

NATSPEC

PRODUCT PARTNERS
Quality Reputation Support



Case Studies and Technical Articles 2019 - 2020

Welcome



Building is collaborative. The united efforts of clients, designers, consultants, contractors, manufacturers and others to realise a vision can be more or less successful - with so many involved in the process, tight time frames and cost pressures, comes the increased possibility of misinterpretation, error, carelessness, and sometimes incompetence and even fraud.

NATSPEC supports collaboration in the building industry primarily through the National Building Specification. The National Construction Product Register (NCPR) and the National Building Information Modelling Portal are other successful initiatives evolving from NATSPEC's collaborative approach and leadership through information.

Designers know that quality construction and compliance with building regulations cannot be demanded during construction if not designed for and set out in the contract documentation, without additional cost. With care in design, material selection, documentation, workmanship and supervision, both quality construction and statutory compliance can be realised without necessarily increasing the time and cost. The alternative is almost certainly poor quality, non-compliance and increased cost due to greater rework, repair and maintenance during the life of the building.

The 2019 NATSPEC Product Partners Case Study Magazine showcases successful collaborations between designers and our Product Partners – manufacturers who appreciate that good documentation can lead to quality building. We hope you find inspiration and ideas for your next project.

Richard Choy
Chief Executive Officer
NATSPEC//Construction Information

Product Partners Program

The NATSPEC Product Partners program was developed to provide manufacturers with an opportunity to place a branded worksection in the National Building Specification. The objective is to allow design and construction industry professionals to easily access a proprietary specification from manufacturers, offering reputation, quality to Australian Standards, and support. Selection of products is also easier, saving you time and reducing your risk.

NATSPEC is the trading name of Construction Information Systems Limited, ABN 20 117 574 606.

NATSPEC, founded in 1975, is a not-for-profit organisation that through professional associations and government property groups, is owned by the design, build, construct, and property industry. It is impartial and is not involved in advocacy or policy development.

NATSPEC's major service is the comprehensive national specification system endorsed by government and professional bodies. NATSPEC, the National Building Specification, is for all building structures with specialist packages for architects, interior designers, landscape architects, structural engineers, service engineers, and domestic owners. AUS-SPEC is the Local Government specification system for the life-cycle management of assets. Packages include Urban and Open Space, Roadworks and Bridges, Public Utilities, and Maintenance. NATSPEC is also responsible for the National BIM Guide and its associated documents.

NATSPEC's objective is to improve the construction quality and productivity of the built environment through leadership of information.

Stakeholders

Air Conditioning and Mechanical Contractors' Association of Australia
Australian Elevator Association
Australian Institute of Architects
Australian Institute of Building
Australian Institute of Building Surveyors
Australian Institute of Quantity Surveyors
Chief Minister, Treasury and Economic Development Directorate (ACT)
Construction Industry Engineering Services Group
Consult Australia
Department of Finance (Federal)
Department of Finance (WA)
Department of Finance, Services and Innovation (NSW)
Department of Housing and Public Works (QLD)
Department of Infrastructure, Planning and Logistics (NT)
Department of Planning, Transport and Infrastructure (SA)
Department of Treasury and Finance (TAS)
Department of Treasury and Finance (VIC)
Engineers Australia
Master Builders Australia
Standards Australia



NATSPEC//ProductPartner



Branded Worksections have been compiled by NATSPEC and our Product Partners using the latest regulations and standards. Download for free at www.NATSPEC.com.au



01 General

0181p BOSTIK in adhesives, sealants and fasteners
 0181p MAPEI in adhesives, sealants and fasteners
 0184p ENSYSTEX termite management
 0184p FMC HomeGaurd termite management
 0184p TERMGUARD termite management
 0184p TERMSHIELD termite management
 0191p GERFLOR sundry items
 0192p ANCON structural components
 0194p RAVEN door seals and window seals
 0195p DTAC tactile indicators and stair edgings

02 Site, urban and open spaces

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 0279p PASCO BUZON in paving - on pedestals

03 Structure

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 0310p AQUORON 1000 HYDROGEL in concrete - combined
 0310p CONQOR B52 HYBRID-HYDROGEL in concrete - combined
 0310p DINCEL in concrete - combined
 0311p FIELDERS KingFlor in concrete formwork
 0325p DEFLECTA concrete protection
 0325p AQUORON 7000 HYDROGEL concrete protection
 0341p FIELDERS SlimFlor in structural steelwork
 0341p GALVSPAN steel purlins and girts in structural steelwork
 0341p LYSAGHT purlins and girts in structural steelwork
 0345p DULUX steel protective paint coatings
 0345p WATTYL steel protective paint coatings

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 0411p MAPEI in waterproofing - external and tanking
 0411p PARCHEM waterproofing - external and tanking
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 0423p FIELDERS roofing - profiled sheet metal
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 0437p FIELDERS cladding - specialised panels
 0437p KINGSPAN insulated panels cladding systems
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 0451p AWS aluminium windows and doors

0451p CAPRAL ALUMINIUM windows and doors
 0453p CS Cavity Sliders in doors and access panels
 0453p RONDO in doors and access panels
 0454p B&D GROUP in overhead doors
 0454p EZI ROLL overhead doors
 0455p ASSA ABLOY door hardware
 0456p BREEZWAY louvre windows
 0456p SAFETYLINE JALOUSIE louvre windows
 0458p TORMAX automatic doors
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 0473p DAMTEC acoustic floor underlays
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 0473p REGUPOL acoustic floor underlays

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 0531p CSR HIMMEL in suspended ceilings - combined
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 0541p TATE ConCore access floors
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 0762p ASKIN XFLAM performance panels in cool rooms
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GETTING HELP

INTRODUCTION

This TECHnote summarises the variety of ways in which NATSPEC provides help to specification writers.

NATSPEC Guidance

NATSPEC worksections include extensive *Guidance* text with suggestions on filling in prompts, alternatives, and background material. *Guidance* is in Microsoft Word hidden text format which can be turned on or off, and appears like this:

NATSPEC does not recommend the use of SCOPE OF WORK clauses. If you wish to include such a general description you may add it here, or in the corresponding location of selected worksections.

If you work with an office master, you may find it convenient to add your own guidance notes using NATSPEC's hidden text styles.

Hidden text and other features that can help you in your specification writing are accessed via the NATSPEC toolbar. See sidebar.

NATSPEC Optional style text

Some worksections include *Optional style text in this font (blue with a grey background)* that covers items specified less frequently. It is also a Microsoft Word hidden text format which can be incorporated into *Normal* style text, where it is applicable to a project, by highlighting the text and changing the style and format.

NATsource

NATsource lists in excess of 1200 documents cited in the specification packages. Use it to check document titles, currency, content and publishers. Access *NATsource* via SPECbuilder/Resources/Standards Info. Changes to cited standards are summarised in *Standards revising NATSPEC and AUS-SPEC* which is available on the NATSPEC website under Technical Resources/Standards.

NATSPEC TECHnotes, TECHreports and AUS-SPEC TECHguides

TECHnotes provide guidance of a more general nature that either relates to several worksections, or does not fit into the normal worksection structure, TECHreports provide more detailed information on specification issues and TECHguides provide guidance on compiling contract documentation for local government projects.

All these documents continue to be developed and updated. The latest versions are available in the Technical Resources area of the NATSPEC website or via the Resources link in SPECbuilder Live.

NATSPEC Website

NATSPEC's website has a range of material including:

- Details of NATSPEC specification packages, including abstracts of worksections.
- A link to SPECbuilder Live.
- Links to Product Partners' websites arranged by worksection.
- A link to the National Construction Product Register (NCPR), a searchable database of construction products with evidence of conformity to Australian and International standards. See www.natspec.com.au.
- Notification of latest changes to standards affecting NATSPEC worksections.
- Information on publications relating to specification writing.
- Answers to frequently asked questions (FAQs) on specification writing, purchasing NATSPEC, getting started with NATSPEC and word processing.

NATSPEC BIM Portal

The BIM Portal is home to the *NATSPEC National BIM Guide* and related documents. It also includes resources and tools to assist the implementation of BIM in the construction industry. To go to the BIM Portal click on the *NATSPEC BIM* logo on the NATSPEC website.

NATSPEC Training

NATSPEC provides training in specification writing-related subjects.

For details of monthly *Getting started with NATSPEC* webinars and annual training courses in venues around Australia see www.natspec.com.au.

Videos of previous courses are also available on the website. Subscribers are notified of upcoming training courses.

Relevant Publications



Specifying Architecture - a guide to professional practice

NATSPEC assistance

NATSPEC does not provide a design or specification service but we can assist with specification writing techniques and dealing with problems using SPECbuilder Live and NATSPEC in Microsoft Word.

If you have problems finding what you want, feel free to contact us directly.

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PRODUCT SPECIFYING AND SUBSTITUTION

PROPRIETARY SPECIFYING

In NATSPEC *Proprietary* means identifiable by naming the manufacturer, supplier, installer, trade name, brand name, catalogue or reference number.

GENERIC SPECIFYING

The aim of the specification writer in customising NATSPEC for a project is to describe performance as follows:

- Measurable outcomes in terms of:
 - Conformance to a standard.
 - Product tolerance.
 - Construction tolerance.
 - Delivery and energy use.
 - Durability.
 - Compatibility with existing systems.
- Comparable outcomes in terms of:
 - Colour and texture.
 - A benchmark description.

Evaluation criteria include:

- Type tests.
- Evidence of conformance to a recognised certifying body such as JAS-ANZ.

SUBMISSIONS

NATSPEC has provisions for specifying particular requirements for submissions. Provision is also made for specifying time and program constraints for submissions. The clause relating to information submissions for building products under 0171 *General requirements*, **SUBMISSIONS** is:

Requirement

Products: Products and materials data, including manufacturer's technical specifications and drawing, evidence of conformance to product certification schemes, type test reports, performance and rating tables and installation and maintenance recommendations.

NATSPEC POLICY ON SUBSTITUTIONS

In order to maintain the contractor's contractual responsibility in regard to supply, NATSPEC allows for substitution within 0171 *General requirements*. The following italicised text is an extract from **PRODUCTS, GENERAL**:

Substitutions

Identified proprietary items: Identification of a proprietary item does not necessarily imply exclusive preference for the identified item, but indicates the necessary properties of the item.

Alternatives: If alternatives to the documented products, methods or systems are proposed, submit sufficient information to permit evaluation of the proposed alternatives, including the following:

- *Evidence that the performance is equal to or greater than that specified.*

- *Evidence of conformity to a cited standard.*
- *Samples.*
- *Essential technical information, in English.*
- *Reasons for the proposed substitutions.*
- *Statement of the extent of revisions to the contract documents.*
- *Statement of the extent of revisions to the construction program.*
- *Statement of cost implications including costs outside the contract.*
- *Statement of consequent alterations to other parts of the works.*

Availability: If the documented products or systems are unavailable within the time constraints of the construction program, submit evidence.

Criteria: If the substitution is for any reason other than unavailability, submit evidence that the substitution:

- *Is of net enhanced value to the principal.*
- *Is consistent with the contract documents and is as effective as the identified item, detail or method.*

Optional text

Costs: Pay the cost of submissions and of evaluations and tests of proposed alternatives, whether subsequently accepted as a variation or not. The costs will be calculated at the current charge-out rates of the relevant consultant(s).

ACUMEN ADVICE ON SUBSTITUTIONS AND VARIATIONS

An architect administering the contract should be aware that:

- *If the contractor proposes a substitution for materials specified in the contract documents, the architect should request approval from the owner for the substitution... If a substitution is made, the procedures set out in the contract for a variation of the works should be followed.*

(Italicised text is an extract from **Substitutions** in acumen.architecture.com.au, the Australian Institute of Architects' practice advisory subscription service.)

NATSPEC PRODUCT PARTNERS



A NATSPEC Product Partner is a building product manufacturer with an agreement with NATSPEC to include a purpose edited worksection in NATSPEC. See branded worksection.

A NATSPEC branded worksection is a technical worksection produced in NATSPEC format in conjunction with a Product Partner. Branded worksections provide specifiers with an alternative to the generic worksection where a particular product has been selected at the design stage.

The research prior to the selection of a product or system is filtered, both formally and informally, to eliminate inappropriate choices. The requirements of the client, regulators, standards, and the designer all affect whether the selection is presented as a generic or a proprietary item. The NATSPEC worksections facilitate the recording of both types.

All manufacturers are acutely aware of the problem of substitution by the contractor. It is being exacerbated by the lure of cheap and sometimes fake imports. Consultants are also affected as they spend considerable time and effort selecting a product, finish or electrical/mechanical system as part of their design responsibilities.

Relevant worksection

0171 *General requirements*

Related TECHnotes

GEN 014 *Submissions and testing*

WHY use a Branded Worksection?

"Certain elements of the project were specified using supplier-specific specifications generated efficiently by using NATSPEC's Product Partner specifications.

Minor adjustments are easy as these specification worksections fit easily into the project format.

The use of the NATSPEC system was a benefit to our documentation process through its consistent format, adoption by nearly all consultant organisations, engagement with product suppliers, flexibility to enable the development of new worksections and, most importantly, currency with Australian Standards."

BVN Architects — Synergy, CSIRO, Black Mountain, ACT

Accuracy

Like all NATSPEC specification templates, Branded Worksections are updated every April and October to align with current regulations, standards and industry practices.

Cost Effectiveness

Branded Worksections help to deliver projects on time and on budget.

Convenience

Suitable for projects of any size and complexity. Branded Worksections are easy to add to your project specifications using SPECbuilder, NATSPEC's online specification compiler.

Efficiency

Reduce time and risk by writing specifications using Branded Worksections which are up to 75% pre-edited. Minimise customising by simply selecting options and adding project specific information.

Quality

Branded Worksections are based on NATSPEC generic worksections and are developed in conjunction with NATSPEC Product Partners. The products' unique features and performance characteristics are correctly documented to communicate the required quality and minimise substitution.

Reputation

Branded Worksections are part of NATSPEC, the National Building Specification, trusted by designers, consultants, and contractors for over 40 years.

NATSPEC Product Partners support you. Support them and their products in your next project by selecting Branded Worksections in SPECbuilder or downloading for free from www.natspec.com.au

"NATSPEC was used as a vital design and documentation tool in preparing architectural specifications. Kent Lyon Architect was able to access, download and rely on the most up-to-date worksections, including Product Partner worksections, ensuring that the products available meet current Australian Standards and the National Construction Code.

Risks were reduced with the product specifications being constantly updated according to the industry standard."

**Kent Lyon Architect —
Bunbury Senior High
School, Bunbury, WA**

"NATSPEC is a comprehensive classification system and an indispensable architectural design and documentation tool. The system provides a foundation of information, which is reflective of current industry standards, as well as Product Partner worksections featuring current products. These work sections clearly outline product performance and characteristics, allowing us as specifiers to assess which products are best suited and meet the requirements of the NCC. The easy-to-follow format of the worksections allows specifications to be compared fairly; this contributes to the well-informed design decisions and reduces the risk during variations. Within relation to the Warren Health Service, the use of NATSPEC was a requirement and provided a systematic approach to specification, ensuring that all selections were high quality, suitable to application and provided value for money."

Silver Thomas Hanley — Warren Health Service, Manjimup, WA



BRANDED vs GENERIC WORKSECTIONS

BRANDED OR GENERIC?

The foundation unit of the NATSPEC specification system is the worksection. NATSPEC worksections are selected and customised by the specifier to produce a project specification. In some instances, the specifier can choose between a generic worksection and a branded worksection when compiling the specification. This TECHnote defines the alternatives and outlines their advantages.

BRANDED WORKSECTION	GENERIC WORKSECTION
Definition A NATSPEC branded worksection is developed by NATSPEC in conjunction with the manufacturer, known as a NATSPEC Product Partner. It is a MS Word document <i>Template</i> which follows NATSPEC style and format and can be customised by the specifier.	Definition A NATSPEC generic worksection is a MS Word document. It is a comprehensive <i>Template</i> which the specifier must customise by completing prompts, adding relevant material and deleting material which is not applicable to the particular project.
Classification Each branded worksection is based on the associated NATSPEC generic worksection and shares the same classification number.	Classification NATSPEC worksections are classified and sequenced in a logical order corresponding to common Australian construction industry sequence.
Advantages <ul style="list-style-type: none"> • Provides an alternative to a generic worksection where a particular product has been selected at the design stage. Associated generic material not manufactured by the Product Partner is still provided. • Minimal customising required as the <i>Template</i> has been approximately 90% pre-edited in conjunction with the Product Partner. • Current product information is readily available and accessible via hyperlinks between the <i>Template</i> and the Product Partner's website reducing research time and facilitating early decision making. • The possibility of product substitution by the contractor may be reduced as the unique performance characteristics of the product are clearly specified. 	Advantages <ul style="list-style-type: none"> • Provides comprehensive coverage of a particular work area. • Adaptable for open proprietary specification where more than one brand or model number is acceptable. • Adaptable for closed proprietary specification where a branded worksection is unavailable. • Useful where the inclusion of brand names is not permitted. • The <i>Template</i> can be modified to create a new worksection where a NATSPEC worksection is not available.

Regulations, standards, client and designer requirements will all have some influence on whether a generic or branded worksection is appropriate.

SUBSTITUTION

Manufacturers are aware of the problem of substitution by the contractor. To maintain the contractor's contractual responsibility in regard to supply, NATSPEC allows for substitution. However, text in the *0171 General Requirements* worksection requires the contractor to provide the contract administrator with the appropriate technical information to make an informed decision regarding the proposed substitution. See related TECHnote *Gen 006 Product specifying and substitution*.

Worksection Structure

Each worksection is divided into:

GENERAL - applies to the worksection as a whole and includes cross referencing, standards, interpretation, tolerances, submissions and inspections.

PRODUCTS - describes the basic materials, components and fabricated items.

EXECUTION - sets out the construction performance criteria to prepare the substrate, assemble materials to produce an installation and carry out the works.

SELECTIONS - contains schedules that refer to the selection of proprietary products or to generic products by their properties.



Open specifications, such as descriptive, performance or reference specifications, can be satisfied by more than one product. An open proprietary specification is where there is more than one acceptable brand or model number.

Closed specifications can be satisfied by only one product. A single brand or model number may be nominated. However, some specifications which seem open are actually closed as only one product on the market will satisfy the criteria specified.

Related TECHnotes

NATSPEC TECHnote *GEN 006 Product specifying and substitution* sets out the difference between proprietary and generic specifying, and explains the policy and means of managing contract variations related to requests for substitution.

Related Worksection

0171 General Requirements



"Quality documentation is one of the most important aspects for ensuring a project finishes on time, on budget, and meets the client's expectations of quality.

Without the guidance of NATSPEC and the inclusion of quality project specifications, there is an increased risk that projects will not achieve positive outcomes in terms of cost, quality, effectiveness, and timeliness of construction.

The NATSPEC Open BIM Object Standard for Building Information Modelling represents another key contribution to the construction industry."

Grant Warner, Chief Executive Officer, AIQS



For over 20 years, AFS' innovative propriety wall systems, afs logicwall® and afs rediwall®, have facilitated the speedy and cost-efficient installation of load-bearing walls in multi-residential and commercial projects throughout Australia, New Zealand, the US, UK, and Canada.

As part of CSR Limited's stable of leading building products that include Bradford, Gyprock, Hebel, Monier, PGH Bricks, and Viridian, AFS is committed to conducting ongoing research and development to create new, innovative, and superior construction solutions that bring time and cost-saving efficiencies whilst maintaining construction quality and sustainability standards. www.afswall.com.au



Established in 1974, ALSPEC is the market leader in the design and distribution of innovative, high performance aluminium systems to the architectural, industrial, and home improvement markets. Our extensive range of window and door systems is suitable for all commercial applications and is complemented by our Carinya residential range and our Invisi-Gard Stainless Steel Mesh Security System. ALSPEC is synonymous with excellence in design and superior performance. www.alspec.com.au



Ancon Building Products designs and manufactures high integrity steel products for use in masonry and concrete construction, and has earned a reputation for quality and technical expertise. The company operates from advanced manufacturing facilities and supplies projects worldwide ranging from small-scale residential developments to major infrastructure projects. www.ancon.com.au



AQUATHERM, founded in 1973, is a German manufacturer of polypropylene (PP-R) pipe systems. AQUATHERM's product range includes potable water, recycled water and mechanical and civil services, such as HVAC systems, compressed air and wet sprinkler pipe systems. Annually, over 38,000 km of pipe (Ø16 - Ø630 mm) and over 40 million fittings are produced, stored and dispatched all over the world. AQUATHERM has subsidiaries in Germany, Italy, England, USA and Canada and has more than 70 marketing partners around the world. All Innovation, Engineering and Production remains in Germany. www.aquatherm.com.au



Thornton Park Aged Care Community, NSW



Increasingly the aged care sector is playing an important role throughout Australia. The future growth of this sector is likely to be significant with the number of Australians aged 65 years and over forecast to more than double over the next 40 years. Consistent with this trend it is estimated that 76,000 new residential aged care places will be required by 2023-24 in order to meet this demand.

With this rapid growth in the aging portion of the population, there comes a higher expectation from the “Baby Boomer” generation. These potential residents and their families view themselves as consumers who are willing to shop around for a quality, well-built residence that can also meet the desire for an overall quality lifestyle with high levels of care and facilities. Therefore, for those involved in the creation of these facilities it means reassessing many of the conceptions previously held when it comes to the ways in which these projects are designed and developed.

Meeting quality expectations

With a demand for quality aged care residences and facilities; aged care operators, architects, engineers and builders need to find a construction method that is not only cost effective, but one that can maximise floor space and can meet strict completion time lines whilst maintaining the highest

quality standards. That’s why time and time again; architects, engineers and builders have preferred to use afs logicwall® and rediwall® with their proven performance in aged care construction making them the first-choice for above and below ground walling applications. Logicwall® panels are created by bonding hard wearing CSR Cemintel® fibre-cement sheeting against galvanised Bluescope steel frames and provide a reliable flat, true surface to deliver high quality finishes. Load bearing up to 30 floors, logicwall® is CodeMark Certified, AS3600-complaint and delivered with shop drawn accuracy making for rapid installation.

AFS Rediwall® is a PVC permanent formwork system with innovative lightweight panels that readily swift or slide into place making for rapid installation. It is load bearing, water resistant, AS3600 compliant and is now also CodeMark Certified. A semi-gloss finish provides a low maintenance surface with the option for further finishing as specified.

AFS walling systems have been used to construct premier aged care facilities throughout Australia and for this reason Hindmarsh Constructions chose to use AFS in their recently completed project for Southern Cross Care.

Next level retirement community

Thornton Park Aged Care Community located near Penrith NSW, is a state-of-the-art retirement community consisting of a 100-bed residential aged care facility and 48 independent living units. Designed by award winning architects Calder Flower, the community also has onsite amenities, facilities and professional services so that residents will have a life of ease with complete peace of mind whilst relaxing and enjoying their luxury surroundings.

Building with afs walling systems

Project Manager Andrew Tricardos from Hindmarsh Constructions explains why afs logicwall® was the preferred walling system for this development. “We decided to use logicwall® as the shop-drawn panels meant that the construction process was quick and efficient. When installed and filled with concrete it also meets the demands for fire resistance, acoustic and thermal insulation requirements. Overall it proved to be a better solution for out walling requirements.”

Over 13,000m² of afs logicwall® and 1,400m² of afs rediwall® were installed by HD Projects in multiple applications throughout the project including; external and internal walls, party walls, corridor walls, ramp walls, balustrades, lift and stair cores throughout.

For over two decades AFS have been providing construction professionals with premier walling systems that exceed client expectations and with more aged care projects currently under construction; it’s clear that Australia’s leading aged care facilities are choosing to construct with AFS’ range of innovative permanent formwork walling solutions.

Architect: Calder Flower

Builder: Hindmarsh Constructions

Developer: Southern Cross Care



Thornton Park Aged Care Community



0310p AFS WALL SYSTEMS in concrete - combined

www.afsformwork.com.au

Meriton Suites North Sydney, NSW



This new hotel uses high performance acoustic window and door framing products to ensure a quiet and peaceful stay for guests.

Guests at this new hotel in North Sydney will barely notice they are sleeping just metres from one of Australia's busiest roads, thanks to purposefully selected acoustic glazing products from Alspec's high performance range. The 29-storey Meriton Suites on Arthur Street is located adjacent to the Warringah Freeway, the key access route to the Sydney Harbour Bridge and Tunnel. With thousands of vehicles using the freeway each day, it was up to the building designers to work closely with Alspec's expert team to ensure optimum acoustic performance for the comfort of visitors.



With expansive surrounding views of Sydney Harbour and the Lower North Shore, products were needed which could deliver larger window openings and balcony doors to maximise the views, whilst minimising potential noise impacts. The ProGlide/Altitude Acoustic Sliding door was the obvious choice to provide the level of acoustic performance required for this application. This heavy duty, high performance sliding door system is ideal for floor-to-ceiling applications,

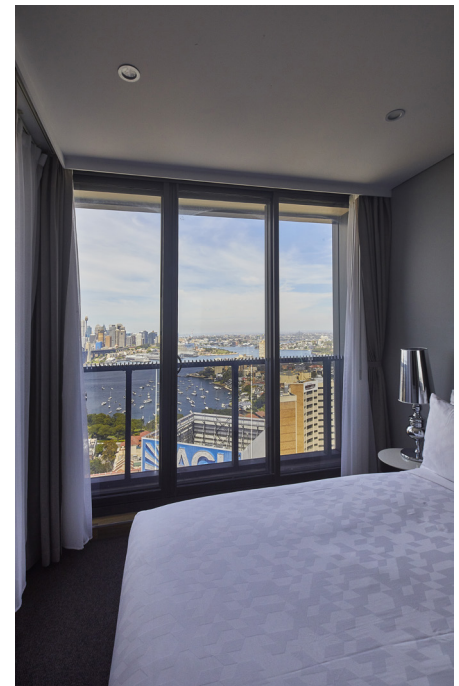
while providing exceptional all-weather performance as well as acoustic ratings up to Rw50.

To deliver the larger window openings to take advantage of the iconic views of Sydney Harbour, window framing products were selected from the Hunter Evo Flush Glazed Framing system. The Hunter Evo 150mm Acoustic Framing is an architectural grade aluminium framing product specifically designed for situations where acoustic considerations are paramount. As well as having exceptional sound-reducing properties, the Hunter Evo is extremely strong thanks to the design of the mullions (vertical frame elements) and offers excellent weathering performance.

Complimenting the framing choices, ProTilt High Performance Awning and Casement Windows were selected for openable window requirements. Able to accommodate glass up to 28mm, and with multi-point locking options, the ProTilt windows are ideally suited to hotel and commercial applications to enhance acoustic performance. The windows worked seamlessly with the Hunter Evo framing products to deliver an integrated glazing solution for the building.

At the end of a busy day exploring Sydney's many tourist attractions, or after a long day in the office for the business visitor, this well-insulated hotel

will provide a welcoming and peaceful refuge to relax and unwind.



Meriton Suites, North Sydney

Architect: Tony Caro Architects
Builder: Meriton Group
Fabricator: Alutec Windows
Photographer: Tyrone Branigan Productions



Barrack Place, NSW



ANCON designed and manufactured a bespoke stainless steel support system for the intricate brick façade on Barrack Place, located at 151 Clarence Street in Sydney CBD.

Owned and developed by Investa and completed in October 2018 by main contractor, Built, Barrack Place is an innovative 22,000sqm commercial tower with retail over three levels. The sustainable development achieved Australia's first ever WELL Core & Shell Precertification at the Gold level by the International WELL Building Institute™ and recently secured a 6-star Green Star As Built rating and is targeting a 5-star NABERS Energy rating.

Designed by Architectus, this 18-storey development features a large glass tower structure rising from a striking brick façade at street level and the lower floors. Ancon's specialist knowledge in how to support demanding architectural brickwork, plus their manufacturing agility and dedicated project management services, proved invaluable to the project's brickwork subcontractor, Fugen. In addition to intricate corbelled brickwork around each window opening, the brick façade also featured a 'Mega Corbel' over the grand entrance requiring extra-special consideration.

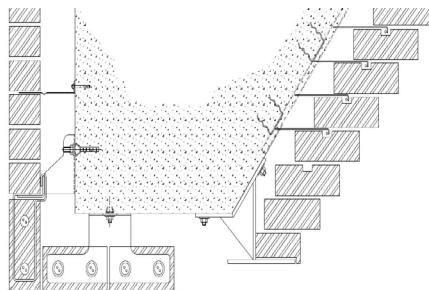
Stainless Steel Brick Support Angles

Ancon's engineered brick support systems enabled this large-scale cladding installation on this impressive development to be completed to the highest safety standards, while showcasing its architectural brickwork features. Each support angle used on the project was value engineered prior to manufacture and installation to provide a cost-effective fixing solution. Ancon detailed a support angle at every other floor level to accommodate the double height windows and brick panels on this aesthetically pleasing brick development.

