

# HOW DO YOU UPDATE YOUR BUILDING SPECIFICATIONS?

Over 1800 organisations base their specifications on **NATSPEC**

**NATSPEC** the national building specification  
Owned and trusted by government and industry



*your*  
**NATSPEC**

## SUBSCRIBER CASE STUDIES

# The Importance of Subscribing to the National Building Specification

Quality cannot be managed if it is not defined. In construction, as there are many different parties who work on a project, the desired level of quality must be clearly specified in order to achieve it. Poor documentation and low quality result in re-work, variations, excess meetings, and delays.

Construction specifications are the most reliable way to define the required level of quality and meet technical standards. An up-to-date and comprehensive specification to support your contract and drawings is required to deliver a project with reduced risk of litigation.

Maintaining up-to-date specifications is time-consuming. NATSPEC, which is owned by the design, build, construct, and property industry and government bodies, provides an economy of scale for the industry, by the industry.

Through the leadership of information and a well-resourced team that tracks and incorporates the latest changes to regulation, standards, and industry information, NATSPEC keeps up-to-date with the current building standards to make it easier for you to define the level of quality needed for your projects.



Richard Choy  
Chief Executive Officer  
NATSPEC//Construction 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

Construction Industry Engineering Services Group

Consult Australia

Department of Housing and Public Works (QLD)

Dept for Infrastructure and Transport (SA)

Dept of Finance (Federal)

Dept of Finance (WA)

Dept of Logistics and Infrastructure (NT)

Dept of Treasury and Finance (TAS)

Dept of Treasury and Finance (VIC)

Engineers Australia

Infrastructure Canberra

Master Builders Australia

Public Works Advisory (NSW)

Standards Australia

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Join us on an inspiring journey and explore 18 innovative case studies generously shared by NATSPEC subscribers. Discover the invaluable lessons they've learned, and the significant advantages gained through NATSPEC in their projects. These stories provide a guiding light, offering insights and a roadmap to achieve excellence in design and construction. Let their experiences inspire you to reach new heights in your own projects.

# Enhancing Construction Quality with NATSPEC

## NATSPEC Overview

NATSPEC is a national not-for-profit organisation that is owned by the design, build, construct and property industry through professional associations and government property groups. NATSPEC's objective is to improve the construction quality and productivity of the built environment through leadership of information. NATSPEC ensures alignment with the latest Australian standards, regulations, and government legislation, thereby streamlining the process of specifying project quality.

## Role of Specifications in Ensuring Quality

Specifications play an integral role in the contractual documentation of construction projects. They work in tandem with drawings, schedules, and contractual conditions to define the precise standards and the corresponding processes needed to achieve the required result. These specifications extend beyond material selection, encapsulating criteria for acceptable construction quality. Recognising that construction quality can't surpass what's defined in the contract, a comprehensive and current specification acts as a pivotal tool in minimising the risk of legal disputes and facilitating successful project outcomes.

## Why NATSPEC for Quality Assurance

NATSPEC plays a pivotal role in Australia's construction industry. By regularly updating its information based on industry and government feedback, it aligns with the latest standards, simplifying the project specification. While adherence to Australian Standards is not mandatory unless specified in the construction specification or regulated by the National Construction Code (NCC), NATSPEC's role is paramount. It reduces variations and costs by facilitating a clear understanding of project quality and promoting effective communication among stakeholders. This ensures that practitioners and government bodies can rely on it for the latest standards and practices.

## Quality Defined and Ensured

Quality in construction necessitates clear definition and diligent management. NATSPEC serves as a key element in this process by providing a comprehensive national building specification that defines and maintains high standards. Eliminating vagueness and ambiguity in construction specifications, NATSPEC empowers the construction industry to achieve quality projects while enhancing cost control.

## Advantages for NATSPEC Subscribers

NATSPEC extends a host of advantages to its subscribers, ensuring their access to valuable resources. The quarterly newsletter, SPECnotes, delivers the latest information on standards and regulatory changes, facilitating informed decision-making. SPECbuilder, an online compilation program, streamlines the specification compilation process for design teams. The economies of scale approach underscores NATSPEC's commitment as a not-for-profit organisation, benefitting the industry through regular updates and adherence to evolving regulations.

## In Conclusion

NATSPEC's resolute dedication to accurate, relevant, and up-to-date specifications significantly contributes to the enhancement of construction quality across Australia. By offering a robust and clear framework for defining quality expectations, NATSPEC empowers our subscribers to undertake projects with confidence, ensuring the successful realisation of sustainable and resilient construction. Many of these projects can be viewed in our Product Partners case study magazine which can be downloaded for free at: [www.natspec.com.au](http://www.natspec.com.au).



"The Australian Institute of Building Surveyors (AIBS) congratulates NATSPEC on their work to update and publish their National Building Specification.

"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, AIBS President & Director



# Synergy, CSIRO Black Mountain, ACT

# BVN

## The Project

Synergy is CSIRO's newest research and workplace centre in Canberra's Black Mountain research precinct. It redefines scientific workplaces enterprise wide and creates a highly imagamatic architecture. To enable this, a bespoke workplace strategy determined the form and architecture internally, and externally created a solution designed from the inside out, resulting in an integrated bespoke workplace building.

## What was unique about the project?

The very different functional performance of two components – workplace and laboratories – required different daylight and sun control solutions: maximising diffuse daylight in the workspace, while ensuring no direct sunlight in the laboratories.

The workplace design approach, after much collaboration with a workforce that was sceptical of 'open plan' solutions for highly-concentrated scientific research was to create partially discrete clusters through placement of meeting rooms and central facilities, while being open to enable a sense of community.

To create this conjunction of laboratory, clusters and circulation, an 'x' plan was developed. The plan was driven by the topography of the workplaces and derived the architectural form of the building.

## Advantages of using the NATSPEC specification system

Documentation for tender and construction varied in time and scale, using techniques ranging from annotations on photographs, 2D sketches through to full 3D Revit Models. The one constant was the written specification – the majority of consultant firms used the NATSPEC specification system. With such varied packages of documentation, the consistency of the consultant team's specification systems greatly assisted familiarity with the documents by the managing contractor and their subcontractors.

Certain elements of the project were specified using supplier-specific specifications generated efficiently by using NATSPEC's Product Partners specifications. Minor adjustments are easy as these specification worksections fit easily into the project format. We also had the additional unique project requirement to develop a new specification worksection for a material and system not commonly used in Australia, and again the NATSPEC structure facilitated the creation of this totally new worksection.

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 the Australian Standards.

## Lessons learnt from the project

Using the NATSPEC system for the progression of tender packages ensured there was currency in the documents as well as maintaining quality of the built outcome. Although the requirement for quality submissions was clearly established in the NATSPEC specifications, these submissions could be overwhelming and time consuming at peak times during the construction phase, but recognised as necessary to

ensure the quality of the built outcome. Understanding the workload generated by specifying these submissions needs to be clearly understood and accounted for as part of the site phase team responsibilities.

During the development of documentation for the various tenders, specifications were reviewed and amended to align with design intent and quality requirements on site. The various consultant organisations found that using a common specification system like NATSPEC facilitated the understanding and integration of specifications between disciplines.



*The project also included refurbishing and repurposing an existing laboratory facility to house a large cohort of office personnel. Across the site many minor buildings were either demolished or refurbished.*

# Nancy Millis Building, Parkville, VIC

# DesignInc

## What was unique about the project?

The Nancy Millis Building is an expansion of the Bio21 Institute. A four-storey state-of-the-art facility on the western precinct of the University of Melbourne's health and education precinct.

The key design challenge was how to create a research hub environment that encouraged researchers out of their laboratory and workplace, to collaborate with other scientists in-house, locally and from around the globe. We asked the question 'What is the most important quality a research hub should have?' For this project we defined this as: a sense of discovery. The constrained, almost hidden nature of the site provided an ideal opportunity to explore this concept.

The sense of discovery begins with the journey into the site through a sequence of landscaped, external courtyards that on entry opens up to reveal a tall, tapering, light-filled volume, framed by natural materials and textures.

The biophilic approach generates a collaboration forum for research community which is interconnected visually and physically by open stairs linking the shared space across three levels.

The project's form is a sympathetic response to the constraints of a gently sloping site entirely surrounded by existing buildings, including the David Penington Building.

The forum is designed as a social space where researchers can circulate, gather and collaborate. The experiences of the space are continually changing throughout the day and seasonal year. Light and air quality varies continually simulating the mystery of nature with ever changing views and outlook. We anticipate individuals choosing spatial preferences to socialise and work as each favourite place is discovered.

Our vision is to make a positive difference to the health and happiness of people's lives through the quality of every environment we create. The future of research is in relationships and encouragement of collaboration. The design of the Nancy Millis Building promotes this at the turn of every corner.

## What were the advantages of using the NATSPEC system?

Using NATSPEC gives the project team the confidence that the base specification adequately covers the building quality requirements and relevant standards. This gives time back the project, which is always welcome, especially for a building like this, though humble in its expression it was complex in its realisation. Much time was expended on refinement of the geometry and junctions of materials in multiple planes. In a fast-evolving space, it can be challenging for Architects to maintain currency of standards and codes for their own profession not to mention the construction sector too. There is greater efficiency in relying on NATSPEC to monitor and track

changes in these areas to assist architects in providing a comprehensive and full proof specification to support their documentation sets.



