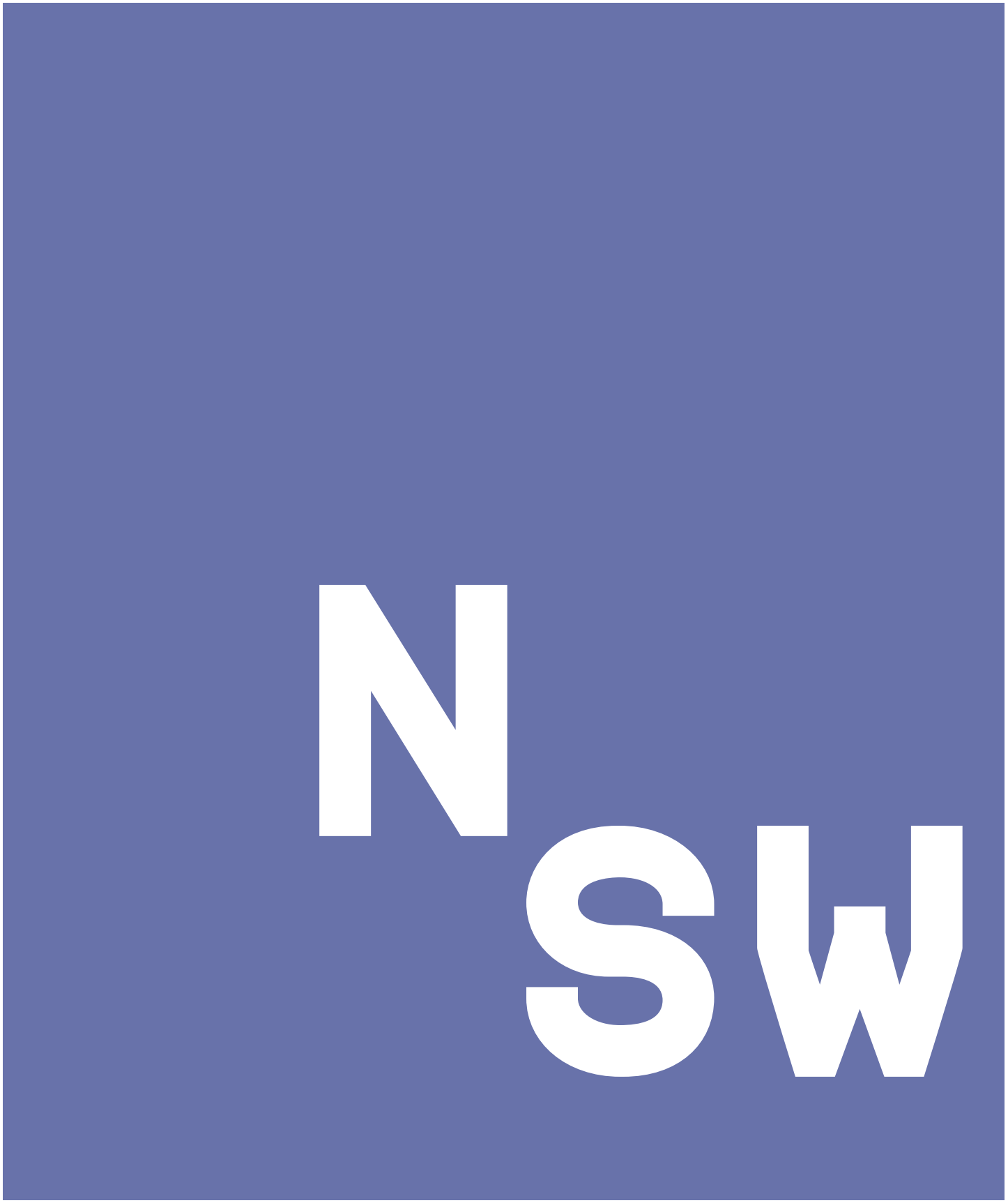
draft for comment

BETTER SCHOOLS

A design guide for schools in NSW

GOVERNMENT
ARCHITECT
NEW SOUTH WALES


G
A


NSW

CONTENTS

COVER IMAGE
Our Lady of the Assumption Catholic Primary School.
BVN Architects.
Image: John Gollings

Status of this Document

This document is a draft of a Design Guide intended to accompany the document entitled Public Consultation Draft – State Environmental Planning Policy (Educational Establishments and Child Care Facilities) 2017 (draft Education SEPP) on public exhibition.

It is proposed under the draft Education SEPP that a consent authority take into consideration the design quality of a proposed school development when evaluated in accordance with seven design quality principles before determining a development application (DA).

The draft SEPP also requires that a qualified designer must verify that the development achieves the design quality principles before a complying development certificate (CDC) can be issued for certain school developments.

The design quality principles are outlined in Schedule 4 of the draft Education SEPP. This document – the draft Design Guide – provides practical guidance on how school projects can be designed to best address the design quality principles in the draft Education SEPP.

The Guide is intended to assist school developers in planning projects, and consent authorities and qualified designers in assessing school DAs and school proposals for CDCs.

Following public consultation, the Design Guide will be revised and finalised as part of a package of material to support and accompany the Education SEPP.

Preface

This document has been prepared by the Government Architect NSW who provides leadership for the New South Wales Government in architecture, landscape architecture and urban design.

About this guide

This Design Guide is a set of principles and requirements intended to support the delivery of good design for schools across NSW.

Good design means that buildings and spaces function in a way that contributes to the quality of life for the community and those who use them.

Good design improves the delivery of public services, gives a sense of identity and community, can improve user health and safety, and helps build a sustainable future.

Good design delivers value-for-money as well as better buildings and places, particularly when attention is paid to the full cost of a building's lifetime.

There is growing appreciation of the significant role that good design can play in education environments, with increasing evidence that student learning outcomes are closely related to the quality of learning environments.

Factors such as air quality, ventilation, natural lighting, thermal comfort and acoustic performance have been shown to have a profound impact on teacher well-being and student attentiveness, attendance and overall performance.

Well-designed school facilities have spaces for learning, discovering, sharing and interaction. With an increasing awareness of the need for schools to prepare students for a rapidly changing global economy, skills such as creativity, communication, collaboration and critical thinking are becoming as valued as more traditional literacies for the future workforce. This means creating settings for more student-centred approaches to learning, and ones in which relationships between students, and between students and teachers can be fostered