable although some residential construction trades may become increasingly difficult to source, adding pressure to costs. Foreign investors are expected to seek more opportunities here to capitalise on the favourable conditions to build projects."

Compiling data from Turner & Townsend teams in 35 global markets, the ICMS gives an in-depth snapshot of construction costs – and what's driving them – around the world. It measures average input costs and calculates the average cost per m² of building a range of construction projects, including high-rise apartments, city centre offices, hospitals, schools, warehouses and shopping malls.

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Standard Contracts Key to White Collar Productivity in the Construction Industry

Opinion piece by Bob Wildemuth FAIB

When it comes to productivity reviews in the construction sector, the white collar component of the construction workforce has unfortunately been neglected in preference for the larger blue collar component. The Australian construction industry has now earned the somewhat unenviable reputation for some of the highest construction costs by comparison with other developed countries.

White collar productivity is certainly a sadly neglected sector that can deliver potentially significant productivity improvements, simply through some fundamental changes.

Whilst the blue collar workforce physically perform the construction works and are commonly referred to as productive workers, the white collar workforce do not physically perform the construction works but instead perform managerial, supervisory and contract administrative work and are referred to as non-productive workers.

Despite the common use references to productive (blue collar) and non-productive (white collar) workers, both groups actually perform productive and non-productive work in relation to the different types of work they perform. Notwithstanding this, it is evident from a productivity perspective that any white collar work that can be reduced or avoided will lead to project cost savings which ultimately lead to overall project productivity improvement.

As a professional commercial practitioner (white collar) for most of my career, I've worked with many different forms of contract. It is this fundamental aspect of construction - the form of contract, that I believe has enormous potential to eliminate significant non-productive white collar workforce costs.

I am but a simple quantity surveyor, who has spent a great deal of time, particularly early in my career, dealing with and treating the symptoms, rather than the root causes of construction problems and disputes. Call it wisdom, call it whatever you want but these days I find myself regularly sifting through the various issues of dispute affecting a project and usually identifying a couple of root causes that have caused significant non-productive costs. One of those is regularly the use of a heavily amended standard form of contract.

The concept of a standard form of contract is not new and Standards Australia has produced a number of standard forms of contract (such as AS2124) for some period of time. If only these standard contracts were used as originally intended which was to facilitate a balanced and reasonable

allocation of risk, without the need for amending the standard. This would provide the following benefits:

1. Time and cost savings for the client through reduced time for contract documentation preparation and reduced legal fees.
2. Contractor's estimators being able to use the same prices for similar work in similar locations (based upon standard contracts) without the need to read an amended contract from cover to cover during the tender period and make provision for changes in standard risk allocations.
3. No need for qualifying and negotiating unacceptable standard risk changes as proposed by the client (usually as advised by its lawyers), thus saving time and cost for the contractor and the client.
4. A significant reduction in disputes arising from interpretation and administration of amended standard contract clauses because the meaning of un-amended standard clauses quickly become known throughout industry.
5. An opportunity for use of standardised contract administration notices and templates and the avoidance of a learning curve associated with getting "up to speed" with the terms of heavily amended standard contracts.

In my experience, the loudest opponents to such a logical fundamental change to using un-amended standard forms of contract have been the profession with the most to lose - the legal profession. The legal profession has entrenched itself in the industry through:

1. Pre-contract Stage - Advising Clients to amend standard forms of contracts or write bespoke contracts;
2. Pre-contract Stage - Advising Contractors on unacceptable terms of amended standard contracts and bespoke contracts;
3. Contract Stage - Advising Clients on matters of dispute including litigating / defending actions involving amended standard or bespoke contract terms because there is a lack of clarity and certainty because of the bespoke nature; and
4. Contract Stage - Advising Contractors on matters of dispute including litigating / defending actions involving amended standard or bespoke contract terms because there is a lack of clarity and certainty because of the bespoke nature.

Sure there has been and will be litigation on standard

contract terms, but over a relatively short period of time, such litigation has provided a great deal of clarity as to what most of the standard terms mean or don't mean and hence a substantial reduction in disputes. I'm not saying there will be no disputes or litigation with un-amended standard forms of contract, just a substantial reduction.

Some of the arguments put forward by the legal profession revolve around the need for parties operating in the business world to have the flexibility to formulate a commercial deal.

I'm sorry, but a construction contract doesn't need to be complicated. Provided the Client knows what it wants constructed and provides detailed documentation of its requirements, then a standard form of contract is very suitable. And that equally applies to design and construct contracts where the client provides a suitable detailed design brief.

Standard forms of contract work for the real estate industry, the car sales industry and the residential construction industry. But apparently they are totally unacceptable for the commercial construction industry. As a practitioner in commercial construction for over 30 years it makes no sense whatsoever from a cost perspective. My opinion is based upon the vast amounts of non-productive (including legal) time spent as a direct consequence of amending standard forms of contract.

It is going to require Government leadership and legislation to get some fundamental change on this issue.

In reality, it would be a fundamental step towards the construction industry doing what is best for itself and the consumers that purchase or use the facilities constructed by the industry.

The use of standard (un-amended) forms of contract for commercial construction will ultimately lead to more of every dollar spent on construction being paid to the blue collar workers that lay the bricks and pour the concrete. Thus more physical construction can be built for the available budget.

Our infrastructure Prime Minister is already on the record as committing to a substantial national budget for infrastructure. So this issue must surely be of national interest.