*The collaboration forum encourages researchers out of their laboratory and workplace, to collaborate with other scientists*

## What are the lessons learnt from the project that you are prepared to share with other designers?

The project was delivered under a GMP model. Which had its benefits and challenges. The landscaped timber planters throughout the atrium space were specified with hanging plants. Given the nature of the contract these plants were paired back to saplings at the very end which completely changed the feel of the space and the objective of a nature filled space. In hindsight we would have made it a contractual obligation to deliver on the vision sold to the client.

This project is designed around a play of light patterns and its overlay on a diversity of spaces at differ times of the day and year. As designers we make multiple educated design assumptions as to how people will interact with those spaces. However, not often enough to we have the opportunity to qualify those assumptions by immersing ourselves in the spaces for extended periods of time. In hindsight it would have been valuable to have spent a time working in the space before moving to the next deadline.

**Architect:** DesignInc

**Client:** The University of Melbourne and CSL

**Builder:** Cockram Construction

**Photographer:** Dianna Snape



*This 5 Star Green Star building uses biophilic design principles - providing natural relief from the close controlled laboratory environmental conditions*





# Scots All Saints College Junior Campus, Bathurst, NSW



Drew Dickson Architects were engaged by Scots All Saints College to design and document a new Innovation Centre on their Junior Campus in Bathurst, NSW.

Located in the nexus between the science department, the design & technology department and general learning classrooms, the Innovation Centre is seen as the central learning hub of the Junior Campus.

The building was designed as a student-focused learning facility offering a variety of structured learning, group study and break-away opportunities.



*Main entry portal and arrival view when approached from the school grounds*

The open plan 'workshop' aesthetic and nature of the building allows for experimentation with robotics, machines, science and the wider STEM curriculum. The opportunities are expanded, with a double-height space allowing for controlled environment height-drop experiments and flying machines tests.

## **What was unique about the project?**

A unique element of this project was the requirement to showcase technology and innovation. The internal space was intentionally left exposed to allow the students to learn and understand about the construction of the building. Consideration was also given to how technology could interface with the façade.

The façade was designed and specified using thermally insulated panels to achieve the thermal comfort and desired noise levels within the space.

The building form, colour and patterning

was refined during the design and development process, with many ideas interrogated. The final outcome provides a subtle façade backdrop that allows for bursts of vibrant colour through lighting technology projected onto the façade, truly making technology the focal point of the building.

When not on show, the tonal nature of the façade compliments the existing buildings on campus. It also stands out against the vibrant green lawn leading up to the building backdropped by native trees and a brilliant blue sky.

The angles of the building take inspiration from the skillion roof forms on campus. This can be seen through the entry portal form, the main roof line and the wrapping window head. The sunshade awning hoods to the mezzanine level windows emphasise these angles as well, playing between the vertical façade panels and the roof angle.

Drew Dickson Architects worked closely with the awning manufacturer to create a custom bracket-less awning system. These awnings were specified for their sleek modern appeal that compliments the architecture.



*Internal open learning environment with connection to the mezzanine level*

Vast lineal glazing suites allow for natural light and a strong indoor/outdoor link with the surrounding landscape and student circulation paths, reinforcing the idea of collaborative and open learning.

## **What were the advantages of using the NATSPEC system?**

The implementation of NATSPEC as the template for the specification was

essential for this project. NATSPEC created the framework, benchmarks and quality points we could rely on during the construction process. The result was a high-quality build, being a credit to the builder and NATSPEC alike.



*Feature window with angled sunshade awning hood*

Utilising the available land to its maximum potential, the Innovation Centre provides an outstanding, flexible learning facility for the school community of Scots All Saints College for many years to come.

## **What are the lessons learnt from the project that you are prepared to share with other designers?**

Drew Dickson Architects used Virtual Reality as an additional resource in designing this building. This allowed the design team to experience the volume of the space and identify the various material junctions needing a higher detailed interface. Drew Dickson Architects learnt to utilise such technology as a tool to create the best building outcome.

**Architect:** Drew Dickson Architects

**Project Manager:** EPM

**Structural/Civil Engineer:** Calare Civil

**Services Engineer:** Waterman

**Quantity Surveyor:** Walton Smith Consultants

**Builder:** Hines Construction

**Photography:** David Roma Photography

# Australia 108, VIC



Australia 108 is a highly sculptural residential tower in Melbourne's Southbank and is unlike any other building of its size and stature. Its slender form is emphasized by a golden starburst jetting out from the tower's curvaceous profile against the sky.

Within this protruding starburst are two levels of premium amenities. Here, swimming pools extend six metres out into the sky and residents can enjoy a double-height sky garden



*Australia 108 from City Road, Southbank*

The ground floor podium is built around a heritage facade which once housed a timber mill and warehouse. It now features three retail tenancies and access to the tower's residences through a gold-clad entryway.

## What was unique about the project?

The practice was commissioned to design the building back in 2014. Within the first 12 months, Town Planning Approval had been granted and 80% of the apartments were sold.

At 319 metres, Australia 108 is officially the tallest building from floor to roof in the Southern Hemisphere. With 1,105 apartments spanning 100 floors, it has

unparalleled resident facilities including dining and function spaces, theatrettes, gymnasiums, pools, spas and an extensive barbeque terrace.

Remarkably positioned, Australia 108's \$25 million penthouse occupies the entirety of Level 100. Entered via a private lift and triple-height lobby, it offers 360-degree views of the city and has access to a private sky courtyard.

## What was the advantage of using a NATSPEC specification?

What was once hand drawn is now mostly the result of computerisation. However, still underpinning construction drawings is a large body of non-graphic data provided by the specification. Traditionally provided as a book, today's presentation retains some of that format, even while being digital. Specifications have evolved to see this information embedded into object-based representations of construction elements.

For a start, constructional standards need to be kept up to date. This necessitates an awareness of changing constructional techniques as a result of newer products, materials and processes. The information also needs to be correct, relevant and well-structured. As there is a large quantity of information contained in a construction specification, relevant information needs to be easily located. The word-finding capabilities of electronic information certainly assists in that, but a good structure of the information creates a context for that information to assist in better understanding.

While all of this can be done within an architectural practice, to do the necessary research that underpins the data and to then properly maintain that information takes a lot of effort. This can be expensive and take valuable human resources away from other projects.

This is why we entrust NATSPEC to improve construction quality and productivity through leadership of information. NATSPEC handles all of that work for us, and most certainly does it the best. We are delivered a

document which is comprehensive, up-to-date, relevant and incredibly useful. The research and knowledge that supports the content of the information NATSPEC provides can't be replaced by architects or by a BIM model.



*Resident amenities: level 11 pool at Australia 108, Southbank*

## What are the lessons learnt from the project that you are prepared to share with other designers?

The key lesson from Australia 108 is keeping an up-to-date set of base specifications. NATSPEC, along with the right skilled individuals within your organisation make the integration of this into your office systems possible.



*Porte cochere at Australia 108, Southbank*

NATSPEC is a great base platform for keeping your office specifications in sync with the latest best practices and Australian Standards. The NATSPEC templates are a great starting point, but still need integration into the systems and practices of your office. With Australia 108, we have greatly benefitted by having people in-house who are familiar with the format and can keep it relevant and integrated with the way we work at Fender Katsalidis.

**Architect:** Fender Katsalidis  
**Photographer:** Timothy Kaye



Fender Katsalidis

[www.fkaustralia.com](http://www.fkaustralia.com)



# TAFE Campus Young, NSW



## The Project

Gran Associates Australia was engaged by NSW Public Works as the principal design consultant for this innovative upgrade project. The site has several unique features, including heritage walls, remnant buildings and underground water tanks from an old jail. All of these features were incorporated into the design, while a new 'Translucent Box' extension traces the footprint and height of the demolished jail-house.

A critical requirement for the project was to foster flexible learning. The design included flexibility in general teaching areas, with options for varied spatial arrangements; maximised availability of communication technology with video conferencing facilities for distance learning; and loose interconnected spaces available for individual interpretation and use by single students or small groups.

The project brief required a space that would be available for after-hours use by the general Young community. This space had to be able to be separated from the campus as needed, as well as provide independent food preparation facilities and general amenities. The restricted budget meant that a stand-alone facility could not be built. Instead, a multi-purpose connected learning area was designed, that is also able to meet the requirement for periodic separation as needed.

## Advantages of using the NATSPEC system

Using the NATSPEC system gave assurance that Gran Associates had up to date standards and latest industry information at our fingertips. The hidden text prompts and technical advice delivered in real time are comprehensive and very helpful. We've found NATSPEC to be well understood by and accepted within the industry. Its systematic approach to specification writing ensures thorough and rigorous documentation.