Wherever possible, on simple straight brick runs, Ancon MDC continuous

shelf angles were designed to support the brickwork. These angles fix to the structural frame via welded brackets. The system spans the 50mm cavity and creates a horizontal shelf in the outer leaf to support the full brick panel above. MDC systems are designed and manufactured by Ancon in a variety of configurations to suit the specific masonry load and cavity width of individual projects. They are typically a cost-effective alternative to plain angles as the material content is optimised.

In order to support the 'Mega Corbel' at the building's entrance, Ancon designed a combination of stitching rods and channel-fixed wall ties to restrain grooved brickwork from an angled concrete frame. At the same location, brickwork is suspended from Ancon soffit angles, mechanically-fixed to the underside of the concrete frame, and an MDC support angle is used with stitching rods and stirrups beneath it to suspend a soldier course of bricks.



Ancon Mega Corbel Section Detail

To restrain the distinctive corbelled brickwork details around each window, stainless steel L-shaped Ancon SDB frame cramps were used. A number of different lengths were utilised in order to stagger the bricks away from the uniform structural frame. The frame cramps were fixed into the concrete.

Technical Expertise

As part of Ancon's free design service, layout plans were produced for approval prior to manufacture, illustrating the location and reference of all the fixings required. Ancon's early involvement with Façade engineers, Inhabit, enabled a practical and cost-effective design to be

agreed prior to the build of the complex masonry features. Utilising Ancon's expertise at design stage avoided installation difficulties, site delays and unnecessary remedial measures. All Ancon's structural steelwork is now hidden from view following the successful completion of the project, leaving only the architectural features on show.

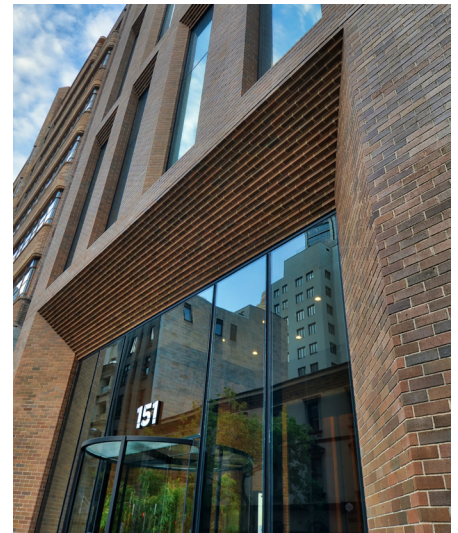
Client: Investa

Architect: Architectus

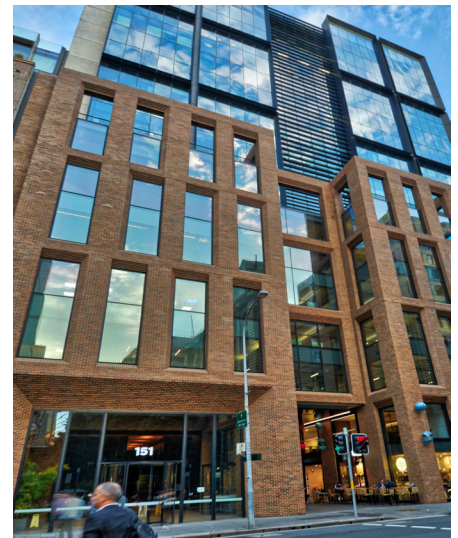
Façade Engineers: Inhabit Group

Main Contractor: Built

Brickwork Subcontractor: Fugen Masonry Contractors



Mega Corbel at the Building's Entrance



Barrack Place, Sydney, NSW



Woodleigh School Baxter Campus Homestead Project Phase 2 in Langwarrin South, VIC



aquatherm blue pipe Ti is a socket fusion and butt welded system, using rigid prefabricated PUR foam insulation sockets.

Opened in the 1970's, Woodleigh High school, based at Langwarrin South (VIC) on the Mornington Peninsula, is an independent, progressive school with an emphasis on independent thought. The Woodleigh School Baxter Campus engaged a design team for the design of three new Homestead buildings to replace the existing. For the phase 2 works, Cundall in Melbourne was engaged to provide building services design. Phase 2 consisted of the demolition of three existing homesteads and construction of three new modern homestead buildings and associated plant. The works were planned to be carried out in stages.

A central energy plant approach was adopted to provide long term whole of life benefits to the school in terms of operating and replacement costs, as well as the future flexibility to expand to serve the future three Homesteads. Part of the building services design, was the design of a district (in trenches) heating water (HHW) and chilled water (CHW) pipe system.

Some of the services strategies catering to the project objectives were as follows:

- Durable and low-maintenance materials and services.
- Economical construction and

economical operating costs.

- To establish a viable, sustainable, professional and modern technological school operation.
- Design a functional building and inherent flexibility.

For the underground HHW and CHW pipework Cundall specified pre-insulated medium pipes made of Polypropylene pipes, including a Polyurethane type of insulation and a casing pipe made of Polyethylene. An example of an acceptable pipework system was the aquatherm blue pipe Ti system, manufactured by Aquatherm.

Some advantages of the aquatherm blue pipe (Ti) system are:

- aquatherm blue pipe (Ti) is made of a corrosion resistant material, being PP-R (Polypropylene Random Copolymer).

This eliminates future internal or external corrosion issues and provides longevity.

- Less pipe roughness = 0.0070 mm (less friction head loss; smaller pumps).
- Low Thermal Conductivity (≈ 0.15 W/mK vs ≈ 384 W/mK for copper or ≈ 50 W/mK for carbon steel). Less insulation required, since the R-value of aquatherm blue pipes contributes to the overall R-value, in accordance to the NCC Section J requirements.
- Recyclable material.
- Light in weight (density = 1,000 kg/m³); 8x lighter than steel, 9x lighter than copper.

This might save you hiring a crane to lift the pre-insulated pipes.

- Less linear expansion (≈ 0.035 mm/mK).

Since the thermal expansion forces of aquatherm blue pipe Ti are less than for pre-insulated metal pipes, for in ground aquatherm blue pipe Ti pipework, **no thrust blocks are required.**

- Very good chemical resistance.
- High impact strength and ring stiffness.

- Easy processing (socket fusion and butt welding).

No heavy welding gas cylinders or open flame insurance required, as with the welding of steel or copper pipes.

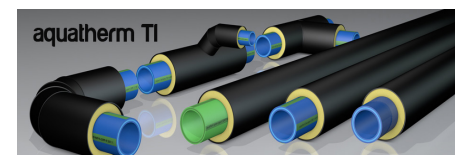
The aquatherm blue pipe Ti system uses aquatherm blue pipe Ti Insulation sockets to join every fitting-pipe and pipe-pipe connection. The Insulated Sockets come with rigid prefabricated PUR foam elements. No on-site mixing of the correct quantities of foam chemicals is required. Mixing the correct foam chemicals can be difficult at high ambient temperatures, especially under Australian weather conditions.

Using the aquatherm blue pipe Ti Insulation sockets saves the contractor labour time.

Aquatherm Australia Pty Limited supplied the approx. 1km of L= 5.8mtr. and L= 11.6 mtr. Ø32-Ø160 aquatherm blue pipe Ti pipes and fittings, via a 40' EX Germany sea freight container, directly on site. Free training, welding tools and site support were provided by Aquatherm technicians.



Woodleigh School Homestead



aquatherm blue pipe Ti is a pre-insulated pipe system for district heating and cooling, made of a corrosion resistant material, being PP-R.



ASKIN® is a leading manufacturer and installer of insulated architectural facade systems, roofing systems, and temperature controlled facilities in Australasia. We embrace a customer first approach in delivering sustainable lifetime value. With a network of 12 sites throughout Australia and New Zealand, ASKIN®'s vast experience has been built upon a strong foundation dating back to 1964. ASKIN®'s culture of customer first, constant improvement, quality, and safety assurance is supported with our technical expertise and ISO 9001 accreditation. www.askin.net.au



ASSA ABLOY is the global leader in door opening solutions, dedicated to satisfying end-user needs for security, safety and convenience. Under the iconic brands such as Interlock, Lockwood, Witco and Yale, ASSA ABLOY Australia has long been developing innovative products. In the growing electromechanical security sector, the Group has a leading position in access control, identification technology, automatic doors and security. www.assaabloy.com.au



Architectural Window Systems (AWS) is one of Australia's leading suppliers of aluminium window and door systems. AWS offers an extensive range of Australian designed aluminium window and door suites for residential and commercial applications. AWS designs, tests, finishes and supplies aluminium window and door systems under the Vantage®, Elevate™ and ThermalHEART™ brands to more than 200 licensed manufactures throughout Australia. www.specifyaws.com.au



B&D Group is a leading manufacturer and supplier of doors and secure access systems serving the architectural, residential and commercial markets in Australia and New Zealand. With over 60 years of experience and part of ASX listed DuluxGroup the B&D brand is synonymous with quality, security, reliability and sets the industry standard. With manufacturing facilities across Australia, New Zealand and China, we are home to the largest range of garage door and secure access systems. www.bnd.com.au



BlueScope is a leader in the provision of high quality metallic coated and painted steel products for the building and construction sector in Australia. Our most notable brands are COLORBOND® steel and ZINCALUME® steel.

BlueScope products are now an integral part of both new and retrofit housing, commercial, and industrial projects. www.bluescopesteel.com.au



Bostik Australia is supported by a worldwide research and development resource, keeping it at the forefront with new and innovative technologies. The company is committed to providing sustainable and innovative solutions that combine technological performances, ease of use, cost effectiveness, and respect for the environment.

Bostik actively integrates green building initiatives through developing products that have minimal impact on the built and natural environment. Bostik Australia has over 100 products that meet Green Building Council Australia low VOC criteria. www.bostik.com.au



The Lights Community Centre, SA



"A non-combustable modular system that really ticked all the boxes"– Kirsty from Studio 9 Architects

City of Port Adelaide Enfield Council in partnership with the South Australian State Government wished to create a modern, sustainably managed and fit-for-purpose indoor recreation facility. The goal was to build a premier recreational venue where people from a diverse community can lead an active and healthy lifestyle and participate in a range of sport.

Studio 9 Architects were awarded the contract to design the facility, which incorporates three multi-purpose courts, two basketball courts, a cafe, office and commercial space.

Requirements

Studio 9 Architects worked in conjunction with ASKIN to specify, design and achieve all project requirements. The project required lightweight materials due to soil conditions as well as a non-combustible façade to meet the Australian Building Codes. Ensuring the panel product complied and exceeded fire and safety considerations was essential. As always, being conscious of cost played a part in determining the right building solutions. As a result, 0437p ASKIN VOLCORE® PERFORMANCE PANEL CLADDING was specified.

Studio 9 Architects, Associate Architect, Kirsty Coultas, says creating a space that was flexible in nature with a high focus on community was a very high priority for the client. "The process itself was excellent with both the community,

council, and consultants working through the design so all in all it was an inclusive process".

Approach

ASKIN Performance Panel supplied Volcore Vivid panel in 12 shades of blues, greens, and violets with a silkline profile. The Volcore panel system is a lightweight insulated panel product with a non-combustible core, which addressed all the requirements for this project. Additional benefits of the ASKIN Panel include the ability to crank corners and that it doubled as an all in one exterior cladding and interior wall lining.

Becoming involved in the project in the early stages of design meant ASKIN could address any concerns around the fire safety of Volcore with documented testing, certifications and approvals so all those involved felt confident they were using a safe and conforming Australian building product.

Kirsty describes the process when working with ASKIN as being very collaborative. "We had conversations with the ASKIN team in the early stages of design regarding fire properties. We worked through the details and requirements and this flowed through to the construction phase".

Together ASKIN and Studio 9 Architects selected 12 shades of blues, greens and violets, all custom colours manufactured by Colorbond - BlueScope Steel. Consideration of darker and lighter colour placement, as well as the panel lengths for each elevation was required to maintain the thermal deflection of all insulated panel walls. The placement of colours was collaborated by all parties to ensure that the clients expectations were met, while ensuring the project met BlueScope Steel warranties and ASKIN's panel quality.

Darker colours in a Colorbond steel finish can reach up to a maximum of 100 degrees in certain regions of Australia, whereas lighter shades will only reach a maximum of 60 degrees

on the hottest day.

ASKIN's Volcore core material is non-combustible with the added benefits of acoustic properties and is thermally efficient with R-Values that far exceed the NCC minimum requirements. ASKIN Panels continuous insulation properties will ensure the centre stays cool during summer and warmer in the winter months.

Kirsty explains with the recent issues here and abroad, in regards to fire and non-combustibility, we were really conscious of going with something that had the right certifications.

"We began investigating products in the early stages of the project and ASKIN's Volcore with a mineral wool core, ticked all the boxes," she says.

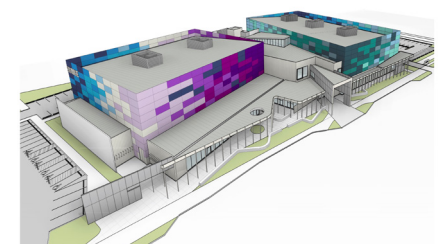
Result

The result is a modern, cutting edge design for the City of Port Adelaide Enfield, focusing on flexibility and functionality, providing a multi-use space for the local community.

"Working with ASKIN was fantastic and we are very happy with the outcome," says Kirsty.



All custom colours manufactured by Colorbond - BlueScope Steel



The new facility includes three multi-purpose courts, two basketball courts, a cafe, office and commercial space



0428p ASKIN VOLCORE performance panel roofing; 0428p ASKIN XFLAM performance panel roofing
0437p ASKIN VOLCORE performance cladding; 0437p ASKIN XFLAM performance panel cladding
0762p ASKIN XFLAM performance panels in cool rooms

www.askin.net.au

Peppers Silo Hotel, TAS



Located in Launceston, Tasmania, the redevelopment of the Kings Wharf grain silos and wool store saw the iconic 1960s structure transformed into a 9-storey, 108-room hotel with a bar, café, restaurant, gym, day spa and conference rooms.

The inherent nature of hotels with their infrequent occupancy, often leads them to be known for their stuffy rooms, sometimes with no operable windows or windows that are restricted. They run air-conditioning constantly at high expense and often at an uncomfortable temperature for guests. The incorporation of the AWS Ventient™ into the redevelopment design of the hotel ensured constant fresh air into the rooms.

AWS Ventient™ is an integrated trickle ventilation system that contributes to natural ventilation of the building enclosure without requiring any windows or doors to be opened. Its integration into the sub-head of the window or door system means no additional penetrations in the building envelope are required to install the system, and the days of infrequent ventilation are now gone.

This innovative unit allows passive flow of natural ventilation in and out of the building based on the outside air temperature, balancing the need to maintain good insulation within the

hotel with the desire to have clean, healthy, liveable spaces. Temperature controlled passive ventilation minimises condensation build-up, delivering healthier environments for guests, improved sustainability and reduced environmental impact for the hotel.



Peppers Silo penthouse

The AWS Ventient™ sits in the sub-head and automatically opens and closes based on ambient temperature changes. It also encompasses a manual override function should the occupant require more or less ventilation. A screen to guard against insects, rodents and embers is part of the design, as well as an air filter for dust and pollen.

Suitable applications for the AWS Ventient™ include:

- Residential & Accommodation
- Commercial & Office
- Health & Aged Care
- Schools & Institutions

As we have two significantly different climates in Australia, there are two

Ventient™ units.

A cool to temperate climate is when the unit closes by two-thirds as the outdoor air passing through cools to 12°C, reducing airflow and the risk of cold drafts whilst ensuring continued background ventilation when the building is artificially heated. For example, the ventilation will be open 33% if the temperature is 12°C. The ventilation will be open 100% if the temperature is 20°C.

A tropical climate is when the unit closes fully as the outdoor air temperature passing through the device rises to 26°C, thus reducing the risk of warm humid air entering the building and causing condensation when the interior is likely to be artificially cooled. For example, the ventilation will be open 0% if the temperature is 26°C. The ventilation will be open 100% if the temperature is 20°C. The AWS Ventient™ is compatible with a full range of AWS commercial window and door systems.

Architect: Artas Architects

AWS Fabricator: Glass Supplies

Builder: JMC Property Group

Structural Engineer: Rare Innovation

Mechanical, Electrical, Fire and Communications Engineering:

Engineering Solutions Tasmania

Photographer: Dave Groves



Peppers Silo hotel



0451p AWS aluminium windows and doors

www.awsaustralia.com.au/specifyaws

The Bend Motorsport Park, SA



Fitting Door

The Bend Motorsport Park is one of the most significant developments in Australian motorsport history. A state of the art, world-class motorsport facility, The Bend delivers an exhilarating experience for competitors, enthusiasts and spectators alike.

Developed and primarily funded by the Peregrine Corporation, South Australia's largest private company, construction started on The Bend in early 2016 with the main motor racing circuit completed in April 2018 in time for the first events. Additional precincts will continue to open in 2019.

The task

The delivery of 83 Rolling Shutter Doors for the Pit Lane and associated services areas that were linked to a central location that would allow remote operation of the doors. The southern side of the welcome centre presented an installation clearance issue with a series of cable trays running across each opening within close proximity to the header area.



Smart Phone Control

This area needed to house the roller door bundle and did not allow required back space to enable fitment of the specified product. A review of the existing structure and required modification revealed that the precast

panels structure, having been formed with cut outs in set locations to mount both trays and doors made modification unreasonably expensive.

The solution

Working closely with the electrical trades contractor and through on site management, B&D Group ascertained that a minor manual adjustment of the cable trays already in situ coupled with amending the specification to an alternative B&D roller door product in the R2W Traditional Wideline, would be able to accommodate the door install.

The smaller bundle diameter and alternative profile of the R2W meant that we were able to fit in the door between the cable tray negating the financial impact of major alterations while maintaining maximum clearance.

Forward thinking

The B&D Control-A-Door Power Drive (CADPD) opener was a smart choice for this project given the add-on ability of future integration of smart phone control security for each of the openings.



The Bend Motorsport Park



Wave House, VIC



Roofing is made from COLORBOND® steel in Stramit Speed Deck Ultra® profile, in the colour Ironstone®, delineating the planes and providing a colour contrast.

A fluid house design by architect Tim Hill is causing ripples in the Melbourne suburb of Kensington. The Wave House features a façade that undulates and bends, creating spaces for north-facing pocket gardens and a rear produce garden. Punctuated by window hoods made from weathering steel, and a roof clad with COLORBOND® steel in Stramit Speed Deck Ultra®, such spatial dexterity would have been challenging with traditional thinking and materials.

Approach

The steel cladding was customised into a triangular profile that Tandem designed and had steel fabricators Design Sheet Metal (DSM) roll-form into shape. The resulting profile was designed to achieve the precise visual ratio of ribs to flat surface. "We went through a whole prototyping process to get the optimum pleat size with three or four prototypes," Hill says. "We eventually settled on a 125x125mm equilateral triangle. It was amazing that even a minor variation in size either direction – up to 150mm or down to 100mm – changed the building's whole appearance. "I like it when others form their own relationship and find their own meaning in a shape, but it has to engage people in a friendly way." Tim Hill, Architect (TANDEM Design Studio).

Benefit

Hill says the house's energy efficiency is "Largely about the fundamentals of aspect and volume. That was

something of a surprise to me because we're often working with these long and skinny, inner city houses where you struggle with energy ratings because of such large surface area to volume. Ours was terrific to begin with," Hill says. "The other remarkable benefit of the pleated profile is its stiffness," he adds. "My previous house was a pole-and-frame structure made of timber that used to wobble. This one is just really rock-solid rigid. Other subtle qualities emerged almost coincidentally as the consequence of this shape and particular ribbed profile that forms an ever-changing display of striations across the surface with sun movement."

"Here, the façade pleats for example were literally a connection back to a simple way of wrapping the building up without creating too many construction problems." Tim Hill, Architect (TANDEM Design Studio)

Result

The walls are clad entirely from COLORBOND® Metallic steel, its flexibility helped Tim create an inspiring response to a narrow, tapered site. This was possible because it was not a house where creating space was the end goal.

The house's walls are entirely covered in cladding made from COLORBOND®

Metallic steel in a custom-made profile, in the colour Galactic®. Hill says the metallic colour Galactic® was chosen for its pearlescent finish that responds with endless subtlety to prevailing conditions and light. Roofing, meanwhile, is made from COLORBOND® steel in Stramit Speed Deck Ultra® profile, in the colour Ironstone®, delineating the planes and providing a colour contrast.

Lightweight in feel and appearance, a curvilinear steel shell made from COLORBOND® Metallic steel contributes structure, rhythm and spatial delight.



An elegantly tailored shell made from broad-ribbed, pearlescent COLORBOND® Metallic steel produces a stellar result in downtown, inner-urban Melbourne.

Architects: Tim Hill, TANDEM Design Studio



With an envelope as light-catcher and shadow play, the surface of the house is animated by its wrap-around envelope.



0423p GALVSPAN steel purlins and girts in structural steelwork
0423p COLORBOND® steel and ZINCALUME® steel in roofing
0436p COLORBOND® steel and ZINCALUME® steel in cladding

www.bluescope.com

Hedgeley Malvern East, VIC



Located within the exclusive, leafy Melbourne suburb of Malvern East, the Hedgeley apartment development by Little Projects offers sophisticated living and lifestyle amenities like no other with an abundance of quality and style throughout. For each of the 1, 2, 3 & 4 bedroom luxury apartments, 14mm engineered timber flooring by Embelton was selected and glued directly to the 200mm concrete substrate, providing a premium feel underfoot and eliminating issues commonly associated with conventional floating floor installations.

Requirement

Working with the Embelton installation and project management teams, a solution was devised to reduce the overall time and cost of installing the timber floor all the while providing prospective owners with an effective sound abatement solution. The answer was Bostik's innovative Ultraset® 3 in 1 flooring adhesive that has been specially developed to save installers and developers time and money on commercial projects by incorporating an adhesive, moisture control layer and acoustic membrane into the one easy to use product.

Approach

To address the needs and expectations of all parties, Bostik worked in close collaboration with Embelton, Melbourne based acoustic consultants Renzo Tonin & Associates and head contractor Hutchinson's to develop a proposal inclusive of onsite impact noise testing, comprehensive costings and scheduling benefits in an effort to present a viable solution and alternative to conventional, labour intensive dual bond timber flooring incorporating a separate acoustic treatment.

Two 1m x 1m samples of 14mm Timber bonded with Bostik Ultraset® 3 in 1 were installed on the bare concrete slab in accordance with the relevant ISO Standards. A tapping machine was then placed on each sample to determine the impact sound insulation of the proposed system with the noise levels recorded in the receiver room below

using 3 microphone sweeps so as to measure the average noise level and achieve the unbiased results requested by the construction and development teams.

Results

Readings obtained by Renzo Tonin confirmed an impact sound insulation result of 41 dB inclusive of a 13mm standard plasterboard suspended ceiling beneath the slab with no insulation, significantly exceeding the BCA minimum requirement of 62 dB for floors separating dwellings.



Onsite impact sound testing

Benefits

The decision to specify and install Bostik Ultraset® 3 in 1 saw stakeholders benefit in a multitude of ways. The flooring contractors realised a 50% increase in daily productivity due to not requiring a separate moisture barrier and acoustic matting in addition to the patented Thickness Control™ Spacers incorporated into the adhesive maintaining a uniform applied thickness even when walking on the timber during the installation process. These unique advantages presented the flooring supplier and installation team the best opportunity to save valuable time and money.

These efficiencies flowed directly onto the builder, supporting trades and ultimately, the developer. Reducing the time required to install areas of engineered timber flooring subsequently allowed follow on trades to commence earlier and ultimately deliver an installation within budget, ahead of schedule all the while guaranteeing a comfortable environment.

Architects: SJB (architecture and interiors) and Adeb Architects

Builder: Hutchinson

Developer: Little projects

Client: Embelton



Hedgeley apartment living area



"NATSPEC fulfils a important role in the building and construction industry.

NATSPEC not only assists those in the supply chain to conduct their day to day activities, but also contributes to the standardisation of practices across the industry to produce better building quality outcomes. Consult Australia is proud of our founding membership of NATSPEC and highly recommends NATSPEC documents to our industry."

Nicola Grayson, Chief Executive Officer, Consult Australia



Breezway is the leading Australian manufacturer of high performance, energy rated, Altair Louvre Windows. Fully compliant with AS 2047, Altair Louvres are designed to open twice as wide as other window types to provide maximum light and ventilation into sustainable buildings. Altair Louvres are cyclone rated and automation is available with the award winning Altair Powerlouvre louvre window system. Extra strength and safety can also be provided to windows at height when using the Stronghold System. www.breezway.com.au



Pasco specialises in waterproofing and sealant products. With 30 years' experience, we can advise on any waterproofing or sealant application. With local and overseas suppliers, we offer a comprehensive product range for every situation. We are Victorian distributors for Latham Architectural Flooring products, including stair nosings, entry mats, and expansion joints. Pasco's range includes the award-winning Buzon Pedestal. Designed and manufactured in Belgium, it allows construction of paved and timber floors on balconies, podiums, and roof gardens. www.pasco.net.au



Capral Aluminium was established in 1936 and is Australia's largest manufacturer and distributor of aluminium profiles. Our comprehensive range of Commercial Residential Security and Industrial products has an enviable reputation for quality, style, and high performance. As a local systems designer and NATA approved tested authority with innovative R&D capabilities, we are well positioned to take advantage of changing building regulations in Australia and technically support our brands including ARTISAN, Urban, Futureline, Amplimesh, Intrudaguard, and AGS. www.capral.com.au



Con-form Group is an energetic team dedicated to providing Australian designed and value engineered products that are quick to assemble, lightweight, and affordable platform systems with a 20 year warranty standard. Con-form's growing series of structurally unique aluminium products are creating a new dimension in the approach to surface mounted platforms, and are designed to eliminate the need for any cutting or welding, providing excellent flexibility and error free assembly, unlike traditional engineering methods. www.con-formgroup.com.au



CS Group started out in 1986 manufacturing CS Cavity Sliders. Our mission is to engineer and manufacture the best and most innovative door solutions. Over the years we have continued to rapidly develop new products, including track systems, wardrobe sliders, aluminium door leaves, and most recently, automated cavity sliders. www.cavitysliders.com.au



Mother Teresa Catholic College, Baldivis, WA



Breezway Louvres allow air to circulate internally when doors are closed

Parry and Rosenthal Architects won a limited design competition for the Mother Teresa Catholic College located in Baldivis, Western Australia. The new K-12 campus includes a Primary School, Church and Senior School on a greenfield site.

The brief for the project consisted of creating a new primary and secondary school with a strong dynamic presence in the developing suburb that will serve the church and the wider community while being a 21st century teaching and learning centre.

A detailed master plan was undertaken by Parry and Rosenthal Architects for the longevity of the school. Through clever design principals the campus was constructed around a central community court which forms the heart of the School, with facilities and learning spaces curved around its edges, creating a simple and clear order to the campus. All learning areas are orientated to optimise passive solar effects and capture breezes to help minimise overall energy use.

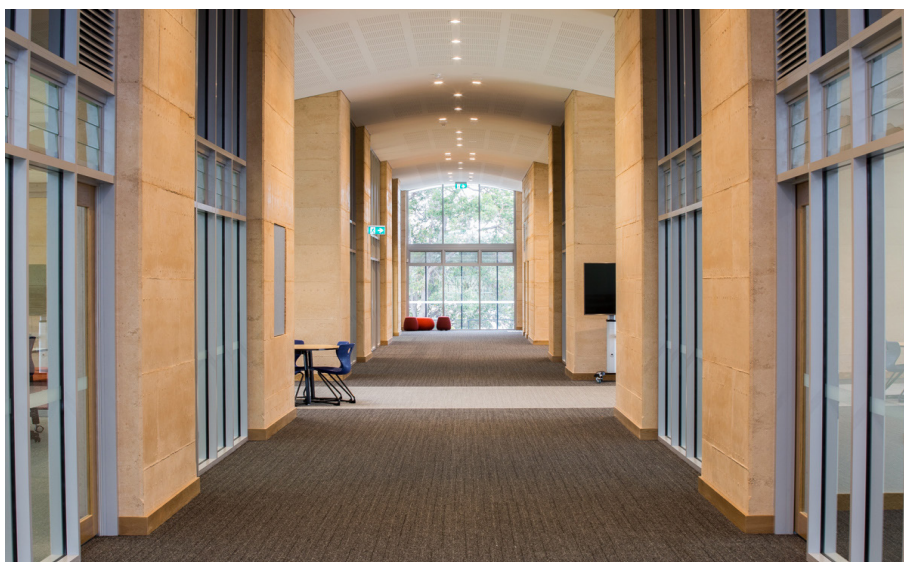
Leon Slattery from Parry and Rosenthal Architects stated that "Breezway Louvre Windows were specified into this project due to their unique aesthetic design where blades open wide to effectively capture natural breezes and help reduce energy usage".