Let's start agitating our politicians for change, because increases in productivity can and should be made, whatever they are, because as a nation we certainly need them.



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Sydney Build 2016 Expo

Sydney Build 2016 Expo has recently launched as the new, dedicated, interactive and free-to-attend construction show focusing exclusively on Sydney and New South Wales. This new format event will be taking place at the Australian Technology Park Sydney on 10th - 11th March 2016.

Sydney Build will bring together a wide variety of international and local suppliers, contractors, architects, government and construction professionals. Latest projects, trends, developments and investment opportunities will all be discussed revolving exclusively around New South Wales and Sydney – the building capital of Australia.

Over the 2-day show, there are to be 40+ free-to-attend conferences and workshop sessions. A few of the high level speakers confirmed

include Damien Hertslet, Executive Director of Construction from Lendlease, who will be giving the audience an update on the ongoing Barangaroo South project. Joining him at the event will be Ed Obiala, Project Director from Laing O'Rourke who is to provide an insight into the redevelopment of the ANZ Stadium in collaboration with BVN Architects. The NSW Chapter President from the Australian Institute of Architects, Shaun Carter will be discussing the Benefits of Using an Architect.

Alongside them, there will be interactive presentations from among others: Brookfield Multiplex, Australian Institute of Architects, BIM Academy, PrefabAus. There will also be other top-level speakers sharing their insights on a wide range of topics such as upcoming infrastructure investment, residential and

commercial construction, BIM, design and architecture.

To continue the professional development of the construction industry in the region, the show will also be offering complimentary CPD Accredited Workshops.

A key format of the new event will be the business matchmaking service for all attendees. A series of high level networking functions and meetings are to be run in conjunction with the show, which will allow the industry suppliers to meet one on one with key managers and directors. There are three functions in total, Meet the Architect, Meet the Contractors and Meet the Developer.

To learn more about this exciting, new format show, to confirm your free tickets and receive more information please go to: www.sydneybuildexpo.com or email sydneybuild@oliverkinross.com

AIB NEW MEMBERS



On behalf of the existing membership, the Chapter Committees and the National Council extend a very warm welcome to all these new additions to the AIB family.

AIB NEW MEMBERS

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Mr	Sakarije	Ali	WA	Australia	Student
Mr	John	Babic	NSW	Australia	Associate Level 2
Mr	Jason	Ball	WA	Australia	Member
Ms	Jessica	Baller	WA	Australia	Student
Mr	Arishia	Baloutch	VIC	Australia	Student
Mr	Jay	Barnes	VIC	Australia	Student
Mr	Peter	Beckford	VIC	Australia	Student
Mr	Harshinder	Bhandari	NSW	Australia	Student
Mr	Darpan	Bhudia	WA	Australia	Student
Mr	Christopher	Black	QLD	Australia	Student

Mr	Mathew	Browne	NSW	Australia	Student
Mr	Anthony	Cantali	WA	Australia	Student
Mr	Ben	Caples	NSW	Australia	Associate Level 1
Mr	Marc	Carroll	NSW	Australia	Student
Mr	Nathan	Cartledge	VIC	Australia	Student
Mr	Chi Kong	Chan		Hong Kong	Member
Mr	Kin Chung	Chan	WA	Australia	Student
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Mr	Philip	Fahy	WA	Australia	Student
Mr	Jack	Filsner	WA	Australia	Student
Mr	Alexander	Finch	WA	Australia	Student
Mr	Isolde	Flores	WA	Australia	Member
Mr	Kim Man	Fung		Hong Kong	Member
Mr	Gregory	Gilyou	NSW	Australia	Member
Mr	Josef	Grehan	NSW	Australia	Member
Ms	Chunyan	Gu	VIC	Australia	Associate
Ms	Catherine	Gunawan	WA	Australia	Student
Mr	Manish	Hansji	NSW	Australia	Student
Mr	Manish	Hansji	ACT	Australia	Student
Mr	Tom	Harrison	WA	Australia	Student
Mr	Rowan	Hindmarsh	NSW	Australia	Associate
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Mr	Kaming	Hui	SA	Australia	Student
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Mr	Alireza	Karimi	WA	Australia	Student
Mr	Ahmed	Karwa	WA	Australia	Student
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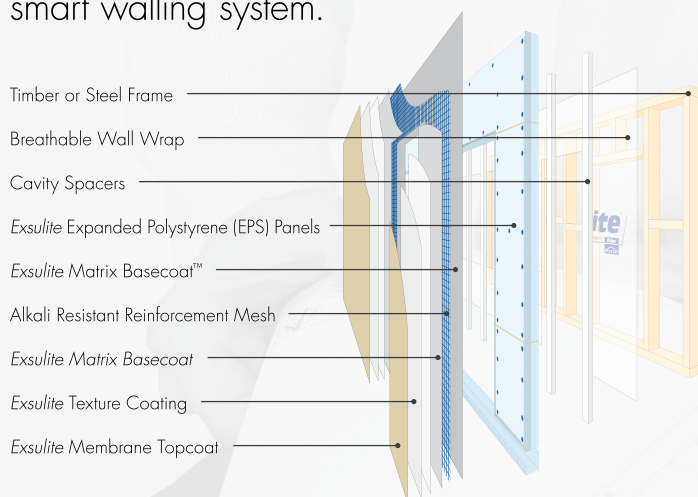
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