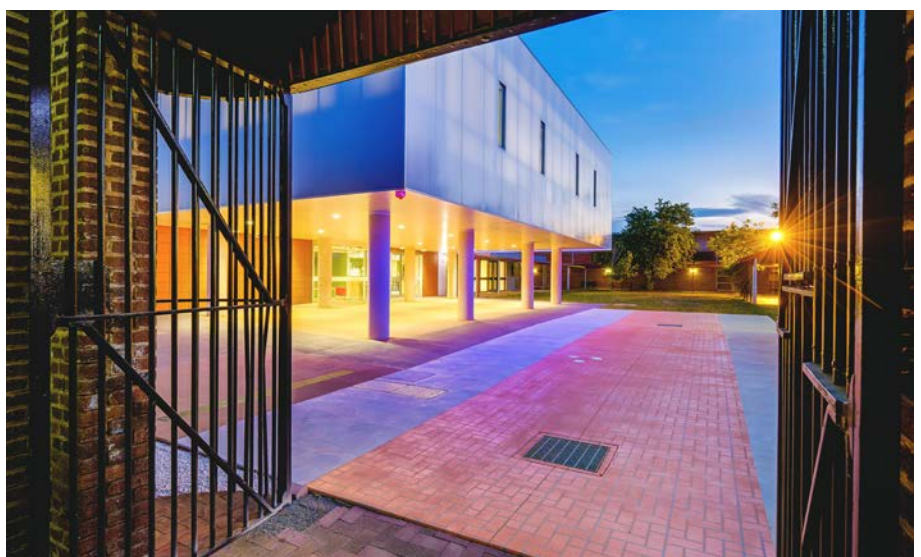
## Lessons learnt from the project

One important lesson learned from the project is that the availability and accuracy of existing documentation and base drawings is undervalued. This project needed considerable extra time for site re-measuring and production of detailed base drawings.

It is also very important to critically review suppliers' data, to fully research all materials specified, and to clarify and confirm manufacturer-supplied data and specifications. In this project, the brief called for a "light-filled space" and the delivered building exceeded

expectations. However, the lightweight façade cladding material selected and approved required exhaustive research into its fire and smoke developed indices, which culminated in a thoroughly researched and comprehensive fire-engineered solution.

The final lesson learned is that design changes and variations can be minimised by extensive group consultation in the pre-design phases. We found that the fitout of the completed project completely met with user expectations, because they had been consulted so extensively throughout the process.



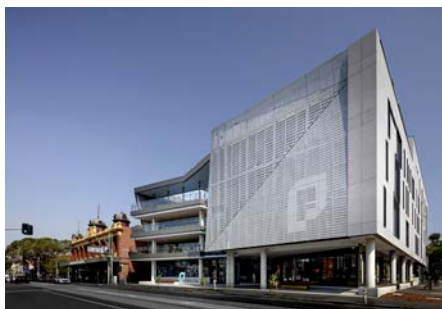
*The project aimed to revitalise and rejuvenate the NSW regional TAFE campus at Young, to create an inspiring destination where students, staff and the general public enjoy meeting and learning*



# Prahran High School, Windsor, VIC

GRAY PUKSAND

Prahran High School is one of Australia's first 'vertical' schools. Rising to a height of five levels, the modern learning environment is among a new class of inner-city schools commissioned by the Victorian School Building Authority (VSBA). Positioned in the vibrant heart of Windsor's High Street, the school occupies the most constricted site of any new government school in Australia. Although contending factors presented themselves such as limited space, heritage overlays and a diverse set of neighbouring typologies and public interfaces, Prahran High School managed to adopt sublime uniqueness in the face of challenge.



High Street

## What was unique about the project?

Rather than designing a straight-up-and-down cube extending to the boundary on each side, Gray Puksand developed two 'slipped and shifted' planes around a central light-filled atrium. By offsetting each level, the atrium evolves as it extends through the building, maximising natural day light penetration. A variety of activated learning spaces are made visible throughout the building – acting as a gallery of education. Externally, this configuration resulted in oversized balconies – allowing crucial outdoor spaces for teaching and learning, centred around wellbeing.

"That simple cutting, shifting and slipping of the planes provided different arrangements of spaces that we could layer throughout the building," explains Stephen Turner, Partner at Gray Puksand.

The combination of glass use, perforated screens and the large central atrium extends a warm welcome to

parents, students and visitors. This includes specialist learning area – Science, Technology, Engineering, Arts and Maths (STEAM), which is visible from almost any point in the building. Outdoor green spaces on the balconies and rooftop also provide access to views across the neighbourhood.



Interior Atrium

Connected to multiple public transport links, Prahran High School is designed to connect with a number of other educational institutions and community facilities, taking advantage of their proximity and offering opportunities for others to use the schools' facilities. The resulting design engages in a conversation with the community that focuses on transparency, circulation, collaboration, and extended community participation.

## What were the advantages of using the NATSPEC system?

As changing legislation, technical requirements, insurance and litigation issues become more prevalent, architects and consultants must keep abreast of evolving industry standards and a vast amount of technical information. Traditionally, the architect would be the holder of this technical information, producing a specification that covered all of the project specific

issues. With an increased reliance on embedded product technical information within Digital Technology models, compounding the extent of the information management required, it is increasingly difficult to have total clarity that the information contained within the model and its individual elements is up to date and accurate.

Having dedicated resources to maintain, update and disseminate this information can be challenging. NATSPEC dramatically reduces the risk of missing important updates to standards and manufacturer specific updates. For some time now, The Victorian School Building Authority have had a dedicated 'VSBA' branded version of NATSPEC, which Principal Design Consultants must use as the basis for Project Specifications.

## What are the lessons learnt from the project that you are prepared to share with other designers?

There were several key takeaways from the experience working on Prahran High School. Firstly, it is essential to have talented internal resources or access to an experienced NATSPEC Specification writer to assist with the development of a comprehensive document. Secondly, there is enormous advantage in having access to a full and comprehensive up to date set of base specifications. And lastly, the risk of quality issues can be drastically reduced when able to insert brand specific work sections into the base specification.

**Architect:** Gray Puksand

**Client:** Victorian School Building Authority

**Builder:** Kane Constructions

**Project Manager:** DCWC  
**Struct/Civil/Build Services**

**Engineers:** Wood & Grieve Engineers

**Building Surveyors:** McKenzie Group

**Landscape Architects:** Tract

**Acoustic Engineers:** Wood & Grieve Engineers

**Accessibility Consultants:** Architecture & Access

**Quantity Surveyors:** Slattery

**Photographer:** John Gollings



# AVEO Senior Living Development Bella Vista, NSW

JACKSON TEECE

## The Project

Aveo Norwest delivers independent living and residential aged care at the very forefront of the sector, while contributing to public amenity and employment opportunities to the area. Integrated into the established infrastructure of the Circa Norwest Business Park, the development reconciles the dense and commercial nature of the precinct to the north and the low density residential area to the south of the site, providing a high quality public domain that acts as a focal point for social interaction between residents, staff, visitors and the wider community.

While the proposed future character of the Business Park has been taken into consideration, design aspects such as the expansive landscape design and slender vertical fins of the main building façades reference Bella Vista's history of agricultural land use, symbolising the wheat fields that once stood there.

Aveo Norwest raises the bar not only in providing superior amenity to the user, but also spearheading sustainable construction technology through the use of Cross Laminated Timber (CLT), a prefabricated timber product. The project represents one of the largest applications of CLT in a multi-residential development in Australia.

## What was unique about the project?

A main aspect of the design for this project was the incorporation of sustainable construction technologies and the effective use of CLT. The advantages of using this product are not only seen in the environmental benefits and speed of construction, but also in the upfront design resolution, ultimately resulting in a higher quality end product.

There is a focus on architectural expression and functional planning, over a design purely driven by construction efficiencies. This project has achieved a more even balance between the desired architectural design outcome and construction rationale. Some of the challenges involved complicated floor slab junctions in order to realise

the desired apartment layouts, and sophisticated hybrid steel and timber connections to achieve the curved, seemingly cantilevered balconies.

This project is at the forefront of the application of mass timber construction technologies in Australia and as designers, engineers and builders increase their knowledge and confidence around this evolving construction methodology, we will continue to see more daring hybrid timber buildings developed.

## Advantages of using the NATSPEC system

Jackson Teece Architects found NATSPEC, the main construction specification used, to be an excellent resource, assisting us by compiling current industry information in an easy-to-follow format. Project-specific editing adds further clarity and complements the documentation, reducing the risk of variations or disputes.

NATSPEC allowed us to incorporate all specific data and critical design requirements which were easily amended, into one cohesive document.

## Lessons learnt

From inception it was clear that an early design resolution was imperative for a building that incorporated CLT, which

involves high levels of prefabrication. This requirement translated to the program and the various aspects of project delivery in a very steep learning curve. Key lessons included:

- The significant R&D investment that was required during the process.
- Execution of a detailed BIM management plan producing documentation split between the architect, structural engineer and the builder, that seamlessly integrates into fabrication of the CLT panels.
- The coordination with supply chain having to get used to an accelerated construction on-site.

As timber engineering and prefabrication in building construction continues to gain market prominence in Australia we are witnessing a technological revolution encouraging faster builds with the potential to realise more sustainable and efficient developments on an ever increasing scale.

Builder: Strongbuild

Client: Aveo

Structural Engineers: TTW



*Image credit: Strongbuild (Right)  
Photographer: Brett Boardman (Below)*





# Chau Chak Wing Museum, University of Sydney, NSW

# JPW

The Chau Chak Wing Museum has, for the first time, brought three of the University's most significant cultural, scientific and art collections together, to create a new public museum and teaching facility that will transform access to these important and unique resources.

The museum is located directly opposite the Great Hall, the University's main ceremonial hall, the oldest university building in Australia. This prominent location reinforces the museum's role as a public building within the campus, and an important meeting place for city and campus life.