Manual and powered Altair Louvre Windows with the Stronghold System were incorporated into the classrooms,

multi-purpose and administration building. By utilising Altair Powerlouvre Windows up high, hot air can be flushed out and replaced with cool, refreshing breezes that can help stimulate the minds of those in the learning environment. Altair Louvres at 1200mm widths with the Stronghold System provide strength and safety along with clear, unobstructed views so students and visitors can always maintain a connection with the outdoors throughout the day. And when closed, Breezway Louvres seal tightly to ensure protection from the elements and a barrier to outdoor noise.

The first stage of the secondary school campus was the recipient of the 2018 Master Builders Award for Excellence, for Best Education Building.

The primary school campus was the recipient of the 2016 AIA Hillson Beasley Award for Educational Architecture; The most outstanding work of educational architecture in Western Australia, as well as the 2014 Australian Institute of Architects Commendation, Category: Public Architecture, and the 2014 Association for Learning Environments (formerly CEFPI) Commendation, Category: New Construction: Entire New School.



Hallway inside Mother Teresa College with Breezway Louvre Windows



Breezway Powerlouvers open wide to allow natural light and ventilation



Swiss Grand Hotel Bondi Beach, NSW



When luxury meets durability

The Swiss Grand Hotel at Bondi Beach was transformed into a luxury residential and commercial precinct, designed by Koichi Takada Architects that required the lightweight, durable Buzon Pedestal support systems for the external paving and decking.

Pasco's NSW Distributor, Gerard Jorna of Ausdrain, was contacted by the builder of the precinct - now called The Pacific - prior to the commencement of works on the penthouse to provide a lightweight, long-term and durable support system for the external paving and decking areas. Ausdrain was able to offer the Award Winning, Buzon Pedestal to support the paving and decking on the rooftop and balconies of the penthouse.

"There was quite a large degree of fall on the slab to ensure drainage efficiency," Gerard stated. Supplied by Pasco Construction Solutions, a combination of Buzon DPH2 up to DPH8 were used to accommodate for the height differences, which ranged from 25mm to 515mm. The patented, PH5 slope corrector provided the required adjustment for the fall, resulting in a perfectly level floor finish.

The Product

While the 600mm x 600mm pavers are considerably heavy, the Buzon pedestals provided peace of mind as the high load-bearing capability of the system and sufficient corner support for the pavers ensure long-term structural viability. This is of particular importance as the outdoor spaces will often be used for entertaining a large number of guests.

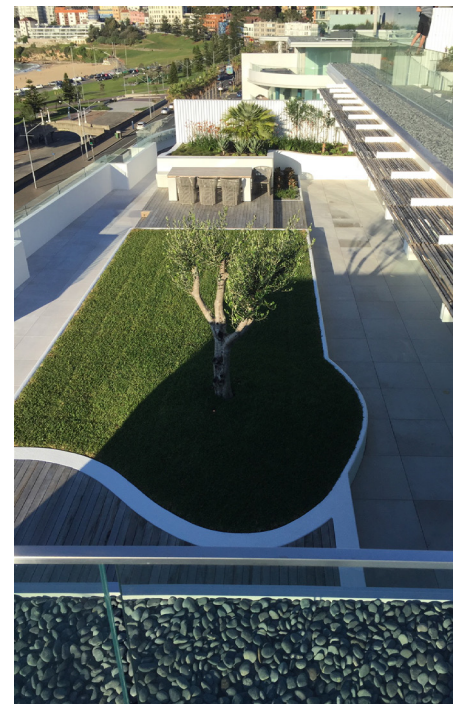
Installation and finishing touches

A combination of decking and paving on the terrace and rooftop of the penthouse contrasts with a central turfed area to create an elevated urban oasis with stunning, panoramic views of Bondi Beach.

As the fit-out of the penthouse was done post-construction, most materials had to be carried by hand in the lift to the penthouse. This was combated by using individual lightweight boxes of Buzon Pedestals to be easily transported to the rooftop for installation.



Buzon Pedestal support system implementation



Completed Penthouse



Overview of the terrace and rooftop



Kunzea Estate Wagga Wagga, NSW



and widths of up to 2500mm per panel.

- Custom fixed light windows using Capral 425 narrowline framing for flexibility in design.

All embedded into the square set white walls creating a sharp crisp finish to compliment the clean modern lines of the internal décor.



The Kunzea Estate project was planned and executed down to the finest detail, with the clients brief asking for their new family home to be an elegant, yet practical place to live. Everywhere you look there are powerful design features brought on by the use of key materials which are explored below.

The façade of the home is one that captures the attention of visitors as they drive up the long winding driveway. A mixture of glass, render, and lightweight aluminium cladding all contribute to its pronounced position, sitting on the undulating rocky surrounds. The glazing in the home has enabled a softening of the overall presence with transparent balcony's and glazed outdoor retreats. The aluminium window and door products were selected not only for how they would look aesthetically, but also how they would cope with everyday household function and use.

A family with young children accommodate this property, and 'little hands' were considered when window hardware options were suggested. Automation was also a critical part of the brief, so electric awning winders featuring rain sensors enable the windows to be controlled from a central point in each room; allowing the occupants to tailor the airflow, as well as combating the changing weather and climate conditions. The colours pallet was chosen to suit the natural landscape, allowing the house to blend into its surroundings but still stand as a feature in its landscape setting itself aside from its neighbours. The contrast

between earthy colourbond monument window frames and decorative clad timber-look aluminium cladding, is just one example of how this has been achieved. The Decowood Natural Blackbutt woodgrain finish is also featured on the extensive deck which helps anchor the house to the land.

Capral Aluminium Architectural Glazing Systems (AGS) feature exclusively through the property. These products help to create transparency on every face of the building whilst providing thermal comfort and light drenched family rooms. Feature products include:

- Artisan folding doors, - featuring EMT™ Effortless Motion Technology encompassing 'Smart Hinge' and 'Easy Gliding' Channel.
- Futureline thermal break awnings, - thermally improved framing produced with recycled aluminium content.
- 900 series sliding doors, - Capral's flagship sliding/stacking door capable of panel heights of 3000mm

Decorated with modern new furniture, with a classy touch of old classical pieces, the home centres around the light filled living and dining spaces; which flow seamlessly onto a marvellous expanded outdoor living space where sunsets are enjoyed every evening overlooking the Wagga skyline, mountains and plains. It is not until you step away from the house and take a breath, do you really notice the homes detailed planning and specified product selection that makes this a house that will not age, but grow with it's surroundings.

Architect: Rivplan Design
Builder: Robertson Constructions
Design: Rivplan Design
Fabricator: All Glass Wagga
Photographer: Robertson Constructions



St Mary's Catholic College Rockhampton, QLD



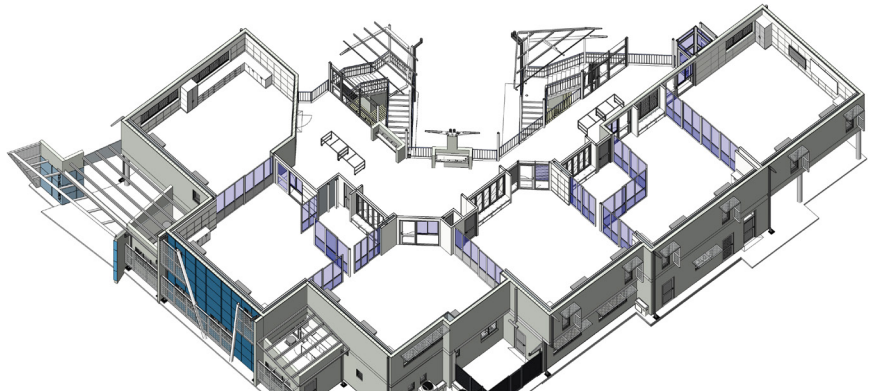
The CS Overtaking New Yorker door system installed at St Mary's Catholic College in Rockhampton is the latest example of how CS Cavity Sliders were able to design and supply an effective solution for the education market. With the inclusion of whiteboard and pinboard panels in combination with traditional glass, the overtaking sliding doors create a valuable tool in modern flexible education. The doors not only serve the purpose of dividing the area into two separate classrooms, they can be used as flexible teaching tools as well.

Working with the architect Tony Madden, similar designs have been successfully installed in numerous regional primary school projects. Given the oversize dimensions of the door panels in this project, they were transported to Rockhampton in kit form and assembled on site. Being used in a primary school classroom, the ease of use and safety of the cavity sliding door system are paramount. The top door track and concealed roller system provide smooth consistent operation of the doors. There are no floor tracks, meaning that there are no trip hazards when the doors are open. The leading door maintains a small protrusion from the cavity, thus eliminating pinch hazards for the hands of the door operators. The quick release carriage system allows the doors to be easily removed if repairs are required.

The continuing challenge to create open areas in limited floorspace means architects, designers, developers and builders are continually exploring options to maximise open floor areas. The flexibility and practicality of cavity sliding doors achieves this with no risk to structural strength. Floor area is retained and flow throughout spaces is dynamically enhanced. The open feeling of space is achieved through the use of full height sliding doors with no floor tracks required.

CS Cavity Sliders products are manufactured from high quality one-piece aluminium extrusions and timber

jamb. The original design has been continuously improved since 1986 and products can be infinitely configured to ensure the highest quality solution is supplied.



First floor plan showing CS Cavity Slider layout



CS NewYorker sliding doors with custom infill



CS OvertakingDoors cavity sliders in T configuration





DAMTEC is part of the KRAIBURG Group (Est. 1947), an organisation rich in tradition with over 2000 employees worldwide and an annual sales volume of approximately \$500 million. It is an internationally acknowledged and recognised manufacturer of ready-to-install products for impact sound reduction. www.damtec.com.au



Danpalon is a patented glazing snap-connection system with concealed fasteners that provides for 100% watertightness; free structural and thermal movement within a flexible system; structural properties that allow for a significantly reduced substructure; quick and easy installation; the elimination of gaskets and sealants; the elimination of fixing penetrations through the sheet; and 99.9% UV protection with the protection coating co-extruded with the sheeting, eliminating any chance of delamination. www.danpal.com.au



DCTech is 100% Australian owned and operated with over 20 years of experience supplying a range of technically advanced insulation materials and related products to the Australian construction industry. DCTech offers a clear focus on customer service through national product availability, installation and maintenance advice, a comprehensive Technical Library, and competitive pricing. DCTech is large enough to ensure quantity, yet small enough to ensure quality, and is able to offer a total system solution from foundation to roof. www.dctech.com.au



In Melbourne, Deflecta Crete Seals develops and manufactures protection products for concrete. Designed specifically to kill bacteria on and within the concrete matrix is DEFLECTA ANTIMICROBIAL®, Australia's only Government Certified and Registered product for bacteria control. Deflecta's product range also targets moisture control, hydrostatic pressure, mould, mildew, fungi, dust, and slip resistance for Industry Sectors such as Health, Food Processing, Warehousing and Manufacturing, Freezer and Chillers, Car Parks, Schools and Sports Centres, Animal Husbandry, Equine, and Kennel facilities. www.deflecta.com.au



DELTA PANELS is a 100% Australian owned and operated manufacturer of insulated panels. Its range of products includes roof, wall and patio systems, plus a wide range of accessories. The range of panels in various styles and colours has been engineered for enhanced performance in Australia's harsh environment. www.deltapanel.com.au



Dincel Construction Systems is a lightweight, 'snap together' modular formwork that is suitable for constructing virtually any type of load bearing structural wall. Architects and building designers can enjoy complete creative freedom by specifying Dincel to build straight, curved, slanted, and cantilevered concrete structures. Dincel walls are also complete waterproof, fire resistant, and can be finished in a range of external wall finishes. www.dincel.com.au



Virtuoso Apartments, West End, QLD

DAMTEC®
ACOUSTIC UNDERLAY

The Virtuoso apartments is a luxury multi-residential development by Stockwell overlooking the Brisbane river in West End, Queensland. Damtec Australasia was engaged by sub-contractors to work closely with RGD Constructions in providing a certified solution against the treatment of impact sound for this elegant development. Boasting 77 apartments, with both tiling and timber floor finishes, Damtec Australasia provided a multi-use acoustic underlay that met and exceeded the requirements specified on this project.



Tapping machine used for sound field tests

Impact Sound Field Test

Damtec Australasia can supply a wide range of acoustic underlays in varying thickness for any floor finish that requires substantial impact sound criteria. This component of apartment living is sometimes overlooked but not in the case of the Virtuoso apartments. Conclusive impact sound field tests indicated that Damtec Multi was the most applicable product that provided the necessary reduction of impact sound, whilst meeting a host of other criteria.

The Product

Damtec Multi is a generic and multi-purpose underlay for the treatment of impact noise that provides a high level of sound reduction performance under most flooring applications. Damtec Multi is manufactured from 100% recycled rubber only granules bonded with a PU Elastomer bonding agent. All Damtec products are eco-friendly and are produced using first grade, high quality, recycled rubber from the automotive

and medical industries which can be recycled again. Damtec Multi also boasts outstanding compressive strength and load-bearing performance, which doesn't result in compromised impact sound performance.

Execution

Damtec Australasia supplied close to 5000m² of Damtec Multi for the Virtuoso apartments which spanned across 7 storeys of luxurious apartment living. Residents of this building can now have peace of mind knowing

that the above apartment's floor impact sound transmission has been minimised for comfortable serene living. The DAMTEC way of living.

Client: Stockwell

Architect: MODE Design Pty Ltd

Builder: RGD Constructions Pty Ltd

Acoustic Engineer: Palmer Acoustics (Australia) Pty Ltd



Installation of the DAMTEC multi acoustic underlay



View of the Virtuoso luxury apartments

Curtin Central Bus Interchange, WA



Central canopy with a striking three dimensional twisted form

The \$15 million Curtin Central Bus Interchange is a key component of Curtin University's Greater Curtin Master Plan. It was completed earlier this year, providing a principal public transport hub within Curtin's new innovation precinct, Exchange. The facility, designed by Coniglio Ainsworth Architects, was a finalist in the 2016 Planning Institute of Australia (PIA) WA Awards for Planning Excellence and represents a highly successful collaboration between Curtin University, the Public Transport Authority of Western Australia, the consultant team and the building contractors.

Curtin Central plays a key role in introducing increased public volume into the University precinct to support the envisioned 52 week commercial/

retail economy of the surrounding services and amenities. The facility aims to encourage an increased uptake of public transport and maximise bus throughput and subsequent pedestrian traffic. It is projected that the interchange will accommodate approximately 130 bus services in the peak hour and in excess of 20,000 daily visitors when at full capacity. For the PTA, Curtin Central is an important asset that assists in future proofing public transport transit planning for the south-east region of Western Australia. For the University, the facility enhances campus accessibility and provides an improved day-to-day experience for students, staff and the broader community.

Application

Striking blue canopies using a customised Danpalon roofing system are a key feature of the complex, including 16 fluidly-shaped translucent shelter areas and one remarkable central canopy incorporating unique 3-dimensional geometry. The Danpalon panels were specially manufactured with an anti-glare treatment on the top surface and a high performance lacquer coating on the bottom surface (giving the system extra surface protection and to allow graffiti removal if necessary).

Outcome

The system was self-supporting over spans of almost 6 metres, with careful specification and detailing ensuring clean structural connections, concealed roof drainage and a completely flat appearance on top of the roof. The central canopy is curved at each end and twists across its width, a stunning architectural achievement in which no intermediate steel framing was required



The Danpalon canopies are illuminated at night with LEDs around the perimeter

The project was built by Cooper & Oxley, with the Danpalon installed by specialist contractor Roof Eze. Advanced Architectural Products co-ordinated the supply of the Danpalon system, managing the comprehensive fabrication process required to achieve the unique project geometry.



Self-supporting Danpalon canopies with carefully fabricated rounded edges, a polycarbonate roof and façade solution for modern architectural daylighting



0429p DANPALON roof glazing
0434p DANPALON translucent facade cladding

www.danpal.com.au

Kawana Waters - Car Park Buddina, QLD



History

DEFLECTA® manufactures specialised products for concrete/cementitious based surfaces to assist in bacterial and moisture control, densifying and sealing concrete matrix and surface. DEFLECTA® successfully completed works on its first commercial car park in 2004 and since then has continuously been developing on improved hydrophobic densifier treatments specialising in car parks for clients and patrons.

The new development of DEFLECTA TOPEL® - A HYDROPHOBIC CONCRETE SURFACE SEALER entered the market in 2017 to provide clients with a product that increases both density and surface hardness and is hydrophobic – providing increased wear and slip resistance making it suitable not only for car parks, but for stairs, landings, driveways, paving and ramps, but not limited to.

Project

DEFLECTA TOPEL® was applied to the Kawana Waters multi-level car park complex, ground, mezzanine, roof top and ramps. The Client, MIRVAC, was requiring a product to be used outdoors, with a hydrophobic surface sealer, dust proofing benefits and a

product to increase both density and concrete surface hardness. In addition, the product provided MIRVAC with increased wear and slip resistance, an application that can be applied to both interior or exterior concrete slabs in the car park and ramp areas, decreases permeability to liquids and eliminates efflorescence. DEFLECTA® carried out their application works on the \$6.5million three stage building program project for Buildcorp, while using DEFLECTA® Approved Applicators 'Concrete Floor Coatings', based in Brisbane who specialise in this field of work, successfully applied DEFLECTA TOPEL® to the concrete sub-floor, including 956 car park spaces.



Application of DEFLECTA TOPEL® being applied to the roof top Kawana Waters car park area

The weather conditions, when applying DEFLECTA TOPEL® to the roof top car park area, became quite hot and windy. Under these conditions, Concrete Floor Coatings, were continuously hydrating the surface area allowing for product absorption. As the weather conditions increased through the day, the project was put on hold until the wind subsided enough, to prevent wasted material for the Client.



The DEFLECTA TOPEL® product was poured into 200Lt drums ready for the spray application

DEFLECTA TOPEL® Test Results and Certificates

- Slip Resistance Classification P4 - Wet Pendulum Test
- Water Contact Angle Classification - Super Hydrophobic > than 120°
- HACCP certified

Importance

Prior to the application of DEFLECTA TOPEL® and line marking, the area required a power wash and scrub to remove any stains from the concrete sub-floor.

Line marking was applied to the concrete surface prior to the application of DEFLECTA TOPEL® to maximise the longevity of the markings and to ensure the concrete surface had sufficient surface preparation. Regular cleaning increased the protection of the line marking and DEFLECTA TOPEL®



Concrete Floor Coatings – DEFLECTA® Approved Applicators applying DEFLECTA TOPEL® to the Kawana Waters car park area.



New Grosvenor Shade Structure in Moranbah, QLD



As Moranbah in Central Queensland has evolved from a mining base into a thriving regional hub, the Isaac Regional Council has continued to expand the facilities and services provided to the residents, such as the recently completed New Grosvenor Shade Structure at the Council's community outdoor entertainment facility.

To ensure that the project delivered maximum benefit to the community a number of specific project criteria were established. Chris Pritchett from CP-Architects in conjunction with the planning department from the Isaac Regional Council designed a roof that was under-slung from the structural framework. This created a challenge to devise a suitable support system that was both functional and aesthetically pleasing.

Project Criteria

The project criteria required that the finished roof offer insulation against the weather extremes experienced in the region, while also providing acoustic properties that enhanced the entertainment enjoyment of concert goers.

Approach

Working closely with the Project Managers and Hutchinson Builders in conjunction with Stramit Roofing, Delta Panels identified a specific insulated roofing panel, DeltaTrimTrim, which would satisfy all the conditions outlined in the project brief. After further consultation with all those involved in the project a suitable fixing system was agreed upon to cater for the under-slung fastening. DeltaTrimTrim insulated roof, has trapezoid shaped rollformed top and bottom skins laminated to an insulated core which produces long spanning capacity coupled with high thermal properties. It was decided to supply the panels in one continuous length to eliminate the need for any end-to-end overlapping joints. Thereby meeting the project brief of an aesthetically pleasing finish.

Project Requirements

Being an outdoor facility, the New Grosvenor Shade Structure needed a roof that offers year-round all-weather performance therefore DeltaTrimTrim was selected as the thermal properties achieved with the bonded insulated core not only satisfied the spanning requirements but offered the required thermal performance. Beneath the Shade Structure is an amphitheater entertainment area with a fully functioning stage area, which is also a designated assembly point. It was therefore necessary for Delta Panels to provide testing certificates that certified that the DeltaTrimTrim Insulated roofing panels conform to all Fire Certification standards.

The use of the roll-formed trapezoid skins as an underneath ceiling of the DeltaTrimTrim panels helps to dissipate the sound waves and decrease the bounce-back effect a shiny smooth ceiling would produce. The enhanced acoustic performance of the roof adds to the overall experience of those attending musical performances.

Logistic for a remote location needing to be overcome

With Moranbah being located over 1000kms from our manufacturing facility, Delta Panels had to utilise the accumulated skills of our despatch team to ensure that the 15 metre long panels arrived to the site on time and in perfect condition. The packaging of

the panels was important to eliminate any transport damage, the use of extendable trailers were required as the panel lengths exceed the normal trailers legal capacity. Reed Plumbing Supplies whose team installed the panels, were impressed with the condition of the panels and the ease of the overall installation.

Successful project completion

The completed New Grosvenor Shade Structure has attracted wide spread praise, The project is being nominated for a North Queensland design award. The client Isaac Regional Council has a highly functional community amphitheater and are "extremely happy with the final product" and expressed their thanks personally to all concerned. Hutchinson Builders have expressed their appreciation to all the contributors on this project saying "the manner in which we were able to work through all project related issues and the final result is a testament to the efforts of all participants in the project". Delta Panels is proud to be part of this successful project team.



The completed shade structure covering the Amphitheatre



Rural Fire Shelter, NSW



With 40 years' experience in construction, Greg Woon knows a thing or two about building. Now, having used Dincel Structural Walling to construct a fire shelter on his family's rural property, he also knows no other construction system equals the many benefits Dincel offers.

Located in the picturesque Yarramalong Valley, as volunteer firefighters with the Rural Fire Service, Greg, his son and his daughter are keenly aware that even heaven can turn hellish in Australia's cruel bushfire seasons. The Woon's knew it was wise to construct a fire shelter near the family home, turning to Dincel after considering various construction options.

"For a start we needed a four-hour fire rated underground structure and Dincel walling has been tested by the CSIRO and shown to provide four hours fire resistance, so it certainly met that safety requirement," Greg said.

With the property's remote location and the shelter being built into the hillside, fire resistance was not the only benefit made by Dincel Structural Walling.

"Two big issues everyone faces in building out here are getting tradespeople and getting materials to site," Greg explained. "Dincel resolved both those issues – and more.

"With the lightweight Dincel panels you don't need special cranes, manual handling is easy, if you want to trim them on site it's simple, and you don't need particular tradespeople to put the steel in because it's child's play.

"They also have an excellent installation guide, so once you study that it's very simple to get the panels up and all you need is to correctly brace the walls," he said. "With the fire shelter, we actually poured the walls and the roof in one go, so we didn't need to get a pump in at different stages; apart from doing the base slab and the starter bars out of that, the structure was all done in one straight pour. "But with Dincel we had a completely positive construction

method; in one go you've got your fire rating and waterproofing, it cuts out a whole lot of trades including brickies, it's quicker, it's simpler, and the surface you're left with gives you unlimited possibilities for finishes in my view."

Eventually building not only the fire shelter but also a pool house, retaining wall and pond with Dincel Structural Walling, Greg then utilised a number of different finishes on the panels with extremely pleasing results.

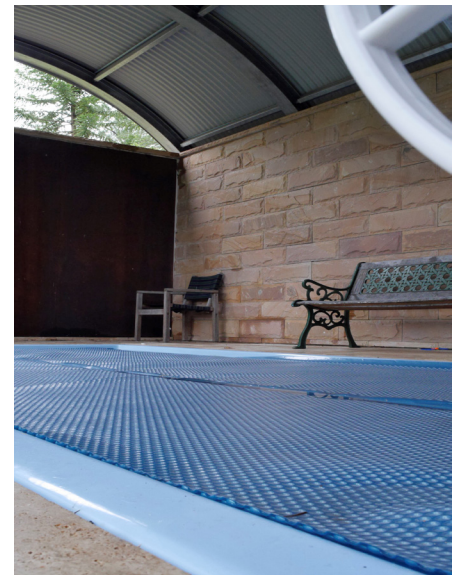
On the fire shelter, external walls were clad with 125mm thick sandstone blocks and internal walls clad either with slate or native teak and in some areas simply painted. On the pool house, external and internal walls were clad variously with the sandstone blocks and 1/8" thick sheets of eathing steel. The retaining wall and pond were also clad with sandstone.

"With the teak walls it was just a matter of dynabolting battens onto the wall and putting the timber up," Greg said. "And with the sandstone, slate and big sheets of weathering steel, we used one glue for them all, so it was very simple, and we've had zero failures of any of the surfaces we've adhered.

"From Dincel & Associates engineers drawing up the structural designs, through to support and advice on product use and finishes, Dincel were

unbelievably helpful; it's not just the product that makes a project much easier."

Having worked on many major projects throughout his career in construction - including mining and energy projects in remote areas where the lightweight Dincel panels would have proved so beneficial in terms of transport and labour costs – Greg believes Dincel Structural Walling is a landmark advance in building technology.





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AIR CONDITIONING



"As one of the earlier members of NATSPEC, the Air Conditioning and Mechanical Contractors' Association (AMCA) have long recognised and supported NATSPEC's vision to improve the construction quality and productivity of the built environment, through leadership of information. Whether you are a home builder, local government, commercial contractor, or consultant, the range of products, training, and other resources available through this not-for-profit organisation is extensive and up to date.

We congratulate NATSPEC the organisation and all of its staff and industry supporters for its work and ongoing success."

Sumit Oberoi, National Executive Officer, AMCA

DTAC®

TACTILES, STAIR TREADS
& EDGING SOLUTIONS

DTAC is an Australian company with over twelve years' experience in design and manufacturing excellence, all backed by industry leading support. DTAC comprises a specialist team of professionals that prides itself on offering beautiful, BCA compliant, architectural tactile ground surface indicators and stair and joinery edging products. DTAC's range also includes urban landscape edge protection and more. DTAC's unequalled attention to detail enables architects, designers, and builders to make the right choice for aesthetic and functional conformance in every project. www.dtac.com.au

Dulux®

DuluxGroup is an Australian publicly listed company. The company has been involved with the manufacture and marketing of paint and related systems in Australia since 1918, and is the largest manufacturer of decorative paint products in Australia. DuluxGroup is the manufacturer of iconic Australian brands which consists of Dulux, Selley's, Yates and Cabot's, Feast Watson, Intergrain, and Toby. DuluxGroup is also Australia's largest manufacturer and marketer of surface coatings with well-known brands such as Dulux Decorative, Dulux Protective Coatings, Dulux Powder Coatings, Dulux Acratex Texture Coatings, Berger, British Paints, Levene, and Walpamur brands. www.dulux.com.au



Durotech Industries is a leading manufacturer and supplier of waterproofing, sealants and adhesive technologies. Durotech Systems products have been widely used in the construction industry for the sealing and coating of both residential, commercial and industrial buildings for over 40 years.

At Durotech we don't believe that one product can do it all but we do believe a Durotech System can. www.durotechindustries.com.au

ENSYSTEX™
LEADING INNOVATION IN PEST MANAGEMENT

Ensyslex is a global research-based company with the vision to be 'the first choice for environmentally responsible, effective, long-term termite management solutions.' The company's key brands for protecting new buildings are the NOVITHOR™ Pesticide-Free Termite Protection System and TRITHOR™ Termite Protection. Both Systems hold ABCB Codemark Accreditation. Ensyslex has the largest technical sales support team of any innovation based termite protection company in Australia, and we are present in all States to assist you. www.ensystex.com.au



Ezi-roll Doors have been manufactured in Australia since 1974. The company's beginnings go back to 1954 when A.R. Steel Structural started its operations in Brisbane. In 1969, A.R. Steel Structural decided to diversify its business to meet the increasing demands of Queensland's growing economy. At this time, a gap in the market presented itself and an opportunity to expand into industrial steel roller shutters was identified. A four year research and development program was embarked upon - the result, a unique and innovative roller shutter design, which was patented and suitably named the ezi-roll roller shutter door. www.eziroll.com.au



ISPT George Place, NSW



compliant products made it the obvious choice to compliment the project's remarkable design and particular hues. To achieve this, DTAC supplied and installed their DT0300 Brass Tactiles across the site at various locations such as stair landings and the base of escalators. This product has been tested to AS/NZS 1428.4.1 to achieve an R12 slip resistance rating, giving the builder peace-of-mind.