*The concrete 'ceiling' of level 3*

Across 4 levels, 8 flexible gallery spaces provide diverse curatorial and physical opportunities for linking exhibitions and themes into a cohesive visitor experience. Study rooms for object-based learning are separated from gallery spaces by double sided showcases, providing a window into an expanded academic program that was not possible previously.

## What was unique about the project?

The building services were cast into the concrete soffit of the ceiling to the main entry level. Services reticulation pathways were reversed compared to a conventional ceiling, reticulating under an access floor on the floor above.

Services had to be carefully considered with structural reinforcement and post tensioning. Cast-in details for each service in the concrete ceiling were developed in close consultation with subcontractors, producing an outcome that looks both effortless and simple.



*The central atrium linking the gallery levels of the museum*

## What were the advantages of using the NATSPEC system?

NATSPEC has been a key resource and is an integral part of the documentation system within the practice. It is a starting point for the production of both landscape and architectural specifications for many of our projects.

For the Chau Chak Wing Museum the familiarity of the system meant coordinating with stakeholders was undertaken with ease.

NATSPEC promotes collaboration through the sharing of information between suppliers and designers. So where it was required in worksections, supplier specific information and stakeholder input during the design development stages of the project

was incorporated. This was further developed using benchmarks and standards to succinctly communicate to all the expected quality of the project.

Being a subscription service, NATSPEC regularly updates the worksections and summarizes via newsletter the changes to regulations and standards.

This was invaluable when documenting and allowed the JPW team to focus on preparing documentation whilst being kept efficiently informed of current industry practices.

## Architecture and Landscape:

Johnson Pilton Walker

**Builder:** FDC

**Photographs:** David James and Brett Boardman



*Eastern elevation of the Chau Chak Wing museum*

# Bunbury Senior High School

## Bunbury, WA



*View of northern façade with heritage buildings behind*

### The Project

Bunbury Senior High School is well known locally as the school with the best view in Bunbury. Kent Lyon Architect set out to enhance this experience for students, without imposing on the existing status on the State Register of Heritage Places. The most suitable location to build on was within the curtilage.

The site has a 9m level change from the top of the bank down to lower level. We designed a building that connects the front of school via an elevated bridge walkway overlooking the grassed amphitheatre with sound shell. To the west, the new building connects the music/arts area via a curved level walkway. Access was a pivotal issue and a variety of options were tested as standard options wouldn't be appropriate. Circulation was brought back inside the building to create useful spaces during learning periods, between breaks and after hours.

### What was unique about the project?

Initially, based on the Standard Classroom Block brief, the Department of Education realised that there would need to be flexibility in the arrangement of the spaces. We set out to create dual-purpose spaces for flexibility in usage and make the most of unique characteristics of the site.

The Activity Area (right) is a functional space for learning for different year groups, and is kept separate on an upper level. The remaining space under the Activity Area is used for musical instruments storage. The Teachers'

Office Area has passive surveillance from the central hub of the building overlooking passages. Four Learning Areas have flexibility including the request for use as green room/music rehearsal. Passage incorporates study nooks outside Learning Areas. Bridges to the east and west entries have pedestrian access with steps and ramps, which look out over the Amphitheatre and Indian Ocean. Overlooking adjacent neighbours was addressed with the design of workbenches near windows facing north. Timber battens direct students from the main entry towards staircase and assist with acoustic dampening.

Materials selected in design creatively consider proximity to the extremes of the ocean and reduce maintenance to a difficult to reach facade. The northern facing classroom façade angle-recessed windows enable shading during summer, but allow winter light back into the building, avoiding any need for awnings.

### Advantages of using the NATSPEC system

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 (AS) and the National Code of Construction (NCC).

Risks were reduced with the product specifications being constantly updated according to the industry standard. Since establishment of our practice in 1996, we have found NATSPEC to be a reliable resource with its specific worksections that are customisable according to the specific project requirements.

### Lessons learnt from the project

Through the use of NATSPEC, we have been able to confidentially go back to the State Government when questions were raised regarding the types of cladding that were specified, to ensure they were compliant with AS and the NCC. Eliminating the client's anxiety by ensuring that all parties (including the builder, sub-contractors and suppliers) were utilising up to date product specifications has been worth its weight in gold! While we never can be complacent in the building industry, it greatly reduces time trying to backtrack knowing what is specified with NATSPEC worksections has kept pace with all current requirements.



*Photographer: Paul Webster*





# Mon Repos Turtle Centre, Bargara, QLD



The Mon Repos Turtle Centre, in Bargara Queensland, is a small-scaled research and interpretive facility located in the sensitive beach environs within the Great Barrier Reef conservation park. The conceptual framework of the project was a search for an authentic site response in the building form, spatial experience and materiality. The design drivers saw the poetic emerge from a deliberate focus on the circumstance of place and purpose of the project.



*External Cladding (Scott Burrows)*

## What was unique about the project?

Mon Repos beach is one of the most important turtle nesting ground in Australia hosting key research into the endangered loggerhead turtle and the impacts of climate change for more than 40 years. During the turtle nesting season, it is a briefing and interpretative hub for up to 300 visitors each evening. Environmental protections require visitors to be guided to and from the centre to the beach in dark night-time

conditions via a set of pathways and boardwalks to safely connect to the beach. The program for the building is simple - a large gathering space "the courtyard", an interpretive space with an immersive theatre, research and office spaces.

We created a structure that underscored the critical and enduring research work occurring at Mon Repos. The structure and building fabric were designed to withstand the corrosive sea air and seasonal cyclones for a lifespan in excess of 40 years, while being largely prefabricated to be constructed in a short time period of 7 months between turtle nesting seasons. This led to the early adoption of glued-laminated timber as the main superstructure. Spotted gum timber was sourced, harvested and manufactured in the region by a locally-owned business (Hyne), responding to the project funding requirement to boost local economy and skills.

The superstructure is a 9.6m x 8.25m diagrid, found to be the most efficient structural design to reduce the overall material use and increase spans between glulam 'tree' columns. The diagrid structure also informed the plan shape, creating a multi-faceted series of triangular folds for protected openings to enhance the mystery of the arrival experience. This diagrid pattern is celebrated throughout the interior

and the diamond pattern implies the intricate patterns of the turtle carapace.

Externally the form is a direct volumetric expression of the mono-pitched diagrid structure. The angular forms are clad in a bespoke folded copper sheeting and were weather protected, recycled tallowwood cladding and screens. The skin allows the facade to breathe while avoiding light spill to the exterior. The building skin will develop a unique patina over time along with its surrounding landscape immersing itself into relatively non-descript landscape of grassy, dune forms and trees. Ensuring it is a demure addition to this sensitive and ancient home to the turtles who travel around the world to nest each year in the same place.

The Mon Repos project was a traditionally procured, fully documented project allowing the required research, detailing and documentation of the structure, materials and finishes. The timber superstructure was procured separately as an early works package, allowing time for the local timber stock to be sourced and enabling the Head Contractor to be able to erect the timber structure in approximately 10 days immediately once the ground slab had been poured.

## What were the advantages of using the NATSPEC system?

The fully documented Architectural project specification was based on the current NATSPEC specification, utilising 58 separate specification sections, with client requested and architectural project specific amendments. The NATSPEC specification system provided an easy to follow, industry standard base specification which allow the clients and architectural amendments suited to this unique project, site and design.

**Architect:** Richard Kirk Architect Pty Ltd (KIRK)

**Photography:** Scott Burrows and Hyne



*External diagrid structure (Hyne)*

# Monaro Mall Canberra Centre Canberra, ACT



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



# Gunditj Mirring Keeping Place & Business Centre, Lake Condah Mission, VIC

Phillips/Pilkington  
Architects 

## What was unique about the project?

The framing and vision for this project is unique in that the building of a 'Keeping Place' enables traditional cultural material of the Gunditjmara people to be transferred from the Melbourne Museum collections, back on country.

The brief contained two distinct types of spaces: the Keeping Place 'museum room', a small, non-public space, a repository that enabled the Gunditjmara to repatriate, store and care for their ancestral heritage objects.

Our strong design intent was to be able to communicate these two types of spaces with different architectural forms, one derived from an observation of the ancient built-form of the region, whilst the other was expressed with a low-pitch roof, a more functional 'western' understanding of space. Conceptually, we were pleased to be able to incorporate the original materials, shapes, colours and proportions to the Keeping Place within a larger and contemporary format.

Broadly, an 8m high steep dome meets a 4m high radial spreading horizontal crescent, the whole unified by careful integration of form, proportion and traditional and contemporary materials

such as timber, stone, steel and glass.

With expert detail resolution from Ardex waterproofing, we were able create the required durable shape using a 1mm Butynol waterproof membrane applied over 3 layers of 6mm curving plywood with horizontal sub-battens, creating a vertical hardwood timber batten 'rain-screen', giving the Keeping Place it's distinctive form.

With 2400mm high gabion-clad stone base of local volcanic fieldstone, originally lava from the Budj Bim volcano, but collected locally from Kurtonitj, the Keeping Place provides echoes of its ancient dwelling predecessors. We completed the dome shape with a light monitor, powered by the 'whole project' on-site 90kW PV system, creating a glowing lantern visible from afar.

## What were the advantages of using the NATSPEC system?

Our practice has always utilised NATSPEC since we commenced nearly 30 years ago and with the site in another state, we wanted to work with a local Victorian consultant team. It was essential to accurately communicate all the detailed design and tender information in order to enable an ambitious and constructable

design to emerge. NATSPEC provided a specification platform that facilitated a successful collaboration across borders.

We started construction and then when the pandemic hit, those borders closed, which prevented us from being able to visit the site, and required the client group to be working from home, but luckily not overly hampering construction activities.

The precision of NATSPEC documents came into their own when you are not able to actually attend the building site for 8 months!

## What are the lessons learnt from the project that you are prepared to share with other designers?

This project had to deliver a regional museum, all off-grid and with its own water supply and ground-mounted PV system, expressing another culture's history with pride, a history that had to also communicate with the next generation of Australians, and offer them a glimpse back into a previous time.

This project had to search for, and find, a modern form and materials expression that could represent an ancient historic reality, one that is many thousands of years old, and is continuing as a vibrant and forward-looking culture.

Accurately and honestly express your design information through the best available tools to hand – that, for us, is where NATSPEC fits into our suite of production information with total reliability and trust.

**Architect:** Phillips/Pilkington Architects Pty Ltd

**Structural, Civil and Building**

**Services engineers:** PM Design

**Quantity Surveyor:** Heinrich Consultants

**Builder:** Nicholson Constructions

**Project Manager:** GHD

**Photographer:** Terry Hope



*This aerial view clearly illustrates the different parts of the design, with the 'Dome' element referencing the traditional timber and stone domestic structures of the Gunditjmara inhabitants of the region. External timber finishes predominate throughout, using 'rainscreen' hardwood battens and vertical hardwood timber cladding.*



# Phoenix Apartments, Tullamore, VIC



## What was unique about the project?

Phoenix is the first boutique apartment building within Mirvac's highly sought-after Apartments of Tullamore precinct, situated within its 6.8-hectare Tullamore community in Doncaster. Designed by Plus Architecture, the luxury five-level low-rise apartment building was completed in mid-2019 and provides a considered approach to multi-residential living. Phoenix was designed with 'timeless elegance' in mind reflected in the use of brick-look tiles to the building's façade and the colour palette which harmoniously blends into the existing Tullamore community. Phoenix offers residents the opportunity to be part of a prestigious community in an outstanding location, coupled with the unique proposition of adaptability that comes with apartment living and the convenience of a low-maintenance lifestyle. Designed to optimise its stunning surroundings, Phoenix makes the best use of lush, green spaces with access to abundant, beautifully considered communal parks and gardens.

## What were the advantages of using the NATSPEC system?

Throughout the design process

for Phoenix, the NATSPEC system provided a good baseline for minimum requirements as well as industry best practice. The system prompted and reminded the designers to ensure everything necessary was covered. The NATSPEC system performed almost like a checklist, the template itself was easy to use and simplified the work processes significantly.



*The façade features a framing pattern with contrasting materials including warm grey brickwork and vertical metal balustrades*

## What are the lessons learnt from the project that you are prepared to share with other designers?

Phoenix was the first apartment building built within the Apartments of Tullamore precinct and as such, was to set a precedent for future developments on site. Ensuring the PPR from the clients

are clear was paramount to a successful design outcome. The Phoenix clients, renowned development company Mirvac, had their own unique set of specific requirements and so the project had to be tailored towards meeting, and exceeding, these expectations. Architecturally, the design is a culmination of architecture in its natural context, making use of and enhancing features of the site whilst respecting both its urban and existing heritage surroundings. Seamlessly blending with the existing nearby residences in both form, design, and functionality, while also incorporating features of existing heritage buildings on site, such as the Tullamore Homestead which has been retained and repurposed, allowed for a cohesive mix of modern and traditional elements.



**Photography:** Tom Roe Photography



*Phoenix is arranged to make the best use of its natural elements. A timeless contemporary façade contrasts with the established green surrounds of the Tullamore landscape, providing outstanding views across the parkland of Tullamore to Melbourne's CBD, Doncaster and Box Hill*





# Japara, 'The Regent' Aged Care Facility Mount Waverley, VIC

spowers

## What was unique about the project?

Japara, 'The Regent', Aged Care Facility, Mount Waverley by Spowers was designed to connect residents to the surrounding nature reserve as part of an overall strategy to enhance the life of the residents.



*The Regent is located in a leafy pocket in Melbourne's Southeast*

Floor to ceiling windows in private rooms make use of the views across the verdant landscapes and surrounding parklands of this leafy pocket in Melbourne's Southeast. Materials like timbers, stone and a neutral palette of creams and whites draw the outside in and considered lighting compliments the natural daylight, helping residents keep track of the time of day and season.

The notion of community and neighbourhood informed the organisation of the various spaces, translating into a wayfinding strategy that was familiar and intuitive, providing a sense of safety and comfort for the residents through strategies of the 'high street', where many of the social assets including the wellness centre, library, gym and theatre reside, through to the smaller cul-de-sacs where residents' private rooms are positioned.

The village accommodates 105 modern, contemporary apartments to suit low to high care needs, communal spaces for residents to enjoy with visitors and guests, backed by a belief that connection to family, friends and community is essential to our wellbeing, and critical to a successful transition to aged residential care.

The project was a recent international winner in the Seniors Living category of the Shaw Contract Design Awards.

From 467 entries, across 29 different countries, down to 7 final winners amongst projects that celebrate impactful living, working, learning and healing spaces around the world.

To compound the social impact element of the awards, winners received US \$5000 (AUD \$6468) to be donated forward to a charitable organisation of their choice. Spowers chose Plan Australia, an organisation working towards girls equality through education and empowerment.



*The contemporary village offers social assets and communal spaces for residents to enjoy with visitors and guests*

## What were the advantages of using the NATSPEC system?

NATSPEC provides the design team with up-to-date reference material and relevant Australian Standards clauses that are easily identified and quickly referenced.

The ease at which relevant sections and clauses can be extracted and assembled to tailor specifications to suit a particular project is of immense benefit to the design and delivery team, saving time and energy.

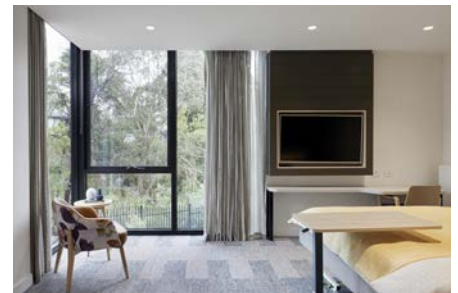
At The Regent, we were able to assess comfort and thermal requirements and use the NATSPEC branded worksections to specify insulation and flooring underlay that would suit the needs of users and authorities. We selected powder coating and roofing that would perform at industry best practice levels whilst contributing positively to the overall aesthetics of the building.

Our office has been using NATSPEC for many years now. In fact, it is even easier

than ever with the inbuilt formatting of the document templates, resulting in a well organised, user friendly and professional document.

## What are the lessons learnt from the project that you are prepared to share with other designers?

It is vitally important that the person preparing the specification also needs to be the person involved in the critical design elements and the delivery of that project. This helps save valuable time and ensures these key design elements are reflected in the document. Every project is unique and requires the specification writer to fully understand the project.



*Floor to ceiling windows in private rooms and making use of the views across the verdant landscapes*

The "step by step" approach inherent with NATSPEC permits a structured approach to checking relevant sections and clauses which are then closely aligned to the design, the relevant drawings and supporting documents.

The NATSPEC approach to specification preparation in many ways removes the guess work from what some people do as a traditional "cut and paste" specification. Many of us have seen first-hand the problems that this gets projects into. We highly recommend NATSPEC to any firm or practice that is seeking to adopt a specification package that saves time, reduces errors and ultimately manages costs.

**Architect:** Spowers  
**Builder:** Hutchinson Builders  
**Interior Designer:** Spowers  
**Structural Engineer:** WGA  
**Services Engineer:** Lucid  
**Photographer:** Tatjana Plitt



# Rouse Hill Anglican College, NSW

## TERROIR

Rouse Hill Anglican College is a campus consisting of buildings completed between its founding in 2002 and through to the current project phase which is due for site commencement in June 2023.



*View of eastern façade and external learning areas*

There have been three project phases completed between 2014 and 2021, two of which are the continuation of the school's masterplan which involves the relocation of the Junior School to the northern portion of the school site, separating the school into discernibly distinct Senior and Junior School areas. The upcoming fourth phase is the first Senior School project which will see a considerable upgrade to the schools existing Senior School teaching facilities and surrounding external teaching spaces and supporting infrastructure.

### What was unique about the project?

A unique aspect of the project is the way in which our design approach enables the school's shift in teaching pedagogy. The existing buildings and their internal spaces were compartmentalised to support a traditional mode of teaching; our challenge was to break this model and develop a design approach that supported a more student-centred learning model. In parallel to this design exercise the school's spatial needs had exceeded original enrolment projections.

The design approach over the three completed phases has evolved to respond to much valued user feedback as well as changes to NNC Australian standards and other relevant statutory requirements. The first of these phases drew upon an existing base building form to give a visually cohesive

approach to the northern area of the school campus. The design approach for the interior spaces involved rigorous interrogation of the existing internal layouts to provide greater flexibility, adaptability, and connections between the learning spaces. Each of the new Junior School buildings includes co-joined general learning areas that open onto a multipurpose central learning area, there is also the addition of a central mezzanine space which is a significant shift from the traditional classroom.