DTAC design Australia's leading range of superior quality products that meet all requirements of Australia's tactile, stair tread and edging compliance regulations. All products are designed, manufactured and installed in line with the latest Australian NCC standards.

DTAC products also conform to the Disability Discrimination Act (DDA, including slip and luminance requirements with test certification data available.

In addition to the George Place redevelopment, DTAC's work can be seen throughout Australia in many iconic projects, including but not limited to the Police Stables redevelopment at the University of Melbourne, Glen Street Library in Sydney, RMIT University, Melbourne and the NAB building on Bourke Street.

Photography: Courtesy of Fretwell Photography/FDC Group

When it comes to the design, supply and installation of tactile indicators, stair treads and edging, DTAC Pty Ltd is a world leading innovator which has been the trusted name in the industry for over 15 years. DTAC pioneered the architectural floor tactile industry in Australia, taking a utilitarian product and transforming it into an aesthetic and compliant feature that compliments any project.

DTAC was contracted by FDC Construction for the recently completed ISPT George Place redevelopment project. The project unites three buildings in the heart of Sydney's CBD: 345 and 363 George Street and the heritage-listed 24 York Street. The striking transformation of this impressive super lobby unites ground floor levels of the three buildings with the vision to create a unique precinct that offers meeting spaces, quiet zones, social hubs, food offerings and bars. George Place combines indigenous artwork, premium quality furnishings, natural materials and lighting to provide a welcoming and dynamic environment for work and leisure.



DTAC's renowned elegant and



0195p DTAC tactile indicators and stair edgings

www.dtac.com.au

Northern Beaches Hospital, NSW

Dulux®



The healthcare needs of the Northern Beaches community have changed significantly since Manly and Mona Vale hospitals first opened many decades ago. A major investment in new infrastructure was required to ensure the local community had access to high quality healthcare into the future.

In 2014, Dulux were engaged by BVN Architects to assist in the design of the Northern Beaches Hospital and in 2015, CPB Contractors were engaged by the client Healthscope to construct the first hospital to be built on a greenfield site in Sydney for 20 years.

The \$600m facility features 488 beds, state of the art emergency department with medical centre, 14 operating theatres, mental health facilities, a helipad, and 1400 car spaces in a 9 storey car park. The Northern Beaches Hospital was officially opened to the public in October 2018.

Requirements

Healthscope were seeking to build the first Green Star hospital constructed in NSW with a "4-Star As-Built rating".

Paint finishes were required to meet both low VOC rating and stringent clinical cleaning cycles. Another important part of the design brief was the need to adhere decals to the walls.

Solution

Dulux Steriguard Durable Low Sheen was specified for bathrooms and patient rooms and Dulux Steriguard Ultra for dry labs, operating theatres, ACU, walkways and areas titled 'high prevention infection areas'.

Dulux Wash and Wear Matt was used on a large amount of the public and lobby spaces to cater for the decals and the Dulux Fast Finish range used for the undercoat and ceiling paint.

The Dulux Powders Electro product was specified and used on the façade of the 9 storey, 1400 space car park also on site.

Benefits

Dulux Steriguard was developed in conjunction with Bayer Material Science to deliver a low odour, easy to clean, low VOC and hard wearing solution for health and aged care facilities.

Working with paint contractors Fine Touch, paint systems were applied as 'fit for purpose' and to also deliver the Architects aesthetic intent. Dulux Steriguard gave aesthetic appeal of a low gloss finish whilst meeting Greenstar benchmarks for broad wall paint and ultimately giving the 'infection prevention' coating required for particular spaces.

Dulux Fast Finish allowed contractors Fine Touch to save time and costs by applying the undercoat and ceiling paint in one application, whilst again meeting VOC requirements.

The need to meet colour, aesthetics and council solar reflectivity requirements was important in the choice of Dulux Electro range of powder finishes. Five colours from the range were chosen, each with the 20-year warranty.

DuluxGroup are committed to providing best in class solutions for every individual project. Sustainability and performance are the key drivers in new product development. The Northern Beaches hospital is a testimony to the collaboration and consultation between BVN, Healthscope, CPB Contractors, Fine Touch and Dulux to deliver a world class project in NSW.

The Northern Beaches Hospital is located in Frenchs Forest, NSW.

Architect: BVN Architects

Builder: CPB Contractors

Client: Healthscope

Painter: Fine Touch



0345p DULUX steel protective paint coatings
0671p DULUX painting

www.dulux.com.au

Waterfront Residential Development, NSW



High Performance Liquid Polyurethane Waterproofing Membrane System

The Architect and Builder required a quality high performance local made and warranted waterproofing system to be applied on multiple luxury high end roof tops. The coating needed to be fast, strong, UV stable and highly resistant to foot traffic. Whilst easy to use and aesthetically pleasing for the client. A seamless liquid applied system was selected to give the Architect the freedom of design whilst maintaining a water tight structure.

The Architect, builder and contractor requested a superior performing waterproofing system to be applied on to the rooftop. The requirement was for a strong UV stable and highly resistant to foot traffic waterproofing system. Furthermore, the system itself needed to be fast curing as time was of the essence.

System Recommended

After consultation with the Durotech Technical team the following system was recommended:

- WBE HIBUILD Water based Epoxy primer and moisture barrier (Two component water based epoxy coating used to prime/seal and coat concrete or masonry surfaces).
- Duroseal 25 FC polyurethane sealant (A single component moisture curing polyurethane construction sealant which is a tough, durable PU sealant with good chemical resistance).
- Duroproof PPM SL polyurethane

(A high quality superior performing self-levelling membrane that cures rapidly to form a seamless high performance polyurethane hybrid membrane).

- Duroproof ATC UV trafficable topcoat is a single pack aliphatic polyurethane topcoat providing greater UV protection, colour fastness and anti-chalking properties.

Application

It was applied by brush, roller and squeegee. Due to the self-levelling abilities of the membrane a squeegee was efficiently used to cover larger areas quickly whilst providing a mirror image. This effective method is both quick and quiet, not disturbing or destroying anything during installation.

Outcome

The self-levelling trafficable UV stable polyurethane waterproofing system produced over and beyond the outcome which was required by the Architect. They were impressed not only by the qualities of the membrane such as durability and UV stability, but also by the overall image of the rooftop. A smooth mirror like image was achieved giving it a superior high quality look. The builder and contractor were extremely pleased due to the ease of installation and the local support of the Durotech team. It was essential for the builder to use locally manufactured

products and Durotech was able to provide them with this. After 42 years of local manufacturing, Durotech has established themselves as the market leader in waterproofing systems.

Unique qualities of the system

- Smooth and quality finish
- Long-term durability
- Highly Traffic resistant
- Fast Installations
- Low VOC and Low Odour
- UV stable
- Easy to Use
- Self-levelling qualities
- Australian made and tested

Why this system was used

Some of the reasons the client opted for this system were as follows:

- A fast coating system which was proven and tested in the market.
- The need to have a UV stable and trafficable system which would provide long term warranties and a well presented Terrace Area.
- Flexible and cost effective
- Locally made and warranted
- Local on ground technical support
- LOW VOC and non disruptive
- The coating was able to allow the Architect freedom on design due to its easy installation process

Completed in May 2019 with a roofing area of approximately 2000 sq metres on four roof tops.



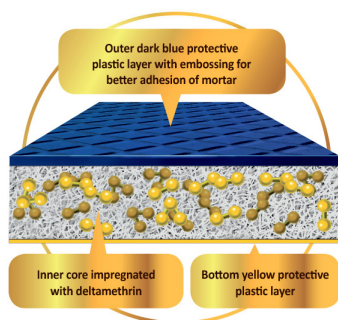
Newport Luxury Home



Kingscote Airport Kangaroo Island, SA

ENSYSTEX™
LEADING INNOVATION IN PEST MANAGEMENT

Kingscote Airport Upgrade Project creates a significant addition to the local infrastructure of Kangaroo Island and now makes the island accessible directly from many Australian Capital cities. Safeguarding the \$20 million plus investment from termite attack is TRITHOR® Termite Protection.



Inner-core

The Ashley Halliday Architect designed terminal building compliments the local natural surroundings, bringing together a modern design style, utilising timber features comprehensively throughout. This is why, in addition to protecting structural components, whole of building, including aesthetic features must also be protected against termite attack.

Solution

Charged with the responsibility of installing termite protection at the Airport Terminal building was Complete Pest Control who worked with Mossop Construction + Interiors on the project. Complete Pest Control confidently installed TRITHOR for several reasons;

- Firstly, TRITHOR protects against concealed entry by termites, simply because termites physically can't penetrate through the product.
- A full Termite Damage Warranty applies to all aspects of the building for a period of 50 years, backed by the product manufacturer, Ensystex.
- TRITHOR poses no risk to patrons, construction workers or the environment.

- Being a flexible termite management system TRITHOR may be installed in many difficult and complicated situations with ease.

Most importantly, when protecting such an environmentally considerate construction, TRITHOR has been independently audited and verified to meet the latest health and eco-design Standards. TRITHOR is suitable for use in the sensitive environments, particularly where public health and safety is paramount.

TRITHOR easily moulds around any unusual and challenging building designs and is easily cut and joined, thus ensuring total protection at all times. TRITHOR is quick to install and has no sharp edges to affect other tradespeople.

Compliance and conformity

TRITHOR Termite Protection holds a CodeMark Certificate of Conformity, CM40255, confirming compliance with the Building Code of Australia 2019 Volumes One and Two.

Independent trials, conducted in accordance with the requirements of AS 3660 Termite management Part 3 and other tests show that TRITHOR will remain as an effective termite protection system in excess of 50 years.



TRITHOR during installation to protect construction joins, perimeter and service penetrations

Architect: Ashley Halliday Architects
Installer: Complete Pest Control developed and installed the Termite protection solution
Photographer: Sam Noonan



Newly Completed Kingscote Airport Terminal building



Dan's Garage Detailing Melbourne, VIC



Ezi-roll Doors Australia was the chosen supplier to manufacture and install overhead doors by East Melbourne's most prestigious high-end car detailer. Dan Neubronner, of Dan's Garage Detailing, describes himself as a 'Detailer for Enthusiasts', attracting the most particular of car owners.

The Project

To compliment the brand equity of his business, the owner required industrial doors to provide functional security and a visually striking façade. The Ezi-roll Doors team was given a brief to provide an interior door product that was not common but moreover contemporary and chic in situation.

The Solution

With security and visual appeal in mind, the Ezi-roll Doors team proposed the Ezi-100 Crystal; a roller shutter constructed of polycarbonate extrusions. Designed to provide security and visual transparency, the 100% polycarbonate curtain door replicates shopfront glass. The Ezi-100 Crystal door is unique in the Australian market due to its innovative construction. The patented shutter is manufactured in Australia, and is purpose-built for discerning designers seeking to display their wares whilst also servicing the same functional requirements of conventional roller shutters.

The Ezi-100 Crystal is manufactured

from multiple interlocking clear polycarbonate extrusions. Each extrusion is 100mm high and 1.4mm thick. Both ends of each alternate slat are fitted with custom designed nylon injection moulded end clips to reduce friction and noise during operation and to prevent lateral movement within the guides. The shutter's roller drum is fabricated from either a 229mm spiral ducted tube or 229mm spiral welded tube depending on operation and shutter size. The assembly rotates on a 34mm steel shaft that is fitted with helical springs, designed to counterbalance the weight of the doors throughout operation.

Suitable for larger openings up to 3000mm wide and 3500mm high in a single span, the Ezi-100 Crystal is supplied in a standard clear anodised finish with an aluminium bottom rail. An aluminium mid-rail was applied to the shutters to provide stability and security. Powered with a 240v central motor, the doors are controlled via a key-operated switch.

The Application

Safety prerequisites included the submission of comprehensive Safe Work Method Statements to demonstrate that the Ezi-roll team conducts regular internal training to maintain safe onsite work practices. Ezi-roll's strong safety culture ensured that the manufacture

and installation of the products were performed safely and efficiently. The Ezi-100 Crystal is ideal for applications including shopping centre retail spaces, street-facing shopfronts, arcades, large display cabinets, sporting complexes, clubs and bars.

The Outcome

Business owner, Dan, was delighted with outcome of the doors, "the Ezi-100 Crystal Roller Shutters have provided Dan's Garage with the unique high-end look I wanted, as well as providing the vehicular access and additional security I needed. They're definitely a talking point with my clients, and add to the professional atmosphere I work very hard to maintain in my business."

Ezi-roll Doors Australia is proud to have been the preferred supplier for aluminium shutters and automatic access systems in this impressive project for Dan's Garage Detailing in Melbourne.



Ezi-roll's patented crystal polycarbonate roller shutters exceeded the client's design brief for providing contemporary, visually striking, transparent and secure internal overhead doors.



0454p Ezi ROLL overhead doors

www.eziroll.com.au



"The quality and productivity of the building and construction industry is enhanced by the work of the National Building Specification (NATSPEC). For more than 40 years NATSPEC has provided professional and specialty packages for all sectors of the industry and all building structures. NATSPEC is highly regarded by industry stakeholders in both the private and public sectors and is strongly supported by Master Builders Australia (MBA)."

Denita Wawn, Chief Executive Officer, MBA



Fielders has been synonymous with quality and strength for over 100 years in an industry where success is reliant on satisfaction. Initially providing roofing materials, the company has now extended its product range and reach across Australia to include purlins, door frames, carports, verandahs, fencing, sheds, and composite steel formwork. This ensures comprehensive product offerings and support for all aspects of building construction. Utilising their progressive culture, specialised resources, and market leadership position, Fielders has won a reputation for its innovative approach to manufacturing and installation.

Being at the forefront of international cold formed steel products, Fielders has attracted the loyalty of many architects, engineers, roofers, formworkers, and builders who have experienced the benefits of reduced logistical, labour, and time expenditures. With these and many other new developments, Fielders will continuously strive for growth through superior products, convenience, quality, and service. With Fielders, you will always 'Finish On Top.' www.fielders.com.au



FMC Australasia has been successfully providing quality pest and crop management products to both residential and industry markets in Australia since 1975. In 1994, FMC developed Biflex, which became Australia's most widely used and successful termite product. Well over one million Australian properties have now been successfully protected with Biflex. www.fmcaustralasia.com.au



Gerflor Australasia Pty Ltd is a world leading manufacturer of door and wall protection systems, handrails, and accessories. Gerflor is an Australian company with more than 30 years' experience in diverse market sectors including health and aged care, education, indoor sports facilities, and assorted commercial projects. Colour, design, and innovation are hallmarks of the brand that offers sustainable products that complement current design trends. www.gerflor.com.au



The Bend Motorsport Park Tailem Bend, SA



In early 2018, The Bend Motorsport Park in Tailem Bend was completed. As Australia's Premier Multi-Purpose Motorsport Facility, the venue hosts a 7.77 km bitumen racing circuit, drag racing strip, a 4WD adventure park, and drift racing circuit.

The Solution

Due to the variety of solutions required to complete this large-scale project, Fielders assisted the architect and engineers in specifying each product to optimise each element of the project. Fielders worked in conjunction with HiCrete Roofing and TC Formwork to install a variety of different elements, ultimately selecting multiple Fielders products including Fielders Prominence™ from the Finesse® range, KingKlip®, KingFlor KF57®, and S-Rib™ perforated.

The Process

Fielders Prominence™ was the perfect cladding choice to bring the most out of this design by implementing a unique façade which welcomes visitors to The Bend. It is a versatile product that is well-suited to contemporary architectural designs, as demonstrated by the varying pan widths in the design, creating an elegant aesthetic. S-Rib™ Perforated was used in addition to Prominence™ to achieve a well-rounded and complementary visual. Applying perforations to the S-Rib™ allowed the profile to be used as a ceiling lining complying to the required acoustic performance of the building. KingKlip® was selected as the roofing solution due to its impressive flexibility. The flooring installation spanned over two levels and KF57® proved to be an excellent solution for the project, due to its easy installation.

Project Specifics

- 8000m2 of KF57® 1.00mm installed by TC Formwork
- HiCrete Roofing installed all roofing and walling products.
- 3600m2 of KingKlip® in ZINCALUME® steel
- 800m2 of Prominence™ in COLORBOND® steel in Woodland Grey®

- 600m2 of S-Rib™ Perforated in COLORBOND® steel in Surfmist®

Fielders prominence®

The versatility of Fielders Prominence™ means that the product can be used for both roofing and walling installations, providing an elegant choice for either option. Prominence™ has a contemporary and stylish street appeal, with the ability to attract the eye of pedestrians with ease. Both the specifier and the builder can appreciate the elegant flat pans of Fielders Prominence™.

Fielders Kingflor® 57®

The major benefits of the KF57® product are its unique profile with wide pans that allow clear access for in-floor services, minimal propping and easy access to the underside of the slab. Designed to be able to achieve high fire ratings, it is ideal for many applications as the closed rib profile is completely embedded in the slab offering a major reduction in fire reinforcement.

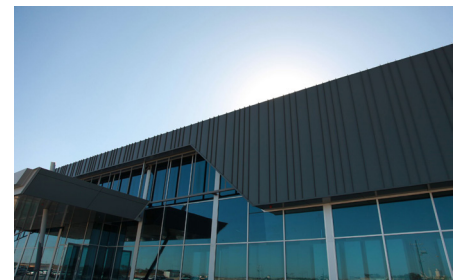
Fielders Kingklip®

KingKlip® is an intelligent and cost-effective alternative to traditional screw-fix roofing. The efficient installation characteristics of KingKlip® allow project deadlines to be met with ease. It is amongst the widest concealed-fix deckings available on the market. KingKlip® completely removes the

need for screws, eliminating holes and potential leaks, making it a clear choice for something as large-scale and world-class as The Bend Motorsport Park.

S-Rib™ Perforated

A reliable product that stands the test of time, Fielders S-Rib™ Perforated can be used as either a roofing or a walling product. It is a tried, tested and true corrugated roofing and walling finish. Available in standard corrugated or Barrel Rolled, S-Rib™ offers extra protection and long-lasting durability. Highly versatile, the S-Rib™ profile can reflect a modern or traditional design, depending on the application.



0311p FIELDERS KingFlor® in concrete formwork; 0341p FIELDERS SlimFlor in structural steel
0423p FIELDERS roofing - profiled sheet metal; 0424p FIELDERS roofing - specialised sheet metal
0436p FIELDERS cladding - profiled sheet metal; 0437p FIELDERS cladding - specialised panels

www.fielders.com.au

Angliss Hospital, Albert Street Upper Ferntree Gully, VIC



The Angliss Hospital at the foot of the Dandenong Ranges in Melbourne has undergone a \$20 million transformation to boost services and increase critical care capacity. The project involved construction of a fourth level above the main hospital building to house a 14-bed critical care unit.

Requirement

The needs of a busy hospital are well known when it comes to choosing flooring. End users cite optimal hygiene as critical to patient wellbeing. Low maintenance solutions are favoured and the maintenance regime itself needs to be well executed and as efficient as possible. Aesthetics also played a key role in the selection of an array of neutral and contrast colours from the Gerflor Mipolam Esprit range according to Gerflor's Commercial Manager, Victoria/Tasmania, Andrew Fenner.

"The client wanted strong, bright colours and Esprit fitted the design brief. Bright colours were also part of the plan to lift the mood in the paediatrics ward," Andrew said.

Approach

An extensive selection of Gerflor flooring provides practical, low maintenance solutions in striking designs and colours that complement the modern design aesthetic throughout.

Results

According to Eastern Health's Support Services Manager, Ivan Tarrant, the high-performance homogeneous Esprit and Symbioz flooring installed on the fourth floor at Angliss ticks all the boxes.

"They've been absolutely fantastic and are proving very easy to maintain. The material being used in these new products means new cleaning regimes. We ran a cleaning trial for a number of weeks also using the chemical free cleaning system and the magic sponge with excellent results. We did a half and half exercise where we cleaned all the dirt out and demonstrated that if the new cleaning techniques were applied the contractors didn't have to do the hard work anymore. They were all quite amazed. I did a number of spot audits to ensure no chemicals were being

used. The unit manager is very happy," Ivan said.

Benefits

Paediatric facilities were also improved allowing an increase in short stay beds for younger patients. Overall, the hospital expansion delivered an increase of 20 beds, along with significant improvements to the broader clinical environment.

Architect: Silver Thomas Hanley

Builder: Kane Constructions

Client: Eastern Health



Gerflor flooring with low maintenance practicality that combined with striking colours and designs satisfied the brief at Angliss Hospital in Melbourne.



WHAT DOES NCPR AUTHENTICATE?

Product name

Standard detail

Report detail

Notes and Limitations

Evidence authenticity

CAB accreditation

ARMAFLEX FRV

The manufacturer of this product can provide evidence of testing and/or conformity to the identified standard. Contact:

Armacell Australia
www.armacell.com.au

The following standard is identified in the evidence of conformity:
FM 4924 : 2013
Approval standard for pipe and duct insulation
Standard Status - Current
National Construction Code (NCC) Citation: N/A

Evidence Identifier
3050788
Evidence Issue Date
17 December 2013
Evidence Expiry Date
N/A
Type of Evidence, Notes and Limitations
FM Approvals: Approval is subject to satisfactory field performance, continuing Surveillance Audits, and strict conformity to the constructions as shown in the Approval Guide, an online resource of FM Approvals.
Authentication Status of Evidence
Authenticated by CAB

Other standard(s)

Certificate
(Display at discretion of the supplier)

Conformity Assessment Body (CAB)
FM Approval
Conformity Assessment Body Accreditation, Accreditation Number
IAS TL-221

NC
PR

NATSPEC
Product Performance

NATIONAL CLASSIFICATION SYSTEM
SUB WORKGROUP
075 Piping
WORKSECTION
0752 Mechanical Piping Insulation
BRANDED WORKSECTION
0752p ARMAFLEX FRV In Mechanical Piping Insulation
NATSPEC Branded worksections can be downloaded for free from www.natspec.com.au.
This product has evidence of conformity to the following standards:
EN 14364 : 2010
AS/NZS 1530.3 : 1999
EN 13469 : 2015
DIN EN 12667 : 2001-2005
EN 1009 : 2013
ASTM C335 : 2010
ASTM C516 : 2010
FM 4924 : 2013
NFPA 214 : 2013

FM
APPROVED

Certificate of Compliance
This product has been tested and found to comply with the following standards:
FM 4924 : 2013
AS/NZS 1530.3 : 1999
EN 13469 : 2015
DIN EN 12667 : 2001-2005
EN 1009 : 2013
ASTM C335 : 2010
ASTM C516 : 2010
FM 4924 : 2013
NFPA 214 : 2013

An example of the NCPR product listing

The volume of inadequate, inaccurate and false evidence of conformity has been rising. Similarly, materials are increasingly not being used according to applicable regulations. This reduces the safety profile of Australian buildings and puts clients and the public at risk.

To help you combat inferior quality, NATSPEC has launched the National Construction Product Register (NCPR).

The NCPR is a searchable online database of construction products whose evidence of conformity has been authenticated by NATSPEC to relevant Australian and international standards.

Fraudulent products, accompanied by fraudulent certificates, increase the risk of using non-conforming building products. Given the variety of product alternatives and the common practice of product substitution, the NCPR represents a welcome mechanism to authenticate suppliers' documentary conformity evidence.

"Prevention is better than cure. Avoiding the use of non-conforming building products or identifying issues early in the product supply chain or construction can reduce any risks and problems that may arise later."



Catherine Townsend
LFRAIA
Director, Townsend+Associates Architects
President of Architects Accreditation Council of Australia

"Independent authentication provides both credibility to the manufacturer and material assistance to the specifier. The issue of fabricated product documentation is of significant concern to regulators and consumers. I welcome the presence of an independent body to authenticate certificates of performance and/or compliance."



Brett Mace
CEO, Australian Institute of Building Surveyors

"Accurate and up to date information is vital for building surveyors. Having a trusted single reference source of current information that addresses this need will reduce the time involved in getting to the next steps of verification of the compliance of the information provided by manufacturers. Building surveyors are likely to view listings of products where current evidence has been provided as helpful in their endeavors to confirm suitability of products for use in buildings."



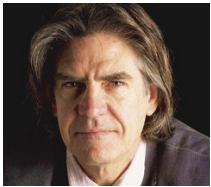
Greg Hughes
CEO, Australian Institute of Building

"A useful guide which provides transparency to a manufacturer's conformity and compliance claim. It effectively reduces the amount of preliminary work for building practitioners by ensuring the documents which they draw product suitability conclusions from are genuine and can be trusted. The system does not eliminate sub-standard practices, but it increases exposure of credible manufacturers who can have their documents authenticated."



Robin Fardoulis AM
Managing Director
Fardoulis Constructions

"Products can be fraudulent – so can certificates. To me, it is important to know that the nominated products have verified documents which support their advertised conformity claim. NATSPEC's NCPR provides assistance to inform that the conformity/compliance documents are up-to-date and genuine. The "correctness" gives builders confidence. There are numerous factors for the process to go wrong. What the NCPR offers is the first step to get things right."



Geoff Warn
Founding Partner
With_Architecture Studio

"The NCPR is a system that helps designers specify products with confidence, particularly products not previously used. It is comforting to know NATSPEC validates the foundation of evidentiary documentation. This is a small but significant step to assist designers, suppliers and contractors to improve build quality."



Australia's first family of paint.

Australian made and owned since 1935, the fourth generation of Haymes family proudly manufacture innovative coatings that continue a tradition of never taking short cuts on quality. The Haymes range includes an Artisan Collection, Woodcare, Protective Coatings, Render on top of their nationally accredited Ultra-Premium paints. Their extensive project experience, diverse colour palettes, and dedicated commercial team work with specifiers, builders and developers across Australia as a unique family owned and operated coatings manufacturer. www.haymespaint.com.au

HIMMEL

CSR Himmel brings together Australia's widest range of ceiling tiles and accessories. The product portfolio includes high-quality products to make sure the design and functionality needs of any project are always met. Himmel distributes a range of ceiling tiles, including mineral fibre, timber, metal pan, and high acoustic tiles, along with ceiling accessories such as steel and aluminium grid, and lighting solutions. Himmel also offers a range of timber and high acoustic wall panelling options. www.himmel.com.au



Interpon Powder Coatings, part of the AkzoNobel group, is the largest global manufacturer of powder coatings and a world leader in powder coatings technology.

Headquartered in Sassenheim, The Netherlands, Interpon Powder Coatings has 29 manufacturing and Research & Development facilities worldwide and 25 sales office, employing over 4,000 people globally.

Our global reach allows us to offer a wide range of stock and custom made powder coating colors, finishes and technologies. www.specifyinterpon.com



For more than 40 years, Keystone Acoustics, an Australian owned and operated company, has been redefining its processes and machinery to create patterned, perforated, and slotted panelling solutions, engineered for optimum performance.

Showcased in many of Australia's iconic buildings, Keystone Acoustics' solutions combine the widest range of quality substrates with the latest in innovative finishes to deliver acoustic performance, durability, and design versatility. Panels are engineered to suit diverse applications - from contemporary office fitouts to exemplary facades. www.keystoneacoustics.com.au



KINGSPAN Insulated Panels is the global leader in the design, development, and delivery of advanced building envelopes. Its wide range of products includes insulated roof panels, BENCHMARK high end roof systems, and standing seam systems. KINGSPAN Insulated Panels is widely recognised in the industry for the high quality and performance of its products, as well as its commitment to excellent customer services and technical support. www.kingspanpanels.com.au



Kingspan Insulation manufactures AIR-CELL® thermo reflective insulation, and Kooltherm®, a CFC/HCFC-free rigid thermoset insulation with zero Ozone Depletion Potential (ODP). The Kingspan Insulation range delivers innovative, high performance solutions in roof, wall, and underfloor applications for both residential and commercial buildings. Kingspan Insulation's technical experts can provide thermal solutions for Section J, Green Star, and 6 Stars. www.kingspaninsulation.com.au



Orchard Manufacturing Rowville, VIC



Australia's first family of paint.



Colour flows seamlessly throughout the building, from wall to floor

BENT Architecture was commissioned to deliver a new home for Orchard Manufacturing in Rowville, Victoria. They looked beyond the typical unresponsive industrial concrete warehouse shell, with a fit out that synthesised architecture, nature and the manufacturing process. The end result is an engaging work place that reflects the natural ethos of the client.

Creative Design

Inspired by the ideology of Austrian artist and activist Friedensreich Hundertwasser, the BENT team evaluated the existing site where there was no interaction between industrial building and its natural landscape. Their creative vision was to have lines from the surrounding landscape flow through the new site and into the building's interior space. The local environment influenced BENT's conceptual design approach for features such as undulating floors as well as colour palette plus numerous interior design features and finishes.

Finishes and Coatings

Working with the Haymes Commercial team, the site was developed using a range of paint, protective coatings and speciality products in a colourful palette across multiple surfaces that brought to life the creative vision.

BENT Architecture used a combination of Haymes Ultra-Premium Expressions on the interior and Solashield for exterior surfaces. Haymes Artisan Collection of decorative finishes was used to express an abstracted landscape flowing into the building to activate the interior spaces. The Artisan Textural range was used in a number of colours and features both in Sand and Rendercoat finishes.

One of the project's most defining features is how the use of Haymes Ultimate protective coatings flow colour throughout and across the building floors.

Ultimate Epoxy and Polyurethane finishes can be tinted to a wide range of colours which is not widely known, or used in building or commercial design. BENT's palette of five Ultimate colours flow beautifully across flooring throughout the Orchard site.

Craig Salen, National Commercial Manager for Haymes said it was an absolute pleasure working with BENT and the building team to deliver this project. "The way colour and effects were specified and used in this project visualising the landscape has really brought to life what our range of

Haymes products can do as a family. The vision of using a manufacturing floor as canvas for colour really does highlight how you can transform areas that are traditionally boring, industrial grey and concrete into something that's colourful, fun, energising and engaging in the built environment."

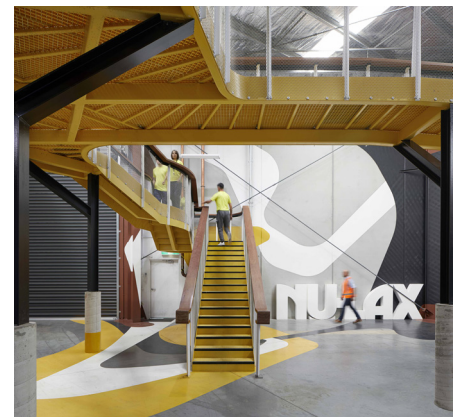
Architect: BENT Architecture

Client: Orchard Manufacturing

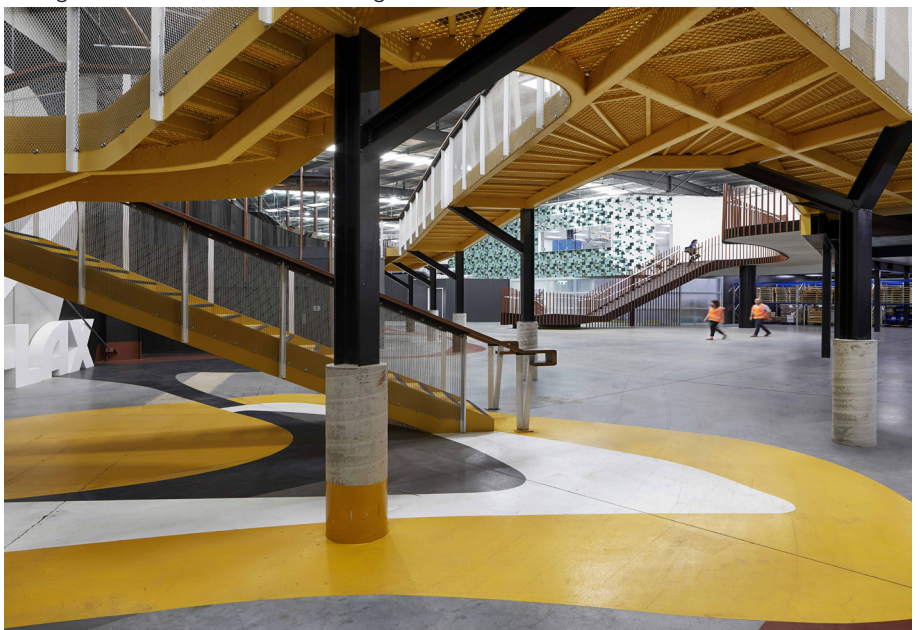
Builder: Rossiter Constructions P/L

Structural Engineer: Clive Steele Partners P/L

Haymes Range: Ultimate Protective Coatings, Artisan Collection and Ultra Premium



BENT's palette of colour activates and injects vibrancy into the manufacturing site



The natural landscape overlay surrounding the Rowville site



Interpon Powder Coatings add the final touches to the SCUH, QLD



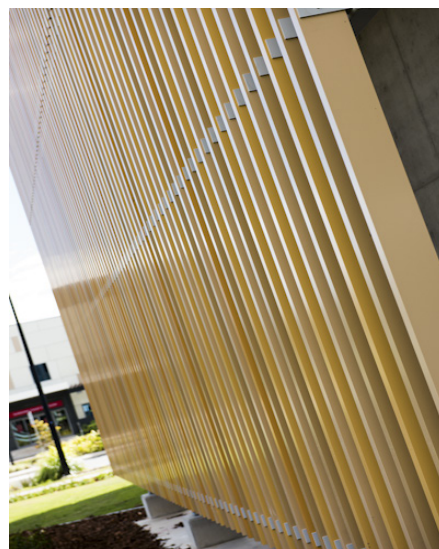
In April 2017, the Sunshine Coast University Hospital (SCUH) will open its doors to the public. Large-scale healthcare projects like SCUH bring forth a whole host of challenges for building professionals, from budget constraints to facilitating developments in the health care sector.

Interpon, provided powder coatings for the sunhoods, aluminium extrusions and brackets of SCUH. Gareth Connell, Regional Specification Manager at Interpon, shares his experience of the more challenging aspects of working on hospitals and other government projects: 'More often than not, building professionals are looking for long-term durability and aesthetic performance. The biggest challenge is balancing the product performance requirements and ensuring the specifications aren't downgraded for lesser grade products.'

This challenge is reflective of widespread misconceptions associated with durability and the ensuing misspecification of powder coating in the building industry. According to Connell: 'Finish performance has been assumed rather than properly understood and products have often been specified based on colour rather than understanding the preparation, application and performance qualities of an architectural grade powder coat system.'

These assumptions aren't helped by the Australian Standard for Metal Finishing (AS3715) which is still perceived to be the performance benchmark for architectural metal finishing when really it isn't applicable for a lot of projects.

AS3715 is not suitable for commercial applications and it is not always sufficient for harsh conditions. It is advisable, therefore, to play by the rules of the American Architectural Manufacturers Association (AAMA) which are much more comprehensive as they are based on exterior exposure in South Florida, USA.



In projects like SCUH, it is vital that the product specified meets the warranty requirements. While warranties are important in all developments, they are particularly so in a health care facility where the building needs to perform at a high level for as long as possible. Often clients want to compromise

the performance level of a product to achieve a certain colour or aesthetic. As Interpon has the ability to develop custom, warranty-grade colours, they were able to provide the contractors at SCUH with their preferred colours – including Eastern Gold Satin and Surfsmist Satin.

A healthcare building, SCUH is considered a Class 9a building by the BCA. For this reason, Interpon provided D2105 Ultriva™, which has been designed to provide long-term performance warranties for all projects in all building classes and all locations. It offers a film integrity warranty of 20 years and a colour retention warranty of 15 years.

In order to ensure that products meet the warranty requirements for projects like SCUH, it is essential that they be applied by 'approved applicators'. If elements like grades of substrate and coating specifications are not tightly controlled, and process parameters are not recorded, it increases the element of risk for all involved.

'All Interpon Approved Applicators must meet stringent quality control and record keeping procedures as stipulated by Interpon powder Coatings Australia,' explains Connell. 'Every project that is coated in Interpon Warranty grade products is given a unique project identity and can trace the project, fabricator, products specified and even batch numbers of the powders used so complete transparency in the system processing needs to be adhered to.'



Sunshine Coast Hospital



Pottsville Beach Public School, NSW



Following an announcement last year by the NSW Government to invest \$6 billion into 170 new and upgraded schools over the next four years, Pottsville Beach Public School was awarded funding to upgrade a number of their existing facilities. These upgraded areas feature 13 new permanent teaching spaces, administration facilities and the relocation and refurbishment of the library.



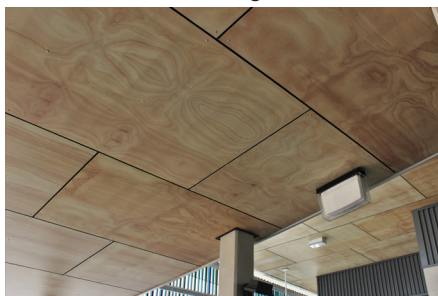
Digitally printed Key-Endura panels meet a group 1 fire rating

Architects Conrad Gargett were employed to achieve the outlined requirements, with design incorporating future-focused learning to support the students' needs along with a learning-centred approach to education. Bennett Constructions were appointed as the project's builders, along with installers Ideal Commercial QLD.

Challenge

Giving consideration to the latest

changes made to the National Construction Code (NCC), a large number of previously acceptable materials now no longer meet a Group 1 fire rating, as required in a number of sections of the building.



Six different hoop pine plywood patterns were selected to limit grain repetition

Solution

Given the architects desire to use a wood grain looking finish, and the limited number of substrates available to achieve Group 1 fire rating, the solution was to use Gen-Eco Environmental Wood Products' innovative digital printing, to achieve the wood grain look, while using Key-Endura Fibre Cement sheeting, which is deemed non-combustible.

Gen-Eco digitally printed Key-Endura fibre cement panels were chosen for the exterior soffit linings with a Hoop Pine plywood printed finish. Six different plywood patterns were printed to

ensure there was no noticeable panel repetition across the expansive ceiling area. As a result, the end-users are left with the look and feel of Hoop Pine plywood, with the safety of a group 1 fire rated material.

Applications

Gen-Eco Digital Printing can also be applied to a large number of other substrates including:

- Echopanel
- FR MDF
- MDF
- Plywood
- CFC (UV and anti-Graffiti coated for exterior soffits or cladding)
- Aluminum composite
- Glass
- Printed lightweight beams (including edge profiles)
- Acrylic and many more

Pottsville Beach Public School is one of many current projects featuring Gen-Eco digitally printed products, including others on the mid-coast of NSW/QLD.

Keystone Linings are the exclusive distributors for Gen-Eco Environmental Wood Products in New South Wales (NSW) and the Australian Capital Territory (ACT).



Digitally printed Key-Endura panels are ideal for creative external panelling



Gold Coast Sports and Leisure Centre, QLD



Gold Coast Sports and Leisure Centre designed by BVN Architecture

Kingspan Insulated Panels in bespoke colours provided the striking beauty appropriate for a unique sporting venue on Queensland's Gold Coast. With speed and ease of installation, high performance and longevity, the panels created a building that will be an icon for years to come.

BVN Architecture wanted to create a statement, flagship venue suitable for international sporting events that would stand out as a Gold Coast landmark. Kingspan Insulated Panels BENCHMARK Evolution and KS1000RW Trapezoidal wall panels were specified for compatibility, design flexibility, and extensive detailing for a sophisticated and aesthetically-pleasing finish.

Colour customisation captures local atmosphere

Kingspan worked closely with BVN to create the custom colours to reflect the Gold Coast's relaxed, beachside atmosphere. "We opted to do something that was a bit ostentatious. The colour and scale have become synonymous with the Gold Coast region," said Paolo Frigenti of BVN.

A mixture of 600mm, 900mm, and 1000mm vertically-laid BENCHMARK Evolution and KS1000RW Trapezoidal wall panels were used in four bespoke, Metallic steel colours: Carrara Gold™; Temple Gold®; Copernicus™; and Copper Penny®. The KS1000 RW Trapezoidal profiled panel was used as a ribbon datum as a feature, and the building was finished with a membrane-

lined insulated box gutter in 1200mm and 1500mm girths.

Speedy installation with guaranteed thermal performance

Kingspan Insulated Panels spokesperson, Tim Marlow, said, "The Evolution, RW panel and insulated box gutters far exceeded the BCA requirements for climate zone 2 ('R'4.15, 2.65 and 3.18 respectively). BVN wanted to make sure a durable product was specified and also one that provided a guaranteed high level of thermal comfort, due to the venue's intended use.

"More than 900 metres of Kingspan insulated box gutters was used on the complex roof. Providing a faster install than a traditional built-up gutter, this approach will deliver high-grade, long-term performance and eliminate the risk of water ingress, by virtue of the heat welded joints. Kingspan worked with BVN to design the gutter and provided details and methodologies to achieve an on-plan 5.1-metre faceted radius curve."

The insulated box gutters were chosen for speed of installation and longevity. All corners and stop ends were fabricated in the Kingspan Insulated Panels factory in full, ready for a simple installation. As the gutter is fully membrane-sealed, insulated, and with no exposed fixings, this ensured its integrity wasn't

compromised and a 15-year warranty could be provided. The gutter was designed to be laid flat and symphonic drainage was used.

Panels deliver style and substance

All panels and membrane-lined insulated box gutters are finished with a bright white liner, maintaining a uniform colour throughout, eradicating unsightly exposed steel on the inside of the building while also eliminating the need for netting in the sports halls. Once the gutter was installed, the team welded the cladding and gutter together to achieve a monolithic, fully-weather-tight gutter system.

Paolo Frigenti said, "We've been really surprised at the overall aesthetic and quality of the panels, and a lot of people come away from the building impressed by the level of refinement, which is in major part due to the use of the panels and the details that come out of the Kingspan suite.

"I enjoyed the ability you have as a designer to manipulate, play and develop something special: it's not a strict system. Our interaction with Kingspan was great."

Architect: BVN Architecture
Photographer: Cieran Murphy



Gold Coast Sport and Leisure Centre designed by BVN Architecture



0428p KINGSPAN insulated panels roofing systems
0437p KINGSPAN insulated panels cladding systems
0762p KINGSPAN insulated panels in cool rooms

www.kingspanpanels.com.au

Moolap Aged Care Facility, VIC



Located in Moolap, east of Geelong, this stunning aged care facility has been designed by renowned urban architects Jackson Teese. No quarter was given in the effort to build a facility with ultimate style and functionality, on time and on budget.

The building boasts a 108 bed capacity and ample features including an on-site hairdressing area, laundry areas, dining hall, kitchens, bathrooms, staff facilities, and more. Residents accommodated at the facility enjoy the comforts of home as well as the added security of 24 hour medical assistance, and on-site low care and dementia units.

Achieving energy efficiency

At its completion, the \$20 million project showcased 550 square meters of Kingspan's Kooltherm K17 Insulated Plasterboard. The rigid board insulation provided a continuous insulation solution, reducing the effects of thermal bridging and increasing the energy efficiency of the building. An energy efficient building is able to provide stable temperatures through extreme weather changes. In this case, residents enjoy the benefits of this and live comfortably

regardless of the time of the year. It also reduces reliance on cooling and heating systems to regulate temperatures and therefore cuts energy costs significantly.

Ease of installation

Once Kooltherm K17 Insulated Plasterboard was introduced to the project the benefits were quickly realised. Installation was completed at three and a half times the speed of the originally specified method, and the lightweight nature of the boards made

for an easy install and fast completion time.

Kingspan's on-site team projected the benefits offered by using Kooltherm K17 Insulated Plasterboard in place of traditional clip and channel, or stud and track methods, and contractor and architect both agreed that the ease and speed of the product's installation would provide huge labour savings to the project.



The facility is the perfect mix of style and functionality



Residents of Moolap Aged Care Facility can enjoy stable temperatures thanks to Kooltherm K17 Insulated Plasterboard





Knauf Insulation is a global leader in the manufacture of Glasswool products (using the Earthwool brand) and offers a range of thermal and acoustic systems for walls, roofs and floors. Knauf Insulation Glasswool products are certified as non-combustable and utilize advanced Ecosse Technology, a sustainable binder that contains no added formaldehyde, and is certified by Eurofins Gold as an 'outstanding material' according to VOC (Volatile Organic Compounds) indoor air quality emissions regulations. Knauf Insulation offers designers innovative products to satisfy increasingly stringent requirements of energy efficiency and sustainability in homes, non-residential buildings and industrial projects.



Lawn Solutions Australia is a wholly Australian owned and operated business with Australia's leading group of accredited turf growers coming together under a single banner to offer a range of exclusive turf brands and turf related products across a comprehensive national network.

Lawn Solutions Australia is setting a new benchmark for best practice in the turf industry with our industry-leading accreditation system. All our growers are AusGAP certified and adhere to the same stringent, nationally endorsed standards. www.lawnsolutionsaustralia.com.au



Lysaght's diverse product range now includes roofing and walling, gutters and downpipes, purlins, fences, structural formwork, and home improvement products. As a division of BlueScope, we can rely on the backing and support of Australia's largest steelmaker. Made from 100% Aussie steel, the products are extensively performance-tested, come with a BlueScope warranty, and offer customers confidence and peace of mind. For 150 years, customers have relied on Lysaght as the trusted experience in steel. Lysaght: the Australian steel people. www.lysaght.com



MAPEI is a world leader in the manufacture of innovative products for the construction industry. Products include adhesives, grouts, waterproofing membranes, levelling compounds, repair mortars, and quality related building products.

Numerous projects executed all around the world are testimony to the outstanding quality of Mapei products that are preferred by architects, designers and building contractors.

Mapei products are manufactured in Brisbane and distributed through an extensive network of distributors. www.mapei.com.au



Markham Global – adding life to concrete.

Markham is not just another product supplier. We offer solutions for asset owners, architects, civil engineers, construction professionals and concrete placement. We specialise in PENETRATING HYDROGEL treatments for new and existing concrete.

Markham's team is continually researching and developing products and systems that are more environmentally friendly, cost-effective, innovative, and of course easier to use. www.markhamglobal.com



iceHQ Indoor Ice Hockey Rink Melbourne, VIC

KNAUFINSULATION

The indoor ice sports facility, iceHQ opened on 1st of July 2018 and is located 14km north of the Melbourne CBD in the suburb of Reservoir. The rink accommodates skaters of all ages and skill levels, hosting skating lessons, figure skating, and public skating with birthday parties, schools, and competitive ice hockey.



iceHQ ice rink located in Melbourne, Victoria

iceHQ required indoor air temperature to remain at a constant, stable level to mitigate risk of the ice melting. The unique purpose of the building meant the envelope needed to achieve extraordinary performance in comparison to existing minimal standards of insulation in Australia.

iceHQ also aimed to reduce energy consumption, utilising a system designed for high thermal performance while maintaining high acoustic performance.

The building was existing and therefore it required a unique design. The original specification was problematic for installation. Designinc Architect, Kieran Leong commented: "A lot of consideration was given to how to practically retrofit the insulation to the underside of the existing roof, while sticking to a budget."

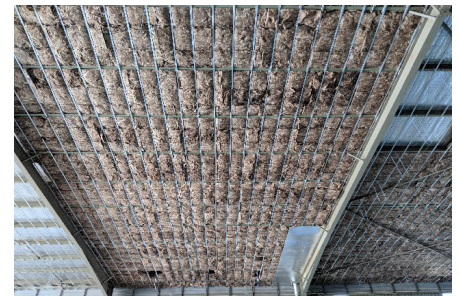
Design solution

The entire ceiling was battened to create a cavity for the insulation. Earthwool® ceiling batt, R5.0 was installed in combination with a pliable building membrane to achieve high thermal performance, low emissivity and a highly durable finish.

The walls required a particularly high R-Value of R4.0, this is 38% higher than the minimum standard of insulation used in external walls in Melbourne (standard is R2.5). To achieve the R4.0 thermal rating, multiple layers of Earthwool® wall batt, R1.5 was used. Layering the insulation ensured the wall achieved the thermal requirements while still maintaining a cost-effective position in comparison to other insulants.

Installing Earthwool® insulation resulted in the desired thermal performance being achieved for iceHQ. Ross Fisher, Director of iceHQ, said: "On 40 degree days the indoor air temperature is still

cold enough to ensure the ice remains frozen. On the hottest summer's day, our interior temperature did not exceed 18°C."



Earthwool® insulation installed in roof cavity

Result

The increased thermal performance of the existing building will ensure iceHQ saves money on energy bills, as the superior thermal performance of the building envelope will drastically reduce the overall heat gain, all while using a sustainable Earthwool® product.

Furthermore, Earthwool® delivers a superior acoustic performance all while being non-combustible to AS 1530.1 giving designers, developers and contractor's confidence when specifying and installing Earthwool®.



iceHQ ice rink facility



0471p KNAUF INSULATION in thermal insulation and pliable membranes
0472p KNAUF INSULATION in acoustic insulation

www.knaufinsulation.com.au

South Bank Parklands Brisbane, QLD



South Bank attracts about 11 million visitors each year. Located on Brisbane River's southern bank, the parklands offer patrons many attractions, including entertainment, food, gardens and a chance to sit and relax.

Problems with trees ... and feet

South Bank's slightly elevated Ernest Street entrance provides park users a grassed area to sit on and chat under tall, shady trees. While great for people, shade can be troublesome for lawns. As well as having to counter shade

issues at Ernest Street, South Bank has another potential problem for keeping a healthy lawn – the grassed area in the parkland's creative space 'Flowstate' receives extremely heavy wear and tear.

To meet these tough demands Lawn Solutions Australia recommended two new turf types to South Bank - Sir Grange and TifTuf; Sir Grange handles shade, while TifTuf tackles heavy foot traffic. Both lawns offer other benefits to South Bank, but first a look at the project work.

South Bank staff placed about 1000 square metres of TifTuf in late 2017 in the FLOWSTATE area. It performed well through the 2017/18 summer, but heavy traffic from May to August 2018 took its toll on the turf. In the middle of August, the South Bank grounds team aerated, fertilised and roped off the area. A bad result? Far from it.

Wonder over winter wear recovery

Head Groundsman at South Bank, Greg Mitchell, said that in his 11 years on the job he hadn't had a grass recover so quickly from winter wear. Just six weeks after the maintenance program the TifTuf looked incredible - Mr Mitchell couldn't believe a grass could recover so well from such heavy wear. In fact, TifTuf is the first Couch/Bermuda that's survived in this area without being oversown with ryegrass.

The team at South Bank installed 340 square metres of Sir Grange Zoysia in late 2018 at the Ernest Street area to handle the semi-shaded conditions. South Bank Parklands look for new options and the latest innovations for their high-profile position in the public arena. Sir Grange Zoysia fits that bill for lawn and stands out as a key feature and meeting point for the Brisbane public.

Not only can Sir Grange Zoysia handle semi-shaded conditions, it maintains excellent turf colour year-round, uses less water and most importantly provides a fantastic surface for public use.

And TifTuf? As well as self-repairing, TifTuf requires less maintenance, less fertiliser and shows better weed resistance than standard turf varieties. These extra benefits add up to an easy to manage lawn year-round.



Sir Grange Zoysia in the heavily shaded Ernest street entrance has provided a beautiful area for the public to congregate



TifTuf showing great resilience under heavy traffic in the "Flow State" creative area of Brisbane's South Bank Parklands

Broken Hill Community Health Centre, NSW



Broken Hill Health Service is a major rural referral centre providing a range of vital inpatient and outpatient services for numerous residents across the far-west of NSW.

As a crucial source of medical care for many, a \$30 million redevelopment is currently underway which includes the upgrade of Broken Hill Hospital and construction of a new integrated Community Health Centre including a five-chair dental health facility; child, family and community health services; new staff office accommodation, and the reconfiguration of the hospital's ambulatory care wing to expand cancer care services and consolidate patient waiting areas.

The Solution

In seeking to ensure the new centre was visually appealing, as well as functional, LYSAGHT ENSEAM® wall cladding was selected for the Health Centre - a highly popular profile from the LYSAGHT ZENITH™ range.

With the timeline of the project requiring product supply to be arranged before an installer was awarded, Hutchinson Builders naturally went directly to Lysaght as the two companies have enjoyed a good relationship over many years. The brief for the project required a cladding that was architecturally striking whilst being able to be readily used for

the modular construction methodology. In discussing the product supply, the Lysaght team put forward ENSEAM™ cladding as an alternative solution, as Hayley Eccles, Lysaght's Toowoomba Branch Manager, explained.

"LYSAGHT ENSEAM® cladding delivers a bold rib and visual, has ease of install and is backed by Lysaght's comprehensive testing to Australian Standards," she said. "It was therefore a very easy decision for Hutchinson's to propose LYSAGHT ENSEAM® cladding to the project specification team. Likewise, the project specification team saw the benefit that LYSAGHT ENSEAM® offered and confirmed its selection in the specification as a result. "For Hutchinson Builders on this project, as with every Lysaght customer, our goal is always to deliver the most cost-effective and suitable solution to meet their needs."

The Process

One of Australia's largest privately-owned construction companies, with a proud 105-year history of excellence in building, Hutchinson Builders have proven their modular build-style with many other projects including a hospital in Alpha in Central West Queensland.

As such, Hutchinson chose the same method in delivering for the new Broken Hill Community Health Centre, building

the required structures in modular form at their Toowoomba fabrication yards, where they were assembled in 42 modules and transported via 42 semi-trailer loads to Broken Hill for reassembly on site and subsequent internal fit out and finalisation of roofing.

In delivering for the remote-area project, Toowoomba-based Hutchinson Builders elected to provide a cost-effective and convenient modular construction solution which featured LYSAGHT ENSEAM® cladding in COLORBOND® steel colours Wallaby® and Woodland Grey®.

LYSAGHT ENSEAM® Cladding

One of five European-inspired profiles available in Lysaght's ZENITH™ premium range, LYSAGHT ENSEAM® cladding features broad flat pans and a lower, yet substantial rib, which combine to form a distinct visual dynamic. While possessing clean and striking good looks, LYSAGHT ENSEAM® cladding also has an easy style that makes it a very versatile solution for contemporary architectural designs.

LYSAGHT ZENITH™ Architectural Profiles

Inspired by the best in European design, Lysaght's ZENITH™ range provides a stylish suite of profiles that deliver a striking visual impact wherever they are used.

The LYSAGHT ZENITH™ range is available in the contemporary COLORBOND® steel colour range, the superb COLORBOND® Metallic steel colour range, the stunning COLORBOND® steel Matt colour range, the expansive colour array of the LYSAGHT YOURCOLOR™ custom colour offer and also in unpainted ZINCALUME® steel.

For style with peace of mind, every product in the ZENITH™ range has been tested in Lysaght's NATA accredited facility to ensure it not only adheres to Australian Standards but can also meet the rigorous challenges of Australia's harsh conditions, even in cyclonic regions.



Broken Hill Health Centre featuring LYSAGHT ENSEAM® cladding



0341p LYSAGHT purlins and girts in structural steel; 0423p LYSAGHT roofing - profiled sheet metal
0436p LYSAGHT cladding - profiled sheet metal

www.lysaght.com

The Ville Resort-Casino Townsville, North QLD



Herringbone tiles installed using Keraflex Maxi S1 adhesive in the Quarter Deck Restaurant areas

The Ville Resort-Casino appointed Hutchinson Builders to complete its \$30 million major redevelopment. Hutchinson Builders' Townsville office managed the project, that included, among other developments, three new restaurants, a poolside function space to fit up to 700 people, an infinity-edge pool with private cabanas and a swim-up bar, and an elevated deck connecting the pool to the Lobby level above.

"Part of our criteria in selecting the builder was that the company needed to be able to manage a project of this scope, have an office in Townsville and use local sub-contractors where possible," The Ville Resort – Casino CEO Brad Morgan said. "The Ville is supported by its community – the people who dine at the restaurants, stay at the hotel, hold and attend functions at the venue – and keeping as many dollars from this development circulating within Townsville is important."

Hutchinson Builders are a family owned and operated business with an office in Townsville for almost 30 years and employ more than 35 full-time office and site staff locally. They are committed to supporting the local industry and all sub contract works and material supply for this project will be sourced and provided by local businesses. Hutchinson Builders are excited by their appointment as builder for The Ville Resort-Casino Redevelopment and the opportunity to support our local industry. Mark Phillips (Townsville Manager) said, "This extension and refurbishment

project will provide Townsville with a venue not only catering to the needs of the local community but will also provide a drawcard for tourism". We will work side by side with The Ville to deliver this significant landmark project that we can all be proud of". Also scheduled this year, the current Lobby Bar will be redeveloped as a casual dining outlet, with access from both the hotel lobby and casino. The new restaurant and bar design includes indoor and covered outdoor dining for patrons to take in the views over the pool to Magnetic Island. "Our goal with this restaurant-bar is to create a venue with a laidback atmosphere that is set up for live music; the design of this bar will attract top notch DJs," Mr Morgan said.