*View of communal walkways connecting the learning spaces*

### What were the advantages of using the NATSPEC system?

There are many advantages of using NATSPEC on our commercial projects, particularly within the education sector. Confidence in compliance and the assurance that our documentation outputs are in line with industry standards is of the utmost importance to our practice and our clients. Using NATSPEC also allows us to develop the architectural specification in parallel with drawings and schedules achieving an efficient documentation workflow. The rigor of documentation coordination which NATSPEC helps enforce is a key tool in ensuring quality assurance and mitigates discrepancies in our documents which allows us to de-risk our clients from budget pressures caused by variations.

Our practice is driven by delivery of excellence for our clients and user groups. Features such as clearly defined project hold points and prototypes allows us to work cooperatively with both contractor and client ensuring all parties are satisfied with building methodologies and the final level of finish prior to hand over.

### What are the lessons learnt from the project that you are prepared to share with other designers?

A challenge in any project is dealing with errors and omissions however, we also believe that these can form important 'lessons learnt' which in turn allows us to improve and strengthen our documentation protocols and coordination. In the case of Rouse Hill Anglican College, the issue of coordination and navigating around existing infrastructure provided a challenge. Another significant change in delivery of the three completed projects has been supply chain and builder's substitutions, notably over the past two years where timber supply and COVID have both had a significant impact on availability, site access and construction program.



*View of Internal flexible Central Learning space and mezzanine*

Using NASTPEC as our specification template assisted in navigating around these challenges. Features such as warranties, hold points for inspections and overall compliance meant that there was a clear dialogue between architect and contractor in terms of the required level of quality that had to be achieved.

**Architect:** TERROIR

**Client:** The Anglican Schools Corporation

**Builder:** Junior School Stage 1 - FAL Construction Group  
Junior School – K Block COWIN Building Group  
Junior School L Block - Cash McInnes Projects Pty Ltd  
Senior Studies Building – Belmadar  
**Photography:** Brett Boardman  
Renders provided by TERROIR



# Northshore Christian Grammar School Alkimos, WA

TR  
CB.

## The Project

This project is a new Kindergarten to Year 12 school located in Alkimos; a new coastal housing estate on the northern edge of Perth.

The first stage of buildings provide accommodation for young children and have been designed to provide a flexible, playful and enriching environment. Natural materials such as rammed earth, stained timber, coloured concrete, coloured glass and galvanised steel have been selected for their tactile qualities as much as for their durability and beauty.

## What was unique about the project?

The site is on coastal sand dunes approximately 2km from the beach; the ocean can be heard and smelt from the site, but is unseen. The buildings have been designed with the idea of yearning for the water; the flow of rainfall is made visible using oversized spouts and downpipes, to encourage children to interact with the falling rain.

The connection to the coast is further developed by entrances to buildings being reminiscent of lighthouses: vertical elements at the entrance to each building features coloured glass that captures the sun by day and radiates coloured light in the evenings.

Northshore Christian Grammar School is a low-fee school catering to families that desire a Christian education for their children. It was imperative that the new school delivered value while ensuring low maintenance costs into the future.

Construction time was also a key consideration for the project because funding processes only allowed an 11-month window for construction from greenfields site to the completed building including bulk earthworks, site services, roads, car parks and landscaping.

Cost and time considerations led to the decision to build entirely with steel



*Northshore CGS primary school entry, featuring yellow-tiled finish  
Photographer: Rob Frith, Acorn Photo*

framing and lightweight construction panels accentuated with some feature rammed earth walls to provide a sense of permanence and variety to the buildings.

This is an unusual choice in Western Australia where the majority of school buildings are steel framed and clad with cavity brickwork. The steel frame was clad internally with plasterboard, plywood and a wide variety of finishes including vinyl, linoleum, pinboard and ceramic tiles.

## Advantages of using the NATSPEC system

Taylor Robinson Chaney Broderick prefers to use the NATSPEC Specification System for all of our projects in order to ensure all standards referenced are up-to-date and preliminaries are in lock step with the building contract.

We have adopted the nomenclature utilised in NATSPEC to use on our working drawings and schedules, to provide a consistent approach for all projects in the office and remove ambiguity from our documentation. Builders and subcontractors are also familiar with the format and the standards of workmanship specified.

In this project, particular attention was paid to corrosion performance and paint specification due to the coastal location and to concrete finishes for coloured insitu paving and floor slabs.

Availability of specialist trade sections such as Monolithic Stabilised Earth Walls (rammed earth) is a helpful feature of NATSPEC particularly when dealing with specialist “boutique” contractors who are not always able (or unwilling) to provide detailed information during the design stage.

Extensive use was made of prototypes and samples for components requiring a high standard of finish, particularly with wet trades such as rammed earth, coloured concrete and paint finishes – all of which were specified prior to tender.

The finished product achieved by De Francesch Building Company was of very high quality, particularly given the overall low cost of the project. The builder engaged proactively with us throughout the project to further refine our detailing and ensure trades met our expectations for the specified quality of finishes and coordination.

# Craigmore High School STEM Facilities, Blakeview, SA

+ TRIDENTE BOYCE

This is a project about transition, recycling and reuse, and a development that fosters technological innovation and education. It demonstrates that seismic bracing can be successfully integrated into a transparent and flexible contemporary learning environment.



*Internal view – the transparency*

Craigmore High School is located in the northern suburbs of Adelaide and is a co-education school of over 1100 students. The existing built form is typical of many schools designed in the 1970 's where most buildings are solid, inward looking and cellular offering little connection to the external environment. This building was no different.

The South Australian Government implemented a STEM program rollout throughout its' schools that required re-purposing of existing infrastructure to accommodate the delivery of these programs at the same time as realising environments conducive to 21st century

learning pedagogies. All whilst working to modest budgets.

## **What was unique about the project?**

The core principles adopted during the development of the Craigmore High School Stem facilities were to maximise transparency, flexibility and connectivity. As a result of the major refurbishment the existing building structure required upgrading to meet current earthquake standards. This was integrated with the interior design to provide a unique identity for the STEM precinct within the school.

## **What were the advantages of using the NATSPEC system?**

NATSPEC, a required tool of the Department for Infrastructure and Transport, was tailored to successfully combine its comprehensive performance requirements and compliance to Australian Standards with project specific requirements to enable these special facilities to be realised and the high standard of quality achieved.

The new facilities allow the focus to be on real-world problems based around sound engineering design processes with hands-on inquiry and open-ended exploration. The open, integrated and co-located facilities foster the productive teamwork required to achieve this.

## **What are the lessons learnt from the project that you are prepared to share with other designers?**

This project has transformed the ground floor of the traditional two-storey classroom block into a vibrant, light and transparent learning centre to promote collaborative learning. The STEM facility successfully encourages crossover of core disciplines to inspire students to explore avenues that they may never have contemplated.

This simple yet effective intervention is flexible, light filled and provides a clear demonstration that sound building fabric can and should be reused.



*Internal view – the transition*

**Architect:** Tridente Boyce Design Studio

**Builder:** MYKRA Pty Ltd

**Photographer:** Simon Cecere



*Internal view – the exposed earthquake bracing*





# Kiara College, Kiara, WA

with **architecture**  
studio

## What was unique about the project?

The additions to the Kiara College campus improve the educational offering by bringing online a new performing arts centre, student services, plus some minor refurbishments and additions across the site. What made this project stand out was the approach taken to address the public domain, taking the opportunity to refresh the school's identity and re-engage with the community. Where the original campus was set-back from the street, the new entrance from Benara Road welcomes pedestrians and traffic into the school. The new performing arts centre is designed for after-hours events and capable of bringing together the school community, as well as offering a new access to the campus.

The project provides a distinctive image to the school and is clearly visible from Benara Road. The performing space features an elevated fluted aluminium clad 'crown' inspired by the pleats of the curtains in performing venues. This volume, with its light colour and visually striking form marks the school's new character, a clear contrast to the predominant brick building and fibre cement fascias present throughout the school.

## What were the advantages of using the NATSPEC system?

As a long-term subscriber to the

NATSPEC system, With Architecture Studio has been able to benefit from the scalability of the system, as well as developing a robust set of performance criteria that form part of our documentation packages. NATSPEC's regular updates provide reassurance against the continuing evolution of regulatory framework, making sure that project specifications will be up to date with current codes and standards. The system allows for a step-by-step process to produce and complete a specification pack.



*North West Corner*

## What are the lessons learnt from the project that you are prepared to share with other designers?

The project was awarded in September 2020. The impact of the COVID pandemic and the subsequent stimulus released by the WA government saw significant shifts in the construction industry affecting both labour availability, and further impacts resulting from changes to supply chains. Availability

of some selected products became an issue during construction, so it was an advantage to have NATSPEC's robust set of performance criteria to guide the relevant specification sections. These criteria assisted the Contractor to streamline the process of selecting alternative products when the originally specified products became unavailable.