Requirements

Jerry and the Tilemakers – a local tiling contractor from Townsville were appointed to complete all the ceramic tiling installations for this project.

Jerry and the Tilemakers had to create falls underneath the herringbone patterned tiles and they used TOPCEM (fast setting engineered screed) to fast track the installation along with Mapelastic Smart (cementitious waterproofing membrane) to waterproof the decks.

Approach

Keraflex Maxi S1 (high performance ceramic and stone adhesive) was used as the adhesive in both the foyer areas and the indoor/outdoor restaurants. Keraflex Maxi S1 was formulated by MAPEI for installing large format tiles allowing installation of the adhesive up to 15mm.

Result

Hutchinson Builders waterproofed the planter boxes and ballast tanks around the pool with Mapelastic Smart.

Kirratech Pool services completed the installation of pool mosaic works with Kerabond Plus and Isolastic 50, grouted the mosaics using Ultracolor Plus (premium grout containing DropEffect technology for water resistance and

BioBlock technology to resist mould and mildew) and sealed all joints with Mapesil AC silicone sealant.

The internal bathrooms were completed with Tixobond Fine S1 and waterproofed using Mapelastic AquaDefense waterproofing membrane, due to their fast track abilities.

Tixobond Fine S1 was chosen as the perfect installation mortar as the adhesive needed to be mixed in the basement before 10am and the extended pot life of the Tixobond Fine S1 was perfect as it could be used all day without mixing any more on site to keep noise and dust to a minimum.

Systems by Mapei ensured all companies involved had peace of mind in the installation.



Kerabond Plus adhesive mixed with Isolastic latex additive was used to install the tiles in and around the pool areas.



Quarter Deck Toilets

Multi-Level Car Park, Melbourne Domestic Airport, VIC



If you're arriving in Melbourne via their domestic airport, this multi-level carpark is hard to miss, filling the background as you walk out of the terminal. As you can imagine, it is in constant use over all levels by a large number of vehicles. What about the concrete floors? How can we ensure they are durable, wear-resistant, and long-lasting?

Working with the Client

For this project, the construction firm was considering topical floor sealers – a very common approach. Film-forming surface sealers offer some protection to the concrete, but there are some drawbacks. In particular, the topical sealer itself is subject to wear over time, and needs to be replaced periodically. Also, the protection is only to the surface, or a very shallow layer of the concrete. Over time this leads to delamination and cracking.

Markham introduced Aquaron 1000 to the project team. Aquaron 1000

overcomes the issues associated with surface sealers, with some added benefits besides.

- Seals the porosity of the concrete permanently, never needing re-treatment.
- Hardens the concrete to a depth of 150mm, removing the risk of delamination.
- Prevents concrete dusting, whether due to traffic or carbonation.
- Does not contribute to tyre squeal.
- Enhances curing.

That last point was the clincher for the builder. Because Aquaron 1000 enhances concrete curing (equal to water curing) it can be applied early, reducing two processes to one and replacing both the curing compound and the sealer.

The Advanced Result

The result is a durable concrete floor

slab, highly resistant to traffic wear over time. A win-win situation! AQUARON 1000 is also great for warehouses, data centres, and any other exposed concrete floors under stress or traffic.



Melbourne Airport car park nearing completion



Melbourne Airport car park – completed and in use



Panorama shot of the Melbourne Airport car park under construction



0310p AQUARON 1000 HYDROGEL in concrete - combined; 0310p CONQOR B52 HYBRID-HYDROGEL in concrete - combined; 0325p AQUARON 7000 HYDROGEL concrete protection; 0651p AQUARON CONCRETE SUBSTRATE TREATMENT in resilient finishes

www.markhamglobal.com



MODDEX GROUP is Australia's leading developer and manufacturer of an extensive range of modular steel handrails, guardrails, balustrades, and other barrier solutions that ensure the safety of people and the protection of property. Moddex innovation is specified and sold throughout Australia and New Zealand. Moddex is recognised for its flexible, robust, cost effective and easy to install systems that simplify the installation of handrails and balustrades in all environments and for a broad range of applications within the Defence, Construction, Mining, Transport, and Education industries, as well as the Public Utilities sectors. www.moddex.com.au



Monkeytoe are full-service specialists for smart, safe and compliant plant mounting and screening systems. Monkeytoe provides solutions for HVAC plant mounting and access, all to improve buildability and reduce cost and risk when designing and installing access and mounting systems. www.monkeytoe.com.au



Parchem Construction Supplies is a leading manufacturer and supplier of products and equipment to the Australian and New Zealand concrete and construction markets. Through all of its divisions and heritage, Parchem has built over 50 years' experience in servicing the construction, civil, and concrete industries. Parchem brings solid experience and technical expertise in the supply and manufacture of construction and decorative concrete products, equipment and tools. www.parchem.com.au



For over 50 years Polyflor has been providing Australia and New Zealand with resilient vinyl flooring, without comprising on design and functionality. Their floor coverings are suitable for a variety of commercial and domestic installations. Available in an array of colours and designs, Polyflor's ranges are hard wearing, durable, and low maintenance, offering both style and substance. Polyflor's environmentally friendly flooring is GreenTag certified and 100% recyclable. Polyflor really is 'flooring design for a better environment.' www.polyflor.com.au



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Raven's door and window sealing systems have become synonymous with quality, value, and reliability, backed by service excellence, which is why it is the brand that architects, specifiers, and builders can rely on.

Raven's world class testing facility means that we are constantly developing new ways to respond to the rapid advances in the building industry. www.raven.com.au



Caulfield to Dandenong Level Crossing Removal Project (Skyrail CTD-9), VIC

moddex



Caulfield to Dandenong Level Crossing Removal (Skyrail) Project

A large infrastructure project always has its complexities and the \$1.6 billion Caulfield to Dandenong Level Crossing Removal (Skyrail) was no different.

A Challenging Walkway System

When the Skyrail contract was awarded in 2016, one of the project's hurdles was the need for a platform walkway system along elevated sections of the track for maintenance access and emergency evacuation.

Pre-cast concrete beams on which the trains would run could only sustain a certain weight so every kilogram counted. Fortunately for Australian guardrail manufacturer Moddex, consultation began early although the contract wasn't awarded for another two years. They then had just four months to complete it. Moddex were to supply more than 30 kilometres of handrails along the elevated track and its associated structures. The walkway system had been discussed early in the project, giving Moddex sufficient time to come up with a solution and to manufacture the guardrails which needed to be either mounted onto a custom fabricated, free-standing structure (which was both expensive and time consuming) or tie into a handrail system.

Moddex's Solution

The option Moddex chose – a combined walkway/handrail system – had with its own challenges. Not only did it need to support the walkway but also meet load requirements. Moddex was able to solve loading issues by innovating a proprietary, pre-engineered modular

system, Tuffrail® – Industrial Handrails' and creating a new walkway support bracket. They developed a bespoke casting which enabled the bracket to fix to their handrail post whilst providing the support and structural strength required for the walkway.

Can it Pass the Safety Test?

During construction, another problem emerged – safety guidelines required an enclosed area on the bridge decks for teams to work inside. The contractors asked if the Moddex handrail system could be used as the vertical support for hoarding/mesh paneling on the internal walkways. This would need to be fully hoarded with plywood to 1.8m high to meet wind loading standards. This new challenge was overcome by testing the system beyond Moddex's routine requirements. The load applied at each test point passed, removing the need for temporary scaffolding handrails during construction.

Minimum Clearance is Needed

Lastly, Moddex assisted the project team achieve minimum path clearance in another area of the project between the standard handrail and 'demarcation rail' (a rail preventing falls onto the tracks in emergencies). To meet the path clearance, Moddex modified their proprietary AR10 handrail system, supplying a small diameter for the 'demarcation rail' and three new fittings to suit. Moddex was given a small window of only 3-4 months from being awarded the contract to delivery of its walkway system guardrail modular components which was possible thanks to the company's superior communication and planning systems and processes. The guardrail system was installed independently by a Lendlease contracting team, which assisted the contractor to meet their project deadlines.

Successful Delivery with Great Communication

Not only did Moddex deliver all the necessary componentry on time but the superior aluminium finish was extruded locally in Melbourne, providing a win for

local procurement.

The results were threefold.

- By using aluminium guardrails instead of conventional steel, critical kilos were saved with a correspondingly positive effect on the project's budget.
- The lifespan of the guardrails was extended, lengthening the time before they need to be replaced.
- A custom-designed bracket did away with the need for heavy structural steel underneath the walkway.

By involving Moddex early in the project, utilising their product innovation skills in mounting the walkway to their handrail system, and by using an aluminium fabricated structure, significant time and dollars were saved. Lendlease Contract Administrator says, "Moddex have been great communicators to all project team members and delivered on time with very little fuss."

Moddex was awarded Best Supplier of the Year in the 2019 ACA Awards.



Moddex proprietary handrail system (Tuffrail® Industrial Handrail in Aluminium)



Moddex proprietary handrail system (Tuffrail® Industrial Handrail in Aluminium) combined with bespoke walkway support bracket for Level



7-Eleven, QLD

Monkeytoe

How do you get a new plant deck installed with no plans, no time, and still achieve the highest compliance ratings?

Problem

That was the challenge for Matt Harriden, Managing Director, Premier Build when he discovered during the construction of a 7-Eleven service station in Brisbane that the plant deck hadn't been drawn as part of the plans. To meet the deadline there was no time to get the engineers to draw it, and the structural steel installers to make it.

Installation

Engineers for the project introduced us to the client and he was confident that, with us, he'd be able to stay on his construction programme and continue to work with other trades to complete his job on time.

"I found Monkeytoe really easy to deal with, really professional and they came over to run through everything with me on site, which was reassuring" says Harriden.

"Overall the project delivery was

fantastic, I had one point of call which was directly to the installer." Mark Terepai, Manager of Top Level Projects who managed the installation added that the site had difficult and limited access but like all good challenges, working with us was easy to find a solution. And he was extremely happy with the quality of the deck as well, "Comparing it to other platforms it is a lot stronger..." Terepai said "and able to withstand the heavy loads, with the added bonus of sitting on top of the roof and not penetrating and damaging the new roof."

Product

Monkeytoe HVAC platforms are manufactured in Melbourne from Australian aluminium extrusion and are engineered to the highest Australian standards. Along with these benefits, Monkeytoe plant decks also have anti-vibration features, incomparable strength qualities, and can be made any size to hold equipment of any weight. Compliance is critical in all aspects of the construction of a 7-Eleven service station, and we needed to comply to the most rigid standards. It only took a day to get installed, and we were really happy to make Matt's job easier and allow him to keep his project running smoothly, and in Matt's words "...really, really happy with the delivery and the quality of the finished product."

Both Matt and Mark are happy that our solutions made their jobs easier and hassle-free. "It's quick, it's easy and it's affordable"



Any size. Any weight. That's the Monkeytoe HVAC Plant Platforms



Matt Harriden (Managing Director of Premier Build) and Mark Terepai (Lead installer for Top Level Projects) concur on the overall success of the Monkeytoe HVAC Plant Platform on this 7-Eleven project



A perfect install. A tidy, fit-for-purpose louvre-clad HVAC plant platform

Port Kembla Coal Terminal, NSW



Port Kembla Coal Terminal (PKCT) is a key coal exporting facility on Australia's East Coast, 72 km South of Sydney. It services two of the nation's richest coal reserves, the southern and western coalfields of New South Wales, exporting high quality coking and steaming coal around the world. The upgrade of the Port Kembla Coal Rail lines is vital to keep operations running smoothly.

The rail lines at the Coal Terminal have been in use for many years and the lines have become uneven through ground settlement, reducing efficient operation. The rail lines needed to be levelled with precision to the correct height. Parchem assisted with product specifications, the pre-site works, trial pour for bearing pad and on-site support. Parchem supplied 12,000 litres of Conbextra EP65 plus and large volumes of Conbextra HS grout.



Application of Conbextra EP65 Plus



Rail bearing pad grouting using epoxy grout, Conbextra EP 65 Plus

The Solution

Each ship coal-loader rail was raised and re-levelled in sections. Some rail lines required temporary under-pinning with high performance cementitious Conbextra HS grout, before final installation of pad style supports using ultra high strength epoxy Conbextra EP65 Plus grout.

Other lines required strip style grouting to the entire underside of the rail length, using high strength, cementitious Conbextra HS grout. Formed control joints were placed at 1.5m centres.

The Benefits

Benefits of using precision grouts:

- The high flow ability and high ultimate strength of Conbextra HS - ideal to fill the void of the bearing pad, requiring very high ultimate strength
- Conbextra EP65 Plus provided a perfect durable grouting solution to handle heavy dynamic loads expected on the track
- Early strength gain and fast installation of Conbextra EP65 Plus significantly reduced down time

Customer: Port Kembla Coal Terminal

Sector: Rail

Project date: 2015 - 2016



D'Arenberg Cube, SA



Set among the vines in the heart of McLaren Vale's wine region sits the d'Arenberg Cube. The glass-encased multi-purpose building is arguably one of the most iconic tourism destinations in Australia, receiving an award for best architectural design in the 2018 Australian Good Design Awards. The d'Arenberg Cube has succeeded to capture attention and increase visitors to the area.

Inside the five storey building is a new cellar door, bars, private function rooms, a restaurant and a museum on the ground floor. Each level of the d'Arenberg Cube has a spectacular view of the surrounding wine region.

To meet the building's various sealing requirements and to compliment the prestigious nature of the project, Raven was specified due to its trusted

reputation and its high quality products. Raven provides the industry's most extensive range of NCC compliant; NATA tested and certified Door & Window Sealing Systems. Raven is also independently certified to international quality management standard ISO9001 ensuring you receive the best products, at the best price, backed by the best service every time.

Raven provided sealing solutions for the various doors throughout the project, including the unique folding glass doors along the external perimeter of the building. These doors were sealed by Raven to meet NCC mandated compliance for weather and energy in a heavy duty use application that required minimal maintenance.

Architect: ADS Architects

Engineer: BESTEC Engineers and CPR Engineers

Managing Contractor: Sarah Constructions Pty Ltd

Photography: Courtesy of d'Arenberg



d'Arenberg Cube set among the vines



Inside the d'Arenberg Cube restaurant dining area



0194p RAVEN door seals and window seals

www.raven.com.au



"The Australian Institute of Building surveyors congratulates NATSPEC on their work to update and publish their National Building Specification to reflect the NCC BCA 2019 requirements.

Building surveyors gain significant confidence when a project has utilised a National Building Specification published by NATSPEC. In the current environment of product uncertainty and complexity of design, it is reassuring to see a clear and thorough approach to specification of buildings. The benefits of this are a smoother assessment process and greater certainty through inspections. The end result is that building surveyors operating in statutory roles throughout Australia are better able to deliver on their responsibilities to the public and their clients.

AIBS continues to fully support the National Building Specification from NATSPEC."

Troy Olds, National President, AIBS



Regupol (Australia) Pty Ltd is the Australasian office and distribution network for the Regupol® and everroll® sustainable flooring product brands. The company has been operating in the region for over 25 years, offering solution based products and technical services for all kinds of sustainable flooring and soundproofing solution based projects. The company is conveniently located at Smeaton Grange, NSW, and offers nationwide distribution of the Regupol® and everroll® product lines. www.regupol.com.au



For over 60 years, Resene has forged a reputation of excellence and quality in manufacturing products designed to meet the demanding standards of architectural and building industry professionals. The Resene product range includes paint and specialist coatings for residential and commercial buildings. To help building professionals keep abreast of new developments in our product range, Resene has an innovative range of architectural services and reference materials, including technical and specification manuals, the Resene Total Colour System, samples, and online information. Sophisticated tinting technology enables Resene to produce durable colour options that remain true to colour long after they have been applied. Interlinked systems for decorative and high performance coatings allow you to achieve the same spectrum of colours in a wide variety of products. www.resene.com.au



Revolution Roofing provides a range of steel roofing, walling, and building products for the Australian domestic, commercial, and industrial building industry. Using only BlueScope and Colorbond steel, our products are further backed by our extensive range of guarantees.

Since the opening of Revolution Roofing, our range has grown to include all the latest roofing profiles, gutters, fascias, ridge cappings, valleys, flashings, verandahs, and even a customised sheet metal fabrication department.

We are working with building professionals to further develop new and unique roofing and walling products, which is evident in our latest release of the exclusive True Oak series of profiles. www.revolutionroofing.com.au



State of the art facility in Moore Park, NSW



UTS corridor

For the first time, Australian Rugby has a training base. A state of the art facility at Moore Park that is home to all the national teams including the Wallabies, Wallaroos and national Sevens teams, and is also the home for UTS Sport Science.

The five and a half story building (Design & Construct by AW Edwards) houses the ARU's high-performance training and education facility while the UTS component houses teaching areas, laboratories and training rooms for their sport science programs.

Performance Sport Flooring

The facility is multi-use, requiring a floor that can withstand the assault of training professional athletes, while also remaining soft, quiet and comfortable for education purposes. The real

challenge was to find a flooring that could provide all this, and harmonise on a design level by complementing the interior design of the building and remaining easy to clean.

Regupol Australia's vast product range allowed the facility to use our hard-wearing products throughout the facility, bringing a harmonious look and feel to the entire facility. We were able to contribute to this state of the art facility with over 3200m² of rubber flooring products.

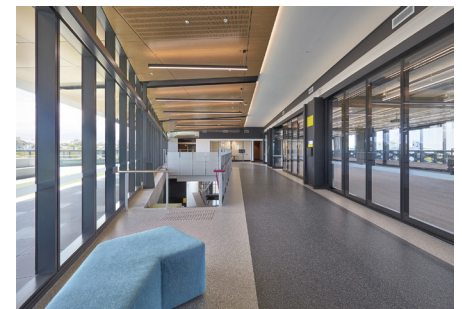
Specifically in the gymnasium, which utilised one of our Regupol® Composite Flooring Systems. This unique dual layer system enhances the athlete's safety by absorbing and dissipating excess forces, ensuring the athletes perform at their highest level.

Pre-Sealed excellence

Utilising Regupol Australia's homegrown Pre-Sealing technology, this world-class facility has easy to clean, hard wearing floors throughout including entryways, hallways and the main gymnasium. Pre-Sealing the material allowed for maximum ease and speed during installation and the end users can safely enjoy the floor in the knowledge that it will perform for many years.

Designing Highlights

Regupol Australia was able to incorporate design elements into the flooring with different, but complementary colours. Allowing the designers to eloquently harmonise the interior walls and fixtures with the flooring while subtly steering users around the facility with geometric patterns.



Breakout area

All these benefits helped create a world-class training and education centre for the ARU and UTS giving them the future in sport and sport science for many decades to come. Contact Regupol Australia today to discuss your flooring needs or use our NATSPEC branded work section (0651p REGUPOL in resilient finishes) to easily and safely specify your next project.



ARU Gymnasium



0651p REGUPOL in resilient finishes
0473p REGUPOL acoustic floor underlays

www.regupol.com.au

Black Mountain House, ACT



This project was heavily influenced by trees – both from the perspective of planning regulations, streetscape and carefully planned views, and the colours.

The clients were attracted to the existing brick veneer home, on a large shady block, that looks out at the intriguing twisted branches of mature silver-leaf stringybarks that line the street. It was only when they began working with Light House Architecture and Science that all realised the challenge presented by a large mature (healthy) gum tree located centrally behind the home.

Extensive concept exploration and planning hurdles came to pass, finally resulting in the removal of this gum, and the resulting extension steps around, and the framed views, of the remaining acacia. All of this was achieved while working with clients posted overseas, with not much more than a delayed phone line.

However, these clients who were clued on to opportunities and beauty, delivered an equally lovely brief. They requested a home that was 'warm (physically and emotionally)', hoped for something 'interesting and surprising' that would be 'juxtaposed' against the existing home, and requested 'light filled' spaces while remaining 'as energy efficient as is reasonably possible.'

The existing house underwent significant reconfiguration, with the addition of two pop-outs to accommodate a space efficient program. Importantly, the front living room and window was kept to retain the strong connection to the street trees.



Dining room

The rear extension is modern, textural, warm and bright. Raked ceilings and clerestory windows fill the space with light while cosy study nooks and bench seats maintain intimacy and social family living. The area features materials such as various timbers, and burnished concrete with modern gloss black tiles and joinery. The rich red and charcoal stained cladding, in Resene Waterborne Woodsman tinted to Resene Totem Pole (bright red) and Resene Sheer Black (modern black), references colours from the Australian gum tree bark.

The collaborative architect + scientist design approach allowed the team to optimise the energy efficiency of the

home from early exploratory concepts to the final construction documentation. Including the renovation of the existing home (originally 2.3 stars), the new overall house achieves an EER of 7.1 stars, meaning that it will use almost 30% less energy than a standard 6 star home. Conscious design and involvement during construction also afforded this home an air leakage rating of 9.5 air changes per hour at 50 Pascals (the average Canberra home is very leaky, at a typical rating of 20+ ACH @ 50Pa.)



Kitchen and hallway

"Undertaking this project while living overseas was daunting, but Light House were responsive to our needs and tastes and let us be an integral part of the design process. They helped us through a challenging planning process and delivered on-time and on-budget. We now have a house that is not only stylish and energy efficient, but also suits our lifestyle and, more importantly, feels like home." – the clients.

The Black Mountain House respects its street and community, responds to its climate and site, and captures the essence of a modern Australian culture.

Architectural specifier: Light House Architecture and Science

Building contractor: 35 Degrees Pty Ltd

Photographer: Rod Vargas



Deck and backyard of the Black Mountain House



Camfield Tavern, WA



Completed in 2018, The Camfield Tavern has fittingly been described as a mega-Pub. Boasting the title of Australia's largest pub, The Camfield sits proudly next to Perth's Iconic Optus Stadium and provides an amazing new entertainment venue for both locals and visitors alike.

The Camfield sits on a 7,500m² site and is less than 100m from the sporting heart of Perth. The site, previously the Burswood golf club, was re-developed to incorporate "Old and New" harnessing the beautiful existing buildings of the Golf Club and the new and exciting pub that we enjoy today. As the newest addition to this exciting precinct, The Camfield facilities include a fully functional microbrewery, 5 bars hosting 175 beer taps, two pizza ovens together capable of producing 4 pizzas per minute, a container bar, a 5m wide

outdoor TV screen and a traditional beer garden.

Solution

As a modern and clean roofing and wall cladding product, Maxline is the pre-eminent product, unequalled in its space. Designed to add drama and style to large-scale architectural projects, predominantly commercial structures and public buildings. For grandiose architectural or commercial products, Maxline adds elegance and character. Superior designs are nothing without superior products. With Maxline, style is second nature.

Revolution Roofing developed this profile and named it after renowned South Australian architect and friend, Max Pritchard. Providing a 340mm wide standing seam style cladding, Maxline340 delivers clean modern lines to the most important Residential and Commercial projects Australia wide.

Process

When it came to choosing a roof cladding product, the renowned design team at Oldfield Knott Architects knew just what product was needed to honour and complement their design intent for this innovative new building. With Monolithic portal frames, timber boards and equitone panels make up the modest yet striking facades of

the Camfield, the designers looked to Revolution Roofing, and Maxline340 to bring the roof to life. Maxline 340 flat pan profile was proudly specified to honour the pristine look of the innovative building.



Visitors to The Camfield and presented with the opportunity to wine and dine near the stadium and enjoy their pre and post-game entertainment under 1850m² of Maxline340 roof. With the iconic Optus stadium in the distance, these hero images of the Camfield Tavern are truly majestic and a real head turner for sure.

With this building now adding to the extensive list of buildings across the country pompously clad with the spectacular Maxline cladding by Revolution Roofing, you are sure to see Maxline in your travels.



True Oak Deep superior corrugated and Maxline 340 flat pan profile are featured on the Dune Pavilion at Longitude 131°



0423p REVOLUTION ROOFING in profiled sheet metal
0436p REVOLUTION ROOFING wall cladding

www.revolutionroofing.com.au



Rondo is a market leading manufacturer and supplier of wall and ceiling systems, and complementary accessories. Rondo is dedicated to providing the systems needed to realise visions effectively and in the most economical way possible, including systems where specific wind pressure, seismic design, or acoustic design is to be accommodated.

Rondo's commitment to providing market leading solutions, customer service, and high quality products has led it to being behind the best buildings throughout the world. www.rondo.com.au



Safetyline Jalousie is a leading louvre window brand with a history of more than 50 years in Europe. Since its arrival in the Australian market in 2009, Safetyline Jalousie has quickly established itself as a high quality option for building specifiers looking for a louvre window system that delivers wide louvre spans (up to 1.4m), impenetrable building security, and weatherproof seals. Safetyline Jalousie is distributed by SMR Designs, who have been involved in the Australian home improvement and commercial building market for more than 20 years with its other external louvre product, Vergola. www.safetylinejalousie.com.au



Tarkett is a worldwide leader in innovative and sustainable flooring and wall covering solutions. Tarkett has a diverse portfolio of products in the global flooring industry, offering integrated, customised solutions for complex spaces and specific usages.

Tarkett sells globally 1.3 million m² of flooring everyday to residential and commercial customers for health care, aged care, education, housing, hospitality, office, retail, and sports projects. www.tarkett.com.au



Tate is an industry leader in the design, manufacture, and installation of Access Floors, Structural Ceiling systems, Aisle Containment solutions, and Airflow Panels for the commercial office and data centre markets. Tate Access Floors has been manufacturing since 1952, employing over 500 people globally, has six manufacturing sites, and has installed over 18 million m² of raised floor globally. Tate is a wholly owned subsidiary of Kingspan PLC Ireland. www.tateaccessfloors.com.au



Taubmans is one of the oldest paint brands in the market. Taubmans has been painting Australian homes for over 110 years. Back in the early 1900s, George Taubman built the company on a foundation of technical superiority. Since its inception, Taubmans has grown to become a major player in the Australian Architectural Coatings Market. It is also responsible for launching well known and innovative consumer paint brands such as Endure with Nanoguard, Living Proof Silk with Teflon, Easycoat with Microban, and All Weather with Dirt Shedding Technology. www.taubmans.com.au



New Royal Adelaide Hospital (NRAH), SA

RONDO®

The South Australian Government embarked on a project in 2006 to construct the Adelaide Hospital (NRAH) with 800 beds the flagship healthcare facility nominally costing \$2.3 Billion. \$1.85 Billion of this was for design and construct with the remainder to go towards procurement and installation of state-of-the-art equipment.

Requirements

The National Construction Code (NCC) of Australia divides buildings into four categories of importance in accordance with the level of risk that their failure would present to life and property and also their function within the community or beyond. Hospitals fall into Importance Level 4, meaning that they “are essential to post-

disaster recovery or are associated with hazardous facilities.” Designers must develop a solution that takes into account the seismic requirements of a hospital by examining its environment, particular needs, and features and the interaction of these elements during a seismic event.

Approach and Results

Due to the Importance Level 4, the NRAH project was significant to Rondo. The Rondo® Technical Services Team worked closely with the NRAH design and engineering teams to develop innovative seismic system solutions for over two and a half years prior to the commencement of construction. This ensured all factors had been considered and requirements had been met.

A combination of the Rondo® Seismic Ceiling and Wall systems and solutions was engineered and installed at NRAH, where the Rondo® Technical Services Team worked closely with the site contractor of the Hospital. They provided extensive design support to meet ‘specific project’ requirements, which include not only seismic specifications but also fire and acoustic requirements. The partnership between Rondo® and NRAH yielded ground breaking results in terms of customised designs for seismic solutions, which are transferable to other buildings with post disaster functionality. Specific seismic solutions supplied by Rondo® to the new RAH include 92mm studs at 0.55BMT and 0.75BMT, 0.50BMT Track, Seismic Deflection Head Track, QUIET STUD and Nogging Track.

These systems supply all the required components and fittings to ensure effective resistance to seismic loads during an earthquake. For the benefit of designers and specifiers, Rondo® offers an online Seismic Wizard design tool that enables a quick and easy view of the Rondo® Seismic Ceiling Systems and nominated seismic loads applicable to their project.

Benefits

The NRAH has been a driving force behind many customised Rondo® Seismic Designs, and for other Hospital developments to incorporate these Importance Level 4 design requirements. With Rondo® having Seismic Solutions for walls and ceilings, the company is well positioned to offer superior support to other projects with seismic requirements going forward.

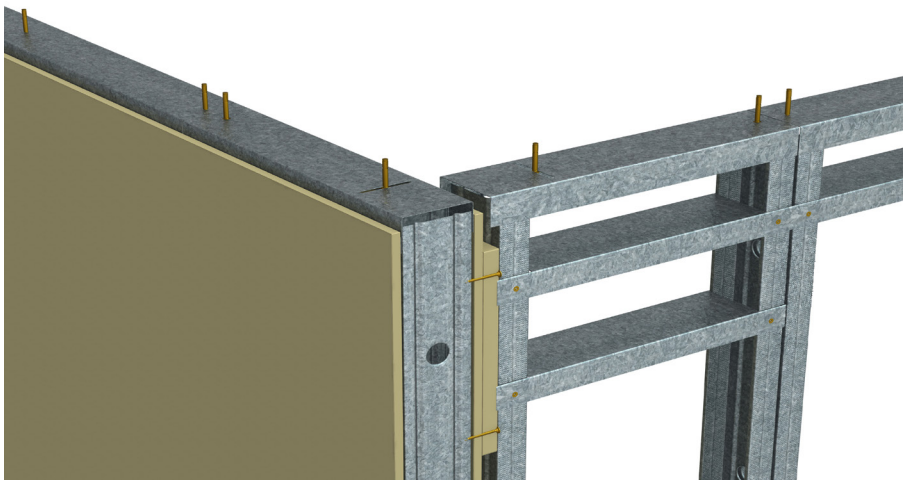
Architect: Silver Thomas Hanley

Builder: Joint venture with Hansen Yuncken and Leighton Contractors

Contractor: Brighton Australia

Location: Adelaide, South Australia

Project Value: \$1.85 billion



Seismic Wall System



The Royal Adelaide Hospital Outside



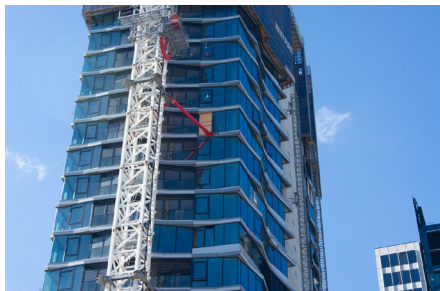
0453p RONDO in doors and access panels; 0522p RONDO in partitions framed and lined
0531p RONDO in suspended ceilings combined

www.rondo.com.au

Residential Tower York and George Sydney, NSW



The York and George building weaves into Sydney's skyline. As it soars upwards, successive floors shift in and out to create shimmering folds across its surfaces. Standing 137m tall, within its 40 floors lies 199 apartment units. There is also a host of retail opportunities on the ground floor.



From an architectural point of view, the building aims to be one of Sydney's most striking. However, developing high rise buildings presents an array of challenges for architects, engineers and builders. Key among those challenges, particularly in a heavily built up area like Sydney's CBD, is providing ample light and natural ventilation. For this, buildings rely on their windows. But, options become somewhat limited because many window types cannot meet fall prevention measures and the significantly higher performance ratings that are associated with high rise construction. The team behind the York and George project had to confront such issues and turned to Safetyline Jalousie to help them.

John Wardle architects specified a total of 720 louvre windows to be installed in the balconies of each apartment and also on the building's podiums. The nature of louvre windows ensures that maximum ventilation is achieved and reduces the reliance of manufactured air. But the features unique to Safetyline Jalousie that were pivotal in the architect's decision were;

- The system's impressive wind and water ratings, as the effects of wind and water heighten as a building gets taller
- The ability to use laminate glass,

preferable for high rise construction because it reduces the potential risk of falling broken shards

- The sound reduction of 33RW which would allow residents to shut out the noise of the bustling city below
- Compliance with fall prevention, even when the louvres are open to full capacity and;
- Ease of installation which was ideal for the nature of the build and assisted in meeting the project's timeline

The York and George project highlights some of the key issues high-rise buildings must confront. Windows need to provide natural light and ventilation

and protect against the harsh elements. They also need to confront the performance and safety concerns that come with installation at heights.

Safetyline Jalousie's louvre windows exceeded every requirement placed in front of them and can now be seen soaring high into Sydney's skyline.

Architect: John Wardle Architects

Developer: Fife Capital

Builder: Watpac

Project Specifications

Quantity Supplied: 720

Height: 1009mm (7 Blades)

Width: 1200mm

Colour/Finish: Eternity Charcoal Pearl Satin

Louvres: 6.38mm Clear Laminate

Operation: Standard Levers



Images of the 137m high tower nearing completion



Telethon Kids Institute Perth, WA



Designed by Woods Bagot and built by Multiplex, the Telethon Kids Institute's new, larger home at the Perth Children's Hospital features world-class equipment and facilities to assist research into causes and treatments for childhood illness.

Woods Bagot workplace design leader, Stirling Fletcher, said the architects' design vision for the Telethon Kids Institute (TKI) was inspired by different parts of the human body. "The design team compared spatial relationships of the facility to that of human biology systems," said Mr Fletcher. "The flooring design was a key component of these spatial ideas, as the canvas upon which to create aesthetics aligned to the biological symbols and patterns" Mr Fletcher said.

Specifications

Multiplex and its contracted Perth based commercial flooring specialist, Floorwise, were tasked with turning its design into reality.

Floorwise director, Peter Vodicka, said that upon examination of the proposed carpet tile specifications he noticed it was not a suitable choice for meeting the architect's design intent, budget and build program. "A 500mm x 500mm tile was initially specified," said Mr Vodicka. "The issue was that in order to achieve the intended visual effect and make it convincingly 3D, only a diamond shape would work.

With a fixed budget and a tight timeline there was no way to proceed as initially planned. Floorwise turned to Tarkett business development manager, Hazel Derrett, with an unorthodox idea to secure a diamond result from a rough situation.

"Focusing on the need for the tiles to be diamond-shaped, we sought a supplier who might be able to pre-cut them for us," he said. "We asked Tarkett's Hazel Derrett to liaise with Desso's factory in the Netherlands and they said they'd be willing to give it a go, which was unprecedented and so exciting."

"Normally with squares, the width is used up in a half-metre tile but DESSO make a carpet cloth two metres wide which is then backed and cut" said Mr Vodicka.

"We realised if the diamond shapes were adjusted to be set up almost like a herringbone, we would have no

wastage. I think the original allowance for wastage was 18 percent and we got that down to zero."

Over 5000 DESSO® Fields textured carpet tiles were specified, as well as DESSO® Tweed B529. DESSO® Fields tiles – which cover approximately 5000m² of TKI's flooring.

Installation Plan

Tarkett further assisted the process by designing an installation plan in collaboration with Floorwise, in order to avoid any shading implications.

"If the carpet tiles aren't installed with a uniform shading in the pile direction, then you will see that one tile has a different shade than the one next to it and it won't be seamless," said Tarkett's Hazel Derrett.

"We labelled all the tiles on the back, in sequence. Due to the floor pattern complexity, it took longer than a standard job. But because of the labelling system it was relatively swift for the installers," Ms Derrett said.

This would not have been the case if the tiles were hand-cut, however. "You're never going to get a job like that right – cutting diamond shapes by hand – because of the human element. Not even on a smaller job of, say, 100 square metres," he said.

The Result

After finishing the job, Mr Vodicka estimated that 30 percent less material had been required than would have been the case with the original cutting plan and also that it required 50 percent less time in labour.

Floorwise's Peter Vodicka thinks the way the carpet tiles were cut to suit the design may be a world-first. "I don't think it's ever been done before, so as far as I know it could be a world-first," he said.

Architect: Woods Bagot

Builder: Multiplex

Flooring Specialist: Floorwise



0651p TARKETT in resilient finishes
0652p TARKETT carpet tiles

www.tarkett.com.au

Aurizon Headquarters 900 Ann Street, QLD



In July 2017 Tate Asia-Pacific began work at 900 Ann Street – Aurizon HQ installing access floors across 14 levels for the Aurizon offices. With a team of six the job was finished by October including a supply only contractor for Levels 10 to 14 for installation for tenants.

Requirements

Aurizon had a selection of floor finishes in their offices including CFC (compressed fibre cement), carpet tile and woven vinyl. Tate worked with Hutchinson Builders to detail and simplify the design, standardising the

floor heights for greater long-term flexibility.

Approach

Tate offered design assistance to the architects and installation contractors, created shop drawings and provided cost analysis and project support.

Results

Tate's access floor systems allows flexibility for tenants to change the arrangement of their offices in the future.



Floor Grommet

Architect: John Wardle Architects
Builder: Hutchinson builders



Floor hatch



Access hatch panel



Sentinel-Surfers Paradise, QLD



A 30-storey luxury residential tower, Sentinel stands tall in the heart of Surfers Paradise, on the foreshore of the iconic Budds Beach. The building presents a striking symmetrical façade to the skyline of Surfers Paradise. It contains a mix of two- and three-bedroom apartments on lower and mid floors, and whole-floor sub-penthouses on the upper levels. All apartments are infused with luxury, providing a resort-style lifestyle for residents. Living spaces are generous, and feature sliding glass doors with access to the large functional balconies, which possess commanding views out over the Pacific Ocean.

Background

Sentinel was completed in 2001, and in the course of a regular planned maintenance cycle, it was recently given a full external repaint, from top to toe. This was combined with a round of relatively minor remedial and rectification works, including resealing of balconies, treatment of rust on steel window frames, and the treatment of minor areas of concrete cancer on balcony soffits.

Requirements

The challenges presented by the repainting of such a prominent tower are partly specific to the coastal location, and partly specific to the height and articulation of the building. Minimising disruption to residents and completing the works without accessing apartment

interiors was essential. As such, the painting process was handled by a team of up to ten painters from Higgins Coatings, using a mix of swing stage scaffold and rope-work (abseiling), depending on the part of the building being painted at any given time.

Approach

In addition to the above requirements, it was also important to have a product and application method that met certain criteria. This included limiting paint flick from the rollers due to wind and preventing overspray during the painting process. Maintaining a 'wet edge' was also important, as was the need to limit visible bands or shadow lines, allowing for a smooth paint finish on all external surfaces, the majority of which were off-form concrete panels. The project manager appointed by the body corporate, Integrity Coatings, in turn appointed Taubmans as the project paint and coatings partner, as an extension of a three-year ongoing relationship. Integrity Coatings then engaged Higgins Coatings, the commercial painting contractor, to carry out the works. Taubmans was selected for two simple and compelling reasons: excellent and economical products, combined with excellent service to ensure the project was delivered efficiently, on time and on budget.

Benefits

The Taubmans product selected and

used for the exterior was Armawall Armashield. Armawall was an ideal product for the project due to functional and aesthetic criteria: its high resistance to carbon dioxide penetration and salt penetration were essential for the success of the project, and the aesthetic qualities ensured an attractive and durable satin finish.

Results

In addition to Taubmans products meeting the project's high performance requirements, the service offered by the company was second to none. As Paul Dolbel of Integrity Coatings said, "Taubmans was very diligent and took full ownership of the project." The service included the assessment of a range of key criteria, and took the form of regular site attendance to ensure that the application standards were being met over the course of the fourteen-week project. Taubmans' inspections and advice included quality control (QA) in general; workmanship of the painting application; cleanliness of the job site; assessment of dry film thickness; and the assessment of residual salt readings between coats. As reported by Integrity Coatings' Paul Dolbel and Higgins Coatings' project painter Matt Kennedy, Taubmans went out of their way to make the job as painless as possible: for painter, project manager and ultimately for the body corporate management responsible for the building.



Sentinel Surfers Paradise



0671p TAUBMANS painting

www.taubmans.com.au

"The Australian Institute of Building is proud to support the work of NATSPEC."



The Product Partner Case Study Magazine is another useful guide which provides examples of a Product Partner and subscriber's capacity and credibility. It also adequately addresses the necessity of high quality construction specifications. The magazine increases exposure of manufacturers who have achieved high quality projects which add value to the built environment. We congratulate NATSPEC for sharing such a valuable resource with the industry. This type of initiative when utilised by designers and constructors to achieve a universal quality of material selection will assist in creating Building Confidence for end consumers."

David Burnell, National President, AIB



The Termguard Reticulation Systems have been extensively tested and successfully used over the past two decades, and have been specifically designed to offer long-term termite management and damage prevention systems. Together with today's environmentally acceptable termite control agents, Termguard's termite reticulation systems have been the perfect partner to provide an effective replenishable barrier, yet minimise the total impact on the environment. www.termguard.com.au



TermShield are Australia's Termite specialists with extensive experience installing physical termite management systems for residential, commercial and industrial buildings.

As an Australian owned and operated company, we pride ourselves on providing a friendly, personalised and professional service for all our clients. Our expert team are trained and skilled in Stainless steel physical Termite management systems.

TermShield is CodeMark certified and backed by TermShield's Industry first 60 Year \$1,000,000 Diamond Warranty. www.termshield.com.au



TORMAX is one of the world's leading manufacturers of automatic doors. In 1951, the founders of the company, head-quartered in Bulach Switzerland, installed Europe's first electro-hydraulic swing door in Davos, Switzerland. The drive is still in use today, 60 years later. "Peak performance for life-long contented customers".

TORMAX Australia has Australia's largest range of sliding, swing, folding and revolving doors and have been successfully installing TORMAX drive systems throughout Australia for over 30 years. www.tormax.com.au



Wattyl Industrial Coatings specialises in high performance systems for use across a vast range of market segments. Wattle industrial coatings have been used in a full spectrum of exposure environments, including off shore, buried, coastal, and tropical. Our extensive project history is a testament to the enduring performance of our products. Valspar acquired the Wattyl Group in 2010, further strengthening the Wattyl brand by bringing expertise and experience from one of the largest global coatings companies. Regardless of your project size, Wattyl Industrial Coatings can supply a coating system solution for you. www.wattyl.com.au



YANMAR's Energy Systems division began operation in 1984, and today has installed more than 375,000 air conditioning, chiller and cogeneration systems worldwide. Using a YANMAR-designed, lean-burn Gas Engine, which was developed from the company's world-class diesel engine technology, these environmentally friendly systems are designed for reliability, efficiency, energy conservation, comfort and long-term savings. www.yanmar.com



Garden Island, WA



When the Department of Defence needed to defend against Termites, they chose TermShield (formerly TermSteel).

Garden Island in Western Australia, also commonly known as HMAS Stirling, is home to the Royal Australian Navy's largest fleet base.

The Problem

The island is critical in the defence of our coast and having termites disrupt this, is not an option.

Recent construction for the HMAS Stirling redevelopment included a base building for dedicated storage of hazardous goods, a substation extension, pass office and Induction centre at the base entrance, central emergency power station (2) and an intake substation (2) building, all of which were protected using the TermShield Stainless Steel Pesticide free termite management system.

The Solution

Initially some parties involved felt it was not necessary to protect the structures from termite attack, as all primary building elements had no timber. Whilst this may be the case, what was forgotten was the electrical supply system in the structure, plasterboard, and general fit out including but not limited to cupboards and carpets.

Once learning this TermShield were contracted to consult and install its pesticide free, stainless steel termite management system. With this installation, life of structure protection will provide absolute peace of mind, that termites will not attack the electrical systems within the buildings especially the substations, and emergency power station.

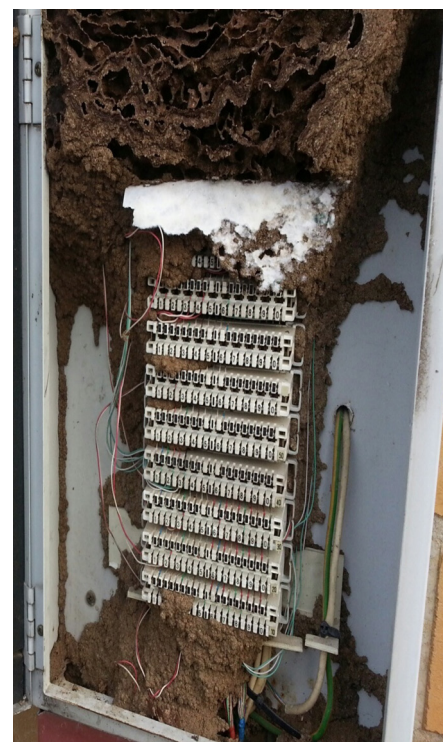
Termites chew through the outer sheath material in which electrical cables are protected, these are made with various polymers. If this occurs, there is a very high risk of fire. Besides the expense of replacing damaged materials/structures and lost production, the cost of remedial treatments and ongoing maintenance can easily run into the tens of thousands.



Chewed through cable

Plasterboard on the other hand, is made of gypsum plaster between 2 sheets of paper and termites can move through

this quicker than most timbers and conceal themselves until the damage is extensive. Plasterboard has proven time and time again to be a preferred food source of termites. Whilst damage is not structural, the mess it makes and the extensive amount of work in replacing sheets, proves to be an expensive exercise.



Termite infected circuit box

When thinking termites, be sure to think more than just the structure. Think about what the fit out consists of, what will be stored in the future, and just how difficult and expensive it will be to fix a problem of a completed structure, compared to the smaller investment of incorporating protection during construction.



Garden Island WA



New Royal Adelaide Hospital, SA

wattyl®

The new Royal Adelaide Hospital (NRAH), which opened in 2017, is the single largest infrastructure project in South Australia's history; and provides tertiary level services, including the full range of complex medical, surgical, diagnostic and support services. The 800-bed NRAH is the state's flagship hospital, providing a comprehensive range of clinical care to an estimated 85,000 inpatients and 400,000 outpatients each year. The project began in 2011, and took almost 8 years to complete. It cost more than \$2 billion to construct, making it one of Australia's most expensive buildings ever built. Features include an emergency department capable of treating an extra 24,000 patients each year, 800 beds, 40 operating theatres, intelligent IT systems and a fleet of automatically guided vehicles.

Green sustainable design

The new hospital replaces the previous Royal Adelaide Hospital, which opened in 1840. The architectural design of the new hospital ensures that all rooms have access to natural light and easy access to internal gardens on balconies. It is designed to create a positive healing environment for patients, while maintaining a positive working environment for staff. The owners, South Australian Health had appointed architects Silver Thomas Hanley & Design Inc and builders Hansen

Yuncken Leighton Contractors Joint Venture for the project. The NRAH was designed towards a 4 Star Green Star – Healthcare Design v1 rating, making it the largest and most technically complex Green Star project in Australia. The challenge was to ensure the project met the environmental innovations to reduce greenhouse gas emissions by 50 per cent, indoor environment quality to include high levels of natural light and external views on offer, as well as environmentally friendly finishes such as low volatile organic compound (VOC) paints, carpets etc. The acoustic design also minimised noise. The RAH site also incorporated a total of 3.8 hectares of landscaped environment, including more than 70 internal themed courtyards and sky gardens across the 9 levels. This creates a 1.6 hectare footprint of greenspace within the hospital.

Project solutions

Wattyl was selected as a preferred paint supplier due to its low VOC properties, in order to meet the project's stringent 4 Star Green Star requirements. Working in partnership with Hansen Yuncken Leighton Contractors JV and LPH Painting, Wattyl's I.D Advanced* was nominated due to its performance in terms of durability, cleanability, washability and stain resistance, delivering increased levels of protection, with antimicrobial and low VOC

properties. Wattyl I.D Advanced* was used in NRAH's operating theatres, examination rooms, recovery areas, offices, corridors and plant rooms. The rating from the Green Building Council of Australia (GBCA) formally recognises the hospital for its commitment to environmentally sustainable design and building practices.

Wattyl branded worksection

Wattyl is a leading paint and coatings manufacturer in the Australasian region. For over 100 years, Wattyl's iconic brand has been used by generations of consumers across the residential, commercial and industrial segments. The business produces a broad range of decorative paints, varnishes, texture coatings, lacquers and special purpose protective and marine coatings. In 2017, Wattyl was acquired by Sherwin-Williams based in Cleveland, U.S.A, making it a subsidiary of the world's largest paint and coatings company today.

Wattyl's paints and coatings can now be easily incorporated into your project specification by using the WATTYL Branded Worksections, available on the NATSPEC website and the WATTYL website. Use it to select the right paint and coating system for your next project, whether you need internal or external paint, steel or texture coatings. See Branded Worksections below.

*Previously known as 'Wattyl I.D Kitchen & Bathroom

Images Courtesy of Hansen Yuncken and CPB Contractors, Silver Thomas Hanley Design Inc & Philip Handforth



Royal Adelaide Hospital



0345p WATTYL in steel protective paint coatings; 0671p WATTYL painting
0672p WATTYL - GRANOSITE textured and membrane coatings

www.wattyl.com.au

SPECIFYING QUALITY

INTRODUCTION

Communicating the requirements for quality is the main technical function of the specification. This TECHnote outlines how the NATSPEC specification system may be used to promote quality in construction projects.

DEFINING QUALITY

Quality must be defined; it cannot be managed if it is not defined. Quality can have different meanings for different people in different situations. In construction this problem is amplified because the responsibility for a project is divided between many different people, within many organisations. Therefore, agreement on a defined quality level between all parties, and how it is to be measured, is key to achieving the desired quality to the satisfaction of the principal.

QUALITY LEVEL

Several factors drive the desired quality level of a project and its components; the main factor being anticipated life. It would be a false economy to poorly construct something which must last for many years or over-design something which may only be required to last a number of weeks.

Other factors that influence the desired quality level include:

- The purpose of the building - Prestige or utility, flexibility or permanence.
- Required functional performance - Design repetition or one-offs, environmental.
- User perception - Convenience, comfort, ease of maintenance and repair.

WHEN CAN QUALITY BE ACHIEVED?

There is a common misconception that the quality of a project can be completely controlled during the construction stage. However, the level of quality that can be demanded during construction cannot be higher than that which is specified in the contract documentation, without additional cost.

The quality of a project is therefore dependent on documentation and supervision. The contract documentation includes the conditions of contract, the specification, the drawings and the schedules.

To achieve quality, care must be taken in material selection, documentation, workmanship and supervision. This does not necessarily increase time and cost, however these factors must be considered and balanced when defining the quality level required. Failure to take care may lead to poor quality and increased costs with greater rework, repair and maintenance required.

ROLE OF THE SPECIFICATION

Whilst the specification is a multi-purpose document, its primary role is to define precisely and succinctly the quality required and the processes necessary for achieving it. This also includes, but is not limited to, defining clear acceptance criteria for any item of work.

If specified acceptance criteria match the agreed defined quality level, then ultimately, conformance with the specification will achieve quality.

USING NATSPEC TO ACHIEVE QUALITY

The NATSPEC worksection *Templates* include the construction processes required for each particular item of work and also define clear industry standard acceptance criteria in the form of tolerances, performance requirements and testing and certification requirements. All can be modified if necessary to suit the defined quality levels agreed for each individual project and its components.

NATSPEC promotes the achievement of quality through coordination of the contract documents. Guidance text discourages duplication of information included on the drawings or within the specification, to avoid potential discrepancies and ambiguity. Duplication of information within the specification is minimised by reference to relevant worksections.

NATSPEC references and monitors updates to relevant Australian and International standards, including those cited within the NCC. Where standards define alternative levels of service, NATSPEC provides prompts to be completed by the specifier. It is essential that the specification defines the requirement, as blanket references to standards may not achieve the desired quality.

NATSPEC and AUS-SPEC also cover the requirements for project Quality Management Systems based on AS/NZS ISO 9001 and the provision of project Quality Plans in the **Relevant worksections** listed in the sidebar.



Poor quality timber construction – Split base-plate used.



“...If the building contract documents permit a sow’s ear then all the quality control in the world cannot demand a silk purse.....”



Inspection to confirm quality level achieved.



Poor quality concrete – Honeycombing and timber.

Relevant worksections

0010 Quality requirements for design (AUS-SPEC).

0121 Tendering

0160 Quality.

0161 Quality management (Construction) (AUS-SPEC).

0162 Quality (Supply) (AUS-SPEC).

0163 Quality (Delivery) (AUS-SPEC).

Monaro Mall Canberra Centre Canberra, ACT

MA MATHER
ARCHITECTURE



First Floor arcade skylight coffer and void
Photographer - Tom Ross

Monaro Mall, the oldest section of the Canberra Centre was opened by Sir Robert Menzies in 1963. Celebrating this history, the redevelopment reinterprets post-war modernist influences in a contemporary timeless manner, reinstating iconic arched awnings, the Bunda Street entry and multi-level internal circulation and voids. As the nature of retail continues to transform, an important focus was on experience and creating distinct precincts that merge the commercial and cultural.

What was unique about the project?

Material and detail choices develop a new rich palette that focused on atmosphere, longevity and a distinctive character. The Bunda Street entrance was reinstated with reflective gold soffits and uplighting while a new skylight and double height void with cafe behind add a new sense of luxury. Street orientated retail and hospitality reactivate the external public realm.

The ground floor arcade acknowledges the era of the building, but it is distinctly contemporary. Geometric patterning is expressed in the tapered, honed carrara marble, and grey, sawn cut stone retail portals, the triangular marble and terrazzo floor tiles and the

reflected cast concrete coffered ceiling and fluted spandrels.

The architectural expression of the first-floor arcade is wider with central kiosks, while multi-level vertical circulation and voids have been re-introduced, providing theatrical views and encouraging exploration, while new large-scale coffers frame the existing skylight to add drama. A play of light and dark helps to define space, guide movement and provide intimacy.

In contrast, the Beauty Garden has been developed on a new market typology, where small format tenancies can have short-term leases, with modular stainless-steel joinery. Strong emphasis was placed on the integrated specialist lighting design that contributes to the experience. On the ground floor Barrisol light boxes are integral to the coffered ceiling, while a layered grid of planting, track lighting and ambient lighting is used within the beauty garden.

Advantages of using the NATSPEC system

Mather Architecture used the NATSPEC system during the design and documentation phases as a fundamental tool in the production of the various trade package architectural specifications required for the project.

Due to the highly diverse and complex materiality of textures and finishes that were employed in the project, the NATSPEC work sections were an excellent resource to ensure the trade detail was industry current and all applicable Australian Standards were appropriately referenced. The editable nature and simplicity of use enabled quick revisions to suit value management requirements or material changes.

Lessons learnt from the project

The big lesson learnt was the importance of teamwork to deliver a successful outcome. The project wouldn't have been possible without the highly dedicated team working tirelessly throughout the process. From

the leadership and vision of the client to the passionate consultant design teams and the committed construction manager and their sub-contractors all working together, ensured the highly complex integration of existing, new, articulate and functional, which all combined to produce an outstanding result that the whole community can be proud to visit and experience.

This project was awarded the following awards by the Australian Institute of Architects in 2018:

National Award for Interior Architecture
The J S Murdoch Award for Heritage
The Robert Foster Award for Light in Architecture
The W Hayward Morris Award for Interior Architecture
Award for Commercial Architecture

Architect: Universal Design Studio and Mather Architecture

Client: Queensland Investment Corporation (QIC)

Construction Manager: Bloc Pty Ltd

Photographers: Diana Snape and Tom Ross



Petrie Plaza New Double Height
Entry Photographer - Diana Snape



Ground Floor Beauty Arcade
Photographer - Diana Snape



HOLD POINTS AND WITNESS POINTS

INTRODUCTION

Hold points and *Witness points* are construction stages which may need additional inspection, verification and documentation to make sure of:

- The safety of the personnel, environment and the public, before proceeding.
- The technical quality and any legal requirements have been satisfied.
- The next stage in the construction process can be completed.

Verification measures will vary with the specification method. For performance specifying, verification involves testing. For specifying by reference, verification is to a standard, or through third-party certification to that standard. Verification procedures are documented in the specification Inspection and test plan designated as *Hold points* and *Witness points*.

HOLD POINT

A *Hold point* is a mandatory verification point beyond which a work process cannot proceed without authorisation by the contract administrator. *Hold points* are usually assigned to those critical aspects of the work that cannot be inspected or corrected at a later stage because they will no longer be accessible. The relevant work cannot proceed until the contract administrator is able to verify the quality of the completed work and releases the *Hold point*.

Hold points can be nominated by:

- The principal, in the contract documents.
- The contract administrator, with a Non-conformance or Corrective action report.

Use *Hold points* sparingly as each potentially affects project duration and cost.

WITNESS POINT

A *Witness point* is an identified point in the work process where the contract administrator may review, witness, inspect or undertake tests on any component, method or process of works. The contractor is required to notify the contract administrator who may or may not take the opportunity. The subsequent activity however, may proceed.

CONTRACTOR'S ROLE

The contractor is responsible for satisfying the documented contract requirements and planning, developing and maintaining a system assuring the detection of non-conformances and control of their resolution. The issue of a Non-conformance report or a Notice of non-conformance automatically creates a *Hold point*.