*Central Courtyard*

**Architect:** With Architecture Studio

**Builder:** EMCO Building

**Photographer:** Ed Janes



*Six Seasons Courtyard*



# Industry Testimonials



**Australian  
Institute of  
Architects**

The Australian Institute of Architects is proud to be a founder and owner of NATSPEC and continues to endorse the NATSPEC National Building Specification. NATSPEC, a not-for-profit organisation, maintains the national and comprehensive master specification on behalf of the Australian industry, with input from many of the Institute's members, and reflects the latest national regulations and standards. NATSPEC's regularly updated information reduces the risk of expensive litigation for designers and improves the communication with builders.



"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



"The National Building Specification (NATSPEC) has been a trusted voice for government, industry and professional bodies for more than 45 years; playing a critical role in improving the quality of construction in Australia."

"As a strong advocate for increased professional standards, Engineers Australia is proud to be a founding member of NATSPEC and strongly endorses their professional and special packages."

Romilly Madew AO, CEO Engineers Australia



"The quality and productivity of the building and construction industry is enhanced by the work of the National Building Specification (NATSPEC). For more than 45 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, Master Builders 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."

Adrian O'Connell, Chief Executive Officer, Standards Australia



## GETTING HELP

**INTRODUCTION**

This TECHnote summarises the various ways that 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 Works 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.

See NTN GEN 029 for more on design and specification *Guidance* text.

**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 *SPECnotes*, a quarterly newsletter for subscribers.

**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.

**NATSPEC Website**

See [www.natspec.com.au](http://www.natspec.com.au). NATSPEC's website has a range of material including:

- Details of NATSPEC specification packages, including abstracts of worksections.
- A link to SPECbuilder and Domestic Online.
- A link to NATSPEC Class 2 Reference Specification.
- Links to Product Partners' websites arranged by worksection.
- 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](http://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 and NATSPEC in Microsoft Word. If you have problems finding what you want, feel free to contact us directly.

**CONTACT INFORMATION**

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# Setting the Standard: How NATSPEC Enhances Construction Quality

In the realm of construction and architecture, precision and clarity in project specifications are paramount. The success of any building project hinges on the meticulous detailing of materials, methods, and standards. This is where NATSPEC the National Building Specification, emerges as an indispensable resource for professionals in the industry.

## The Backbone of Building Specifications

At its core, NATSPEC the National Building Specification serves as the backbone for creating comprehensive, accurate, and industry-compliant project specifications. It's not merely a document; it's a dynamic resource that empowers architects, specifiers, and builders to navigate the complex landscape of construction.

## The Depth of Coverage

One of the key strengths of NATSPEC lies in its extensive coverage. It encompasses a wide spectrum of construction elements, from architectural and interiors to landscaping. Whether you're involved in commercial, residential, or industrial projects, NATSPEC has you covered.

## Unrivaled Flexibility

Flexibility is a hallmark of NATSPEC. It recognises that no two construction projects are alike. NATSPEC's flexibility shines through in its adaptability to different project types, sizes, and complexities. From high-rise commercial structures to modest residential homes, NATSPEC tailors its offerings to suit your needs.

## The Professional Package

Imagine having access to a treasure trove of over 150 worksections meticulously crafted to meet industry standards. This extensive library is a game-changer, allowing you to craft specifications that leave no room for ambiguity. You can rest assured that every aspect of your project is well-defined and compliant.

## Guidance for Quality

NATSPEC goes beyond offering a vast repository of worksections. It provides guidance that ensures the highest standards of quality and precision in your project specifications. This guidance is especially crucial in an industry where even the slightest oversight can lead to costly errors.

## Embracing Technology

In the digital age, staying technologically current is imperative. NATSPEC recognises this and provides SPECbuilder, an online specification compilation software that's compatible with various operating systems. It streamlines the process, making the creation of specifications efficient and user-friendly.

## Constant Evolution

The construction industry is ever evolving, with regulations, codes, and standards in a state of perpetual motion. NATSPEC acknowledges this reality and offers biannual updates that align with changes to the National Construction Code and Australian Standards. You can trust that your specifications are always up-to-date and in compliance.

## Customisation for Precision

Architects and specifiers are known for their attention to detail. NATSPEC embraces this trait by allowing you to customise worksection templates in Microsoft Word format. This means you can tailor project specifications to your exact requirements, ensuring precision and excellence in your work.



"NATSPEC fulfils an 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."

Jonathan Cartledge, Chief Executive Officer, Consult Australia



# BUILDING Professional Package

BUILDING Professional is NATSPEC's definitive building specification package with over 150 worksections. It covers site, architectural, interiors, and landscaping and provides design and install worksections for mechanical, hydraulic and electrical services. Demolition, tendering and contract preliminaries are also covered. To complete this comprehensive package, BUILDING Professional includes BUILDING Basic worksections for less complex projects. NATSPEC BUILDING Domestic specification is also included.

## Intended use

- High-rise commercial
- Health
- Educational
- Industrial
- Entertainment
- High-rise and medium density residential
- Sports
- Domestic

### Size and complexity

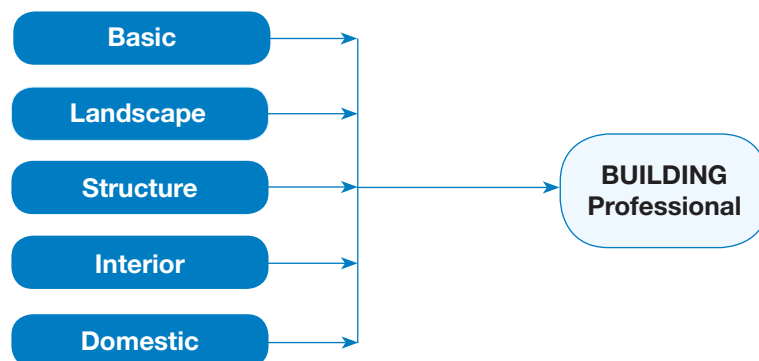
Large technically complex projects through to very simple buildings

### Typical users

Architects, building designers and multi-disciplinary consultants

## Inclusions

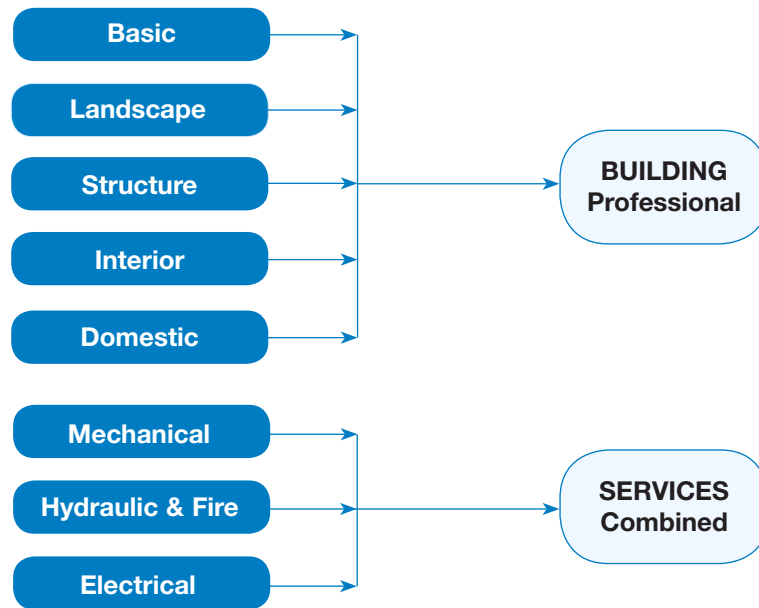
- Twice yearly update including changes to the National Construction Code and Standards.
- SPECbuilder online specification compilation software compatible with all versions of Windows, Macintosh and Linux operating systems.
- Editable worksection Templates in Microsoft Word \*.docx format. See the National Worksection Matrix for the worksections included in this package and NATSPEC Worksection Abstracts for a summary of each worksection's content and application.
- Hidden text Guidance for developing project specifications for tender and contract documentation.
- Fully searchable pdf version of package with highlighted updates.
- Instructional guides and technical resources.
- Package USB for backup.
- Unlimited use of Domestic Online.
- Branded Worksections are meticulously prepared documents that are editable with guidance text, and product options. This ensures consistency, clarity, and adherence to good industry practices for achieving success in building projects.



To request an information pack or to discuss your specification needs with one of our technical staff members, please contact us on 1300 797 142 or email: [mail@natspec.com.au](mailto:mail@natspec.com.au).