AUS-SPEC APPROACH

AUS-SPEC is a specification system for the life-cycle management of assets. In AUS-SPEC *Templates*, *Hold points* are part of:

- 0136 *General requirements (Construction)*, 0161 *Quality Management (Construction)* and 0167 *Integrated management worksections*. The Quality plan for the works incorporates checklists, inspections, testing and documentation to make sure that the works comply with the contract documents. *Hold points* and *Witness Points* should be included in the checklists. Examples of submissions include a quality plan or soil compaction test results for a prepared sub-base.
- The summary of *Hold points* and *Witness points* in the annexure of each construction worksection provides a checklist for programming sequential activities and communication obligations.
- A Maintenance management plan combines the requirements of the Technical specifications, Quality manual and the Quality plan, for assuring quality in construction projects. The Maintenance management plan covers policy, organisation, selected procedures, maintenance planning and Activity specifications for maintenance activities. The Activity specifications form the core of the document and include the nominated *Hold points*, e.g test results confirming compliance of materials like asphalt or requirements of the work order for the proposed maintenance work.

AUS-SPEC TECHguides provide further guidance on the use of *Hold points* and *Witness points* for the AUS-SPEC specifications.

NATSPEC APPROACH

NATSPEC *Templates* do not nominate *Hold points* in *Normal* style text. The **INSPECTION** clause in individual worksections includes *Guidance* text for nominating *Hold points* where they may be appropriate for inclusion in a project specification, e.g. inspecting formwork and reinforcement prior to placement of concrete.

NATSPEC *Templates* use **INSPECTIONS, Notice** in lieu of *Witness points*. TECHnote GEN 014 provides more information on submissions and testing.

AUS-SPEC definitions:

Hold point: A checkpoint in the construction process beyond which work cannot proceed until compliance to the specified requirements has been verified and the hold point released by a person with necessary authority.

Witness Point: Important checkpoints not designated as hold points are designated as witness points and must be notified by the contractor to allow inspection by the Superintendent, independent reviewer or independent certifier.

Non-conformance report (NCR): A mandatory report submitted by the contractor that details the non-conforming work and the contractor's proposed disposition of the non-conformance.

Notice of non-conformance (NNC): Formal instruction from the superintendent regarding product non-conformance to that specified.

Corrective action: Measures, including preventative measures, taken to rectify conditions which have caused or might cause nonconformity.

Corrective action request (CAR): A formal advice/instruction from the superintendent regarding departures from the Quality system or methods as approved in the Quality plan.

Disposition: Action to be taken to resolve non-conformance.

NATSPEC definitions:

Hold point: The activity cannot proceed without the approval of the contract administrator.

NATSPEC defines **Hold points** in *Optional* style text in 0171 *General requirements* worksection along with *Guidance* text on minimising contractor intervention of this kind to *accord with principles of quality assurance and risk allocation*.

Contract administrator: Has the same meaning as 'architect' or 'superintendent' and is the person appointed by the 'owner' or 'principal' under the contract.

Relevant documents

0136 *General requirements (Construction)* (AUS-SPEC)

0161 *Quality Management (Construction)* (AUS-SPEC)

0167 *Integrated management (AUS-SPEC)*

0171 *General requirements*

AUS-SPEC TECHguides

TECHNote GEN 014 *Submissions and testing*

Austrroads AGPD03/14 *Guide to project delivery – Part 3 Contract Management*.

Austrroads AGPD05/18 *Guide to project delivery – Part 5 Road construction quality assurance*.

Warren Health Service Manjimup, WA



From the earliest design concepts, Silver Thomas Hanley championed the vision of the Warren Health Service (WHS) as a key community building that would evoke a sense of “pride and place” and be uplifting to its occupants. Manjimup is an iconic cultural hub within the South West; providing much needed support to the smaller surrounding towns. Commissioned by the Department of Finance Building Management and Works (BMW) for the West Australian Country Health Service (WAHCS); the new WHS provides significantly improved access to healthcare throughout the South West region; directly contributing to an improved quality of life and a better and safer community for residents and visitors alike. Offering extensive outpatient services in a rural setting, the WHS is required to be more than a simple service provider, it is a community hub designed to inspire wellbeing.

Located on the old hospital grounds, the new building has a floor area of 4,450m² and includes:

- Eighteen inpatient bedrooms
- Operating room
- Birthing suite
- Emergency Department including four treatment areas
- Independent Ambulatory Care Department
- Pathology
- Radiology
- Kitchen and staff support spaces

What was unique about the project:

The WHS provides a cutting-edge healthcare facility, that meets the needs of the community, patients and staff

whilst retaining a deep connection to the cultural and contextual landscape. It features a carefully selected palette of materials such as rammed earth and recycled timber to reflect the history of the town and elements of region. The entrance canopy is supported by a free-standing timber structure crafted to represent the great trees of the Manjimup region. The boldness and height of this canopy is a “beacon” and entry point. The functional layout further reinforces intuitive way finding. The lightness and ambience of the canopy and lobby create a warm and welcoming entrance for patients and staff; dismissing any preconceptions of a healthcare facility being “cold” and institutional.

The use of rammed earth provides a façade which echoes the natural surrounds of the South West. The texture, layering and colouring of the façade was developed using locally available sands and gravel; reiterating connectivity of built form and land. These walls don’t require painting, have no maintenance and a lifespan outperforming many other contemporary materials.

The landscaping and shaded areas provide meeting places which are beautiful to inhabit for residents and visitors. The design is mindful of the local habitat; the landscape design and careful selection of native plants, blends seamlessly into the surrounds.

Advantages of using the NATSPEC System

NATSPEC is a comprehensive classification system and an indispensable architectural design and documentation tool. The system provides a foundation of information, which is reflective of current industry standards as well as Product Partner worksections featuring current products. These worksections clearly outline product performance and characteristics, allowing us as specifiers to assess which products are best suited and meet the requirements of the NCC. The easy-to-follow format of the

worksections allow specifications to be compared fairly; this contributes to well-informed design decisions and reduces the risk during variations. Within relation to the WHS, the use of NATSPEC was a requirement and provided a systematic approach to specification; ensuring that all selections were high quality, suitable to application and provided value for money.

Lessons learnt from the project

The successful delivery of the WHS has been praised by the WACHS and BMW; Health Minister Cook noted how the design of the new WHS is ‘uplifting to the spirit’ and a great example of how good architecture should contribute to the community. The design of the WHS sets a new standard in hospital design by creating an efficient, functional building that also illustrates a deep connection to the local community and heritage of the region. The WHS demonstrates that design thinking, community consultation and collaboration can result in a project as beautiful as it is functional.

Architect: Silver Thomas Hanley

Photography: Silvertone



SUBMISSIONS AND TESTING

INTRODUCTION

This TECHnote addresses the specification of submissions and tests by the contractor which may be required during the construction process.

SUBMISSIONS

Contractual

Submissions which require approval before work can proceed create hold points in the construction program. Submissions which may create hold points include:

- Authority approvals.
- Calculations.
- Certification.
- Design and install documentation.
- Fire hazard properties.
- Inspection reports.
- Operation and maintenance manuals.
- Products and materials.
- Prototypes.
- Records.
- Samples.
- Shop drawings.
- Subcontractors.
- Technical data.
- Tests.
- Warranties.

Requesting these submissions requires the contract administrator to perform a duty and accept responsibility for that duty.

For information only

If submissions are required for information only, they are witness points, intended to assist the contract administrator. Submissions which may form witness points include:

- Non-contractual construction programs.
- Inspection and testing plans.
- Accident reports.
- Inspection reports.
- Type test reports.
- Site photographs.
- Environmental management proposals.
- Product certification and manufacturers' data.

Do not request submissions indiscriminately. Fewer should be required under a quality assurance scheme.

Submission approval and acceptance

NATSPEC, as a generic technical specification, does not contain management systems to handle the approval process. If an approval is

required before implementation, consider nominating a hold point, to eliminate ambiguity. Consider documenting approval criteria and the acceptance procedure.

TESTS

Inspection and testing of the works can be requested in the documentation.

Testing and laboratory services may be procured by one of the following methods:

- Principal appointment, employment and payment.
- Principal appointment and employment but contractor payment.
- Contractor appointment, employment and payment.

NATSPEC worksections, which address the contractor, assume the third option applies.

The contract administrator may call for an inspection that may involve a hold point. Indicate in the worksections which tests, if any, are hold points and make sure the affected parts of the works are not concealed, until directed.

Minimise the number of these tests, as late approval can lead to delay claims.

Testing authorities

If an Accredited Testing Laboratory is required for particular site tests, document in the appropriate NATSPEC worksection. Otherwise, the contractor may carry out site tests. If the testing authority must also be independent, document in the appropriate NATSPEC worksection or in the *0171 General requirements* worksection if it is a global requirement. NATA publishes a register of accredited testing laboratories.

Product certification schemes

JAS-ANZ has an online register of certified organisations, Conformity Assessment Bodies (CABs) and products.

If a JAS-ANZ CAB is required for a particular product or system, document in the appropriate worksection.



Product certification schemes

Include:

- ActivFire Scheme
- The Australian Gas Association (AGA)
- The Australian Communications and Media Authority (ACMA)
- The CodeMark Certification Scheme
- Chain of Custody for forest products (AS 4707)
- WaterMark Certification Scheme (AS 5200.000)
- Water Efficiency Labelling and Standards (WELS) Scheme

Relevant websites

National Association of Testing Authorities, Australia
www.nata.com.au

Joint Accreditation System of Australia and New Zealand
www.jas-anz.com.au

Relevant worksections

0160 Quality
0161 Quality management (AUS-SPEC)
0171 General requirements

Related TECHnotes

GEN 004 Shop drawings and samples
GEN 006 Product specifying and substitution
GEN 009 Hold points and witness points
GEN 010 Mechanical commissioning strategies

“Designing” a duty of care – Architects’ liability

As disputes about combustible cladding continue to “heat up” focus is shifting from builders’ liability to the liability implications for consultants involved in the design and construction of non-compliant buildings.

In that context, this article touches briefly on the duty of care owed by architects, particularly where that duty extends to the provision of a design which is “fit for purpose”.

An architect’s duty of care

It is well established that building consultants, including architects, owe a duty of care in relation to the provision of their services. That is, an architect will be held to owe a duty of care to the individuals or organisations who contract to receive services from the architect, relying on the architect’s design expertise.

Where things go wrong, the question of liability for design depends specifically on the facts of the case – including, in relation to the scope and nature of services expressed in any retainer – which will impact the appropriate standard of professional care in each case.

Most readers will by now be keenly aware of the recent Lacrosse decision. A decision in which the architect was found to bear 25% of the responsibility for the owners’ loss arising from its failure to exercise skill and care in failing to:

- remedy defects in its design (namely, its specification and drawings which included exterior Aluminium Composite Panels (ACP)); and
- ensure, as head design consultant, that the ACP sample provided by the builder was compliant with its own design intent.

In light of the increased scrutiny of the construction industry arising in part from combustible cladding cases, architects are now asking how they can limit their design liability exposure in the future.

Good design starts with a clear retainer

Whether an architect is found liable for breaching their duty of care will partly depend on what it is the architect has been engaged to do.

In *Bailey v Redebi Pty Ltd*, Judge Santow remarked that an analogy can be found between an architect’s and a solicitor’s duty of care – the later of which would not ordinarily extend to undertaking responsibility for commercial as distinct from legal advice, unless the solicitor was retained to provide commercial advice.

In the context of design services, an architect would ordinarily undertake a duty of care to a client. However, this would not extend to an assumed responsibility for specialised aspects of engineering design in the absence of an express undertaking to that effect or which can be implied from the circumstances, including their retainer.

Put simply, if the architect does not perform or manage works which are peripheral to their design work, the retainer should make this expressly clear.

In the context of architectural services, agreements which include clauses relating to “supervision” of a builder’s works, and obligations in relation to “defects inspections”, can muddy the waters. Agreements should specify the limits on the role in “supervising” or “inspecting” the works.

Fitness for purpose

Fitness for purpose

We have seen an increase in retainers which include provision of an outcome which meets a “fitness for purpose” test – that is, that the architect involved in the design warrants that its design will be fit for their intended purpose. This can include a requirement that the design complies with “legislative requirements”, including the Building Code of Australia, as was the requirement in *Lacrosse*.

What this means in practice is that the

architect is agreeing to provide a design which, when constructed, will result in a building or a product that is fit for the specified purpose. Further, that the architect must achieve the purpose regardless of whether or not the design was prepared negligently. The “purpose” expressed in these terms can be narrow, or broad.

If you are agreeing to a term requiring your design to be “fit for purpose”, you should ensure that the contract includes sufficient detail about what the purpose is – as the potential for a dispute can be significant.

Footnotes

¹A view clearly expressed by Judge Woodward in the highly publicised decision of *Owners Corporation No.1 of PS613436T v LU Simon Builders Pty Ltd (Building and Property)* [2019] VCAT 286 (“*Lacrosse*”).

²*Bailey v Redebi Pty Ltd t/as PR Design Co* [1999] NSWSC 918, affirmed on appeal.

Principal: Hubert Wajszel

Associate: Ashlea Hawkins



Ashlea Hawkins - Associate



Hubert Wajszel - Principal

SPECIFYING NCC REQUIREMENTS

INTRODUCTION

This TECHnote explains how the requirements of the National Construction Code Series (NCC) are incorporated in NATSPEC worksection specification *Templates*.

THE NCC

The NCC includes Building Code of Australia (BCA) Volume One for Class 2 to Class 9 Buildings, BCA Volume Two for Class 1 and Class 10 Buildings, and Plumbing Code of Australia (PCA) Volume Three.

The goal of the NCC (BCA and PCA) is to enable the achievement of nationally consistent, minimum necessary standards of relevant safety (including structural safety and safety from fire), health, amenity and sustainability objectives efficiently.

The NCC is a performance-based code. To meet NCC Performance Requirements, designers may use Deemed-to-Satisfy Solutions and/or Performance Solutions (formerly known as Alternative Solutions). NCC conformance using Performance Solutions is set out in NCC Section A Governing requirements clause A2.2.

NCC DOCUMENTS ADOPTED BY REFERENCE

The referenced documents in NCC Schedule 4 support the technical provisions of the NCC and provide a detailed means of complying with its requirements. A document that is referenced by the NCC becomes part of the building regulatory framework.

SUPERSEDED EDITIONS REFERENCED BY THE NCC

As it can take years for the updated edition of a document to be adopted in the NCC and the documents referenced within the NCC are continually updated independently, the NCC may cite superseded documents.

HOW NATSPEC MAKES REFERENCE TO THE NCC

NATSPEC includes:

- Mandatory NCC specifications and referenced standards.
- Updates to the revised NCC requirements.

NATSPEC does not include:

- Administrative requirements of local government authorities.
- NCC state or territory variations or additions.

NATSPEC references the relevant NCC requirements within the appropriate technical worksection by the following methods:

- Direct reference: e.g. Service penetration fire-stopping systems: To BCA C3.15.
- Deemed-to-Satisfy document reference: e.g. Tactile indicators: To AS 1428.4.1.

NATSPEC is based on the Deemed-to-Satisfy Provisions of the NCC. If a *Performance (Alternative) Solution* is used, amend the NATSPEC generic text to align with the alternative performance solution.

If the NCC references a superseded document, NATSPEC considers both the NCC referenced edition and the latest edition of the document. NATSPEC gives *Guidance* where a conflict exists between the NCC cited and current editions. The specifier may choose the Deemed-to-Satisfy superseded standard or the current standard as a Performance Solution.

NATSPEC REFERENCED DOCUMENTS

In *Guidance*, at the end of each worksection *Template*, NATSPEC lists all documents cited, including their number, date and title. These are grouped by their location either in the *Template* or *Guidance* text. If an NCC clause is cited within the worksection *Template* it will be included in this list.

Relevant NCC edition

The NCC takes effect on the 1st May and is updated every 3 years. The specifier needs to comply with the relevant NCC edition at the time. Development Applications and or Construction Certificates may rely on different NCC editions, depending on the date of the consent.



NCC on relevant references

A reference in a *Deemed-to-Satisfy Provision* to a document under NCC A4.2 refers to the edition or issue, together with any amendment, listed in NCC Schedule and only so much as is relevant in the context in which the document is quoted.

NCC on superseded editions

Where the NCC references a document under NCC A4.2 which is subject to publication of a new edition or amendment not listed under NCC Schedule 4, the new edition or amendment need not be complied with in order to comply with the *Deemed-to-Satisfy Provisions*.

Relevant websites

www.abcb.gov.au

Relevant documents

NCC - Volumes One, Two and Three

Relevant worksection

0171 General requirements

The Lacrosse Decision



*Bronwyn Weir - Managing director at
Weir Legal and Consulting Pty Ltd*

In March 2019 Judge Woodward delivered his 227 page decision relating to the cladding fire that occurred at the Lacrosse Tower in Melbourne in November 2014. Whilst the builder, architect, fire engineer and building certifier were all found to have breached their respective contracts, the builder was found to have reasonably relied on the other 3 consultants to whom 97% of the damages payable by the builder were apportioned.

The decision states clearly that the findings apply to the facts in this particular case. However, the findings are a useful guide to how courts may consider similar cases involving combustible cladding.

In this article I focus on the findings in relation to the architect.

Threshold question – did the cladding comply with the NCC?

The cladding on the building was Alucobest, a 100% polyethylene aluminium composite panel (ACP). It was used on lightweight partitions on the balconies. The Tribunal concluded that the Alucobest did not comply with the deemed-to-satisfy provisions of the NCC. In doing so the Tribunal rejected arguments that the Alucobest was a

‘bonded laminated material’ which was deemed non-combustible under clause C1.12 and/or an allowable ‘attachment’ under clause 2.4 of Specification C.1 of the NCC.

Arguments raised by the architect

The architect specified that the cladding to be used around the balcony areas (which later caught fire) was to be ‘indicative to Alucobond’. In their defence of the matter several arguments were raised about why they should not be liable for the non-complaint use of combustible cladding. The architect argued that:

- under their consultancy agreement, the builder had assumed all responsibility for the design when it was appointed by the developer and therefore the architect was not liable for any defects in their design;
- although they had specified the use of ACP by referring to ‘indicative to Alucobond’ in the documents, the builder could have chosen any product in that range including products which were more fire resistant than the 100% PE product that was chosen;
- the builder substituted Alucobond for Alucobest and whilst the builder had sought and obtained approval for the substituted product from the architect, the approval only related to the colour and look of the product;
- one or more of the fire engineer, building surveyor or builder were responsible for ensuring the cladding was compliant with the NCC and had they acted appropriately, the non-complaint product would not have been used.

Findings made in relation to the architect

All of these arguments failed. The Tribunal accepted evidence that although the specification referenced only the brand name ‘Alucobond’, by far the most commonly used Alucobond

product at the time was the 100% PE core product. Therefore, in the absence of further detail in the specification, it was assumed that the specification was for the use of the 100% PE product which was a non-complaint product.

The Tribunal found that the services the architect agreed to provide under its contract included the preparation of contract material in a manner consistent to satisfy the legislative requirements which included the NCC. Having found that the use of ACP on the Lacrosse building was not compliant with the NCC, it followed that the architect’s conduct in specifying ‘indicative to Alucobond’ was in breach of the contract. Although the architect was found to have breached its contract, the court commented that the duties and obligations under the contract were consistent with an architect’s duties at common law to exercise reasonable care.

The architect was apportioned 25% of the damages payable by the builder. The fire engineer 39% and the building surveyor 33%. The decision of the Tribunal is currently the subject of an appeal.

What does this mean for architects?

The upshot of this decision for architects is that the courts expect them to prepare drawings and documents that demonstrate compliance with the NCC. Whilst it would be good if other designers or the building surveyor picked up and corrected aspects of the architect’s design which did not comply with the NCC, if they don’t, this won’t get the architect off the hook. Taking that one step further, as specialist consultants, the architect, fire engineer and building surveyor are all expected to provide clear advice which will ensure compliance with the NCC.

NATSPEC'S USE OF STANDARDS

QUALITY AND STANDARDS

'... the level of quality that can be policed in the construction stage cannot be higher than that which is spelt out in the contract. If the building contract documents permit a sow's ear then all the quality control in the world cannot demand a silk purse ... True quality control starts with the documentation for a project and in the project specification in particular ...'

'... for many years an army of experts has been producing minimum quality standard specifications for reference in a variety of industries, including the building industry, and in regulations relevant to those industries.'

'Nothing could be more necessary, more logical, more timely or more useful in today's building industry or more responsive to the call for quality control than a specification system tied to relevant Australian standards. That is what NATSPEC sets out to be.'

NATSPEC AND AUSTRALIAN STANDARDS

'The NATSPEC method of using relevant published standards is to incorporate them by reference and not to quote, transcribe, repeat or paraphrase the text of the standards. To do so would not only interfere with copyrights but would also breed errors of transcription. It would also increase the physical size of NATSPEC and its derivative specifications, unnecessarily.'

'NATSPEC deliberately avoids blanket referencing of standards, the system by which specifiers expect contractors to allow for every conceivable and inconceivable standard in the world.'

'NATSPEC provides a checklist of possible relevant standards. It also provides a means of exercising options contained in standards. It also allows for manufacturer's recommendations to be referenced or 'called-up' in the same way as standards. NATSPEC recognizes the need for care in the specifying of standards.'

- Bryce Mortlock, RAIA Practice Division Report, August, 1989.

STANDARDS IN NATSPEC

NATSPEC continues to incorporate standards by reference to the standard's number. Where there are options in standards and decisions to be made, NATSPEC provides prompts and guidance. NATSPEC, with research and feedback from subscribers and industry, fills gaps that the consensus approach can leave out of standards.

NATSOURCE

The publication NATsource includes all NATSPEC cited standards, and their abstracts. It is provided to subscribers as part of their package, as well as being available for purchase.

STANDARDS TO OWN

The following should be considered:

- Design standards cited in the NCC and other regulations, with which you are legally bound to comply.
- Design standards that relate to your discipline and project type.
- Standards and handbooks that relate to construction.
- Lists of suggested standards for the offices of architects, landscape architects, structural, mechanical, hydraulic and electrical engineers are provided in the paper *Specification writing* on the NATSPEC website, under suggested standards for offices.

Whether the owning of a standard should be regarded as essential is a matter of professional judgement. Standards relating only to product manufacture or type testing may be considered non-essential provided compliance can be demonstrated by other means, such as certificates of compliance and labelling schemes.

KEEPING STANDARDS CURRENT

- Each month NATSPEC publishes *Standards revising NATSPEC and AUS-SPEC* in the Technical Resources area of www.natspec.com.au/index.php/re-sources/standards
- Every three months, NATSPEC lists the most important of these standards in SPECnotes, which is available on the SPECbuilder Live.
- Every six months, in April and October, NATSPEC issues updated specification material to its subscribers via CD and SPECbuilder Live.

Some National and International standards cited by NATSPEC



Australian Standards.



British Standards Institution.



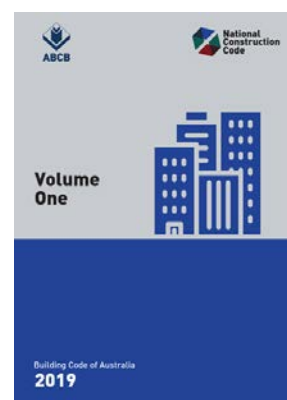
American Society for Testing and Materials.



International Organization for Standardization.



Bryce Mortlock - Father of NATSPEC, RAIA Gold Medallist.



Relevant Websites

NCC
www.abcb.gov.au/

Acts and regulations
www.austlii.edu.au/

SAI GLOBAL
www.saiglobal.com/

A continuing role for Standards Australia

STANDARDS
Australia

“Standards Australia endeavours to shape a safer and efficient Australia, cementing our role within the building and construction sector. Sharing the same values as NATSPEC, Standards Australia are proud to be key partners. The ongoing quality and productivity focus with the beneficiaries of a safer community being Australians.”

The relationship between Standards Australia and the building and construction sector has always been closely entwined. Working with industry, government and the wider community to develop and adopt standards, with public purpose being the first priority.

Standards are dynamic and living documents. The various Technical Committees work tirelessly to review and develop standards to support an industry that is forever changing and growing.

With technological advances and emerging systems, the role of standards will always be adapting. Aiming to provide efficiency and improvements that can reduce cost and create confidence in the industry.

Approval Process

The Australian building and construction sector have been forecasted for continual and steady growth. Linking in with this development, it's essential that standards are present to enable products, services and systems that are in place to guide a building benchmark and quality assurance.

The previous Financial Year was the first, where initiatives created to support the findings of the Technical Governance Review were put into action. The Review was part of independent consultation of Standards Australia's technical governance in alignment with the Strategic Plan.

One of the initial projects implemented was the reduction in timeframes in the project approval process, moving from six-monthly to a monthly period. This has been a significant shift allowing committees to get started on potential

standards earlier, speeding up the development stage. In an ideal scenario it has the possibility of now shaving months off a project kick off.

With more initiatives underway, it solidifies the commitment Standards Australia has on improving our processes as the sector evolves.

National Construction Code 2019

May 1st brought in the official adoption of the 2019 National Construction Code (NCC). Adopted in each State and Territory, the Code has always played a prominent role within Standards Australia.

Now on a three-yearly cycle, the anticipation leading up to NCC implementation included countless committee meetings with dozens of technical experts and professionals working tirelessly to contribute new and amended standards into the Code.

From government to the building industry to consumers, there is a great commitment to working with these key stakeholders to deliver standards that will provide benefits throughout the asset life cycle of the built environment. These collaboratively developed standards go towards the National Construction Code.

Cladding Consultation

As one of the more high-profile projects of 2019, there has been much conversation around the use of Aluminium Composite Panel (ACP) on multi-storey buildings across Australia.

The Building Ministers' Forum, consisting of Commonwealth, state and territory Ministers responsible for building matters, identified the development of a permanent labelling system for ACP in



Adrian O'Connell
Chief Executive Officer

Australia as a priority to prevent the use of non-compliant building products.

Following discussions at these ministerial meetings, Standards Australia released a consultation paper seeking advice from industry and other stakeholders on the proposed approach for labelling of ACP products.

After releasing the 'Labelling of ACP Products' Discussion Paper, there was a great response from a broad scope of the industry. The intention is for this feedback to provide the base for a lower-consensus technical specification and deliver quality with speed to market in mind.

The progression from the discussion paper will lead to working with the technical experts to reach consensus while safety is at the core of outcomes to be achieved.

Collaborating for Safety

The demand of safety is always at the forefront of the Australian Building and construction industry, cementing the ongoing work and collaboration needed with key experts and industry.

Bringing together the plethora of technical experts and industry professionals, to provide their expertise and capabilities to create Australian Standards which help the building and construction industry to work safely, sustainably and more effectively.



Tony Kemeny
Director
Gran Associates Australia

“An architectural practice should have, amongst other things, three fundamental project control documents: its Integrated Management Manual, the National Construction Code and NATSPEC.”

Tony Kemeny
Director
Gran Associates

“...Hence, the courts and others often look to the specification in particular to determine the message conveyed by the contract documents to those who work with them.”

Acumen, Australian Institute of Architects

NATSPEC

the national building specification

Government departments and clients prefer NATSPEC

In the majority of Australian States and Territories, NATSPEC specifications are required for building projects. Government Departments and clients prefer NATSPEC specifications so that they are assured of a baseline level of project quality. Whilst drawings and schedules only provide the form and materials, it is a properly constructed specification that outlines the quality desired. For over 35 years NATSPEC has been trusted to deliver quality results.

Consultants prefer NATSPEC

The number of regulations that change each year continues to increase. Pressures on consultants' fees and the time required to design do not allow for individual organisations to monitor all the regulatory changes. NATSPEC provides the economies of scale to keep consultants up-to-date. Consultants know that NATSPEC is comprehensive and provides a clear outline of the quality of materials and tolerance of construction required. NATSPEC specifications save litigation and support the teams desire for successful projects.

Contractors prefer NATSPEC

It is a competitive world and as the industry continues to consolidate, greater emphasis is being placed on the cost of a project. Contractors want to compete on an even footing and a NATSPEC specification means that the job will not be lost to someone who will cut the quality of construction. NATSPEC is independent and does not favour one party over another.

Project managers prefer NATSPEC

When all parties are clear on the expected outcome, the project progresses quickly and without undue confrontation. NATSPEC's template specifications are written in simple plain English without duplication or contradiction so that Project Managers do not waste time clarifying project requirements.

NATSPEC is a national not-for-profit organisation, owned by Government and industry, whose objective is to improve the construction quality and productivity of the built environment through leadership of information. It is impartial and is not involved in advocacy or policy development.