Subscription form can be downloaded at [www.natspec.com.au](http://www.natspec.com.au)

# 10 Specialist Packages



PACKAGE	APPLICATION
<b>BUILDING Professional</b>	<p>The NATSPEC content is informed by the National Construction Code. NATSource lists all Standards and publications throughout the Normal style text in NATSPEC.</p> <p>For architects and building designers engaged on all building project types. BUILDING Professional is NATSPEC's definitive building specification containing over 160 generic NATSPEC worksections. It covers site, architectural, interiors and landscaping, and provides design and install worksections for mechanical, hydraulic, electrical and fire services. Demolition, tendering and contract preliminaries are also covered. In addition, BUILDING Professional includes the reduced content BUILDING Basic worksections, the BUILDING Domestic specification and access to the DOMESTIC online specification and custom schedules for use with the NATSPEC Class 2 Reference Specification. The reduced content BUILDING Basic worksections may be selected for the less complicated parts of specific projects.</p>
<b>BUILDING Basic</b>	<p>For architects and building designers, this is a cut-down version of the BUILDING Professional package. It is aimed at simple building projects requiring less technical content on products, execution and scheduling. It contains over 90 generic NATSPEC worksections. Of these, approximately 30 have reduced content, compared to the equivalent worksection included in BUILDING Professional. In addition, BUILDING Basic includes custom schedules for use with the NATSPEC Class 2 Reference Specification.</p>
<b>BUILDING Landscape</b>	<p>For engineers and landscape architects engaged on site preparation works and all works external to the building and within the site boundary, together with design and installation work for mechanical, hydraulic and electrical services. Demolition, tendering and contract preliminaries are also covered. It is not applicable to works outside the site boundary, such as vehicular crossings and works within local or state government road reserves.</p>
<b>BUILDING Structure</b>	<p>For engineers engaged on structural work intended for occupation. It covers materials for components that are necessary for the adequate strength and appropriate serviceability behaviour of buildings. It is not intended that the worksections should apply to civil engineering structures, such as bridges, dams and roads.</p>
<b>BUILDING Interior</b>	<p>For architects, building designers and interior designers engaged on comprehensive interior projects. It covers interior building and finishing work, together with design and installation work for mechanical, hydraulic, electrical and fire services. Demolition (interior), tendering and contract preliminaries are also covered.</p>
<b>BUILDING Domestic</b>	<p>For architects and building designers constructing, extending or renovating uncomplicated single dwellings. It covers site and architectural work, and design and installation work for mechanical, hydraulic and electrical services. A subscription to BUILDING Domestic includes access to the DOMESTIC online specification.</p>
<b>SERVICES Combined</b>	<p>For engineers and services consultants designing and documenting building services installations for small to large building projects. It contains all material in each of the SERVICES Mechanical, Hydraulic &amp; Fire and Electrical specification packages. It includes the most commonly used building services and components, demolition, tendering and contract preliminaries.</p>
<b>SERVICES Mechanical</b>	<p>For engineers and mechanical services consultants designing and documenting mechanical services for small to large building projects. It includes the most commonly used mechanical services and components, demolition, tendering and contract preliminaries.</p>
<b>SERVICES Hydraulic &amp; Fire</b>	<p>For engineers, hydraulic services and fire services consultants designing and documenting hydraulic and fire services installations for small to large building projects. It includes the most commonly used hydraulic and fire services and components, demolition, tendering and contract preliminaries.</p>
<b>SERVICES Electrical</b>	<p>For engineers and electrical services consultants designing and documenting electrical services for small to large building projects. It includes the most commonly used electrical services and components, demolition, tendering and contract preliminaries.</p>

For more information visit [www.natspec.com.au](http://www.natspec.com.au)



## Benefits of Subscription

### SPECnotes

SPECnotes is the quarterly newsletter on Standards and regulatory changes. Included is an outline of the latest Standards changes as well as additional interesting information.

### NATsource

NATsource is the definitive reference document for Standards and reference documents relating to the building industry. The short description of the publications allows you to determine its relevance to your project. This pdf document is searchable to provide easy research. This document also advises designers where they may purchase the documents.

### TECHnotes

TECHnotes are one or two page summaries providing professional knowledge on current issues in the building industry and related provisions by NATSPEC. They are divided into three groups – Design, General and Product. TECHnotes help you to keep up-to-date with industry changes. They are available to download from Resource Materials and are generally updated in April and October.

### TECHreports and NATSPEC Papers

TECHreports and NATSPEC Papers are in depth reference documents and are available to download from Resource Materials. Topics include Specifying ESD and Specification Writing.

### SPECbuilder Live

SPECbuilder is NATSPEC's online specification compilation program. It permits worksections to be easily compiled into a draft project specification by the design team.

### Branded Worksections

Whilst NATSPEC does not endorse any specific manufacturer's products we do encourage you to consider our Product Partner's offerings. As a not-for-profit organisation Product Partners assist NATSPEC to keep the price of the national building specification affordable. These Branded Worksections have most of the complete/delete clauses completed for you and allow your selections to be quickly incorporated into the specification.

### PDF Versions

Within the Resource Materials section online are pdf versions of NATSPEC's worksections. These are fully searchable, allowing you to quickly locate information with the latest changes highlighted in yellow for your convenience.

### Economies of Scale

NATSPEC is a not-for-profit organisation owned through government and industry. Our team of twenty track and incorporate the latest changes to regulation, standards and industry information. Could you afford to have twenty of your staff dedicated to this function? We are indebted to the many organisations and individuals that freely provide their time in the development and review of worksections.

### Current Information

NATSPEC's greatest value is its update service. Only NATSPEC can claim the accuracy and currency of its information. Not only are the worksections updated every April, to reflect the changes with the National Construction Code, the October update includes the latest status including Standards updates. Additionally, the NATSPEC website has monthly updates on Standards plus additional relevant information. Worksections are reviewed by the industry for the industry.

### National

NATSPEC is a truly national Australian specification system. Its approach of incorporating feedback from many sources means that one specification system is relevant to projects spread across Australia.

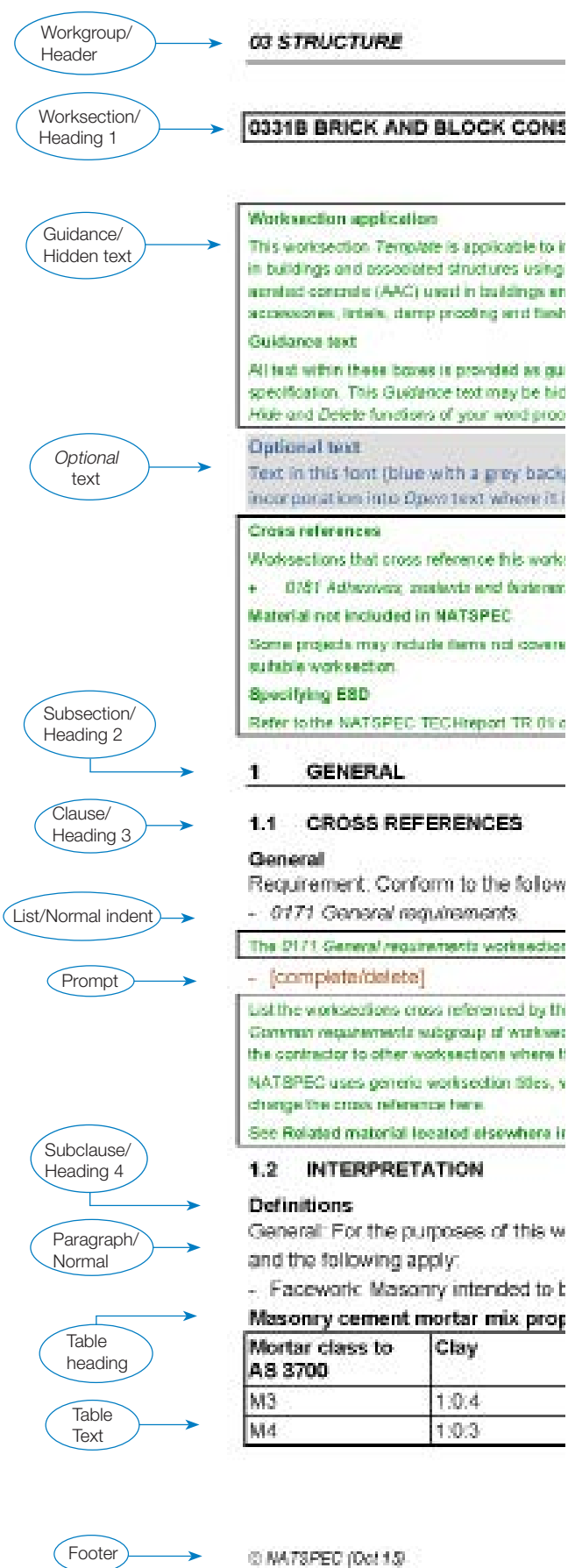
### Contractually "tight"

Tight specifications produce quality projects and minimise variations. NATSPEC places particular emphasis on producing contractually tight specifications by eliminating such risks as vague and contractually empty phrases, unnecessary duplication and reliance on out of date standards and reference documents.

### Integrated

Because it is a comprehensive specification system, NATSPEC is integrated. Unlike specifications built by combining material from disparate sources, a project that uses NATSPEC's integrated approach can eliminate the "holes" and duplication inherent in other approaches. That means it can reduce the risk of contract variations while also reducing the cost of coordination.

## NATSPEC Worksection Components





*'... 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.'*

Bryce Mortlock - Father of NATSPEC, RAIA Gold Medallist

#### **NATSPEC is owned by the following organisations:**

- 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
- Construction Industry Engineering Services Group
- Consult Australia
- Department of Housing and Public Works (QLD)
- Department for Infrastructure and Transport (SA)
- Department of Finance (Federal)
- Department of Finance (WA)
- Department of Logistics and Infrastructure (NT)
- Department of Treasury and Finance (TAS)
- Department of Treasury and Finance (VIC)
- Engineers Australia
- Infrastructure Canberra
- Master Builders Australia
- Public Works Advisory (NSW)
- Standards Australia

# **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 45 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 team's 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 sustainable built environment through leadership of information. It is impartial and is not involved in advocacy or policy development.

[www.natspec.com.au](http://www.natspec.com.au)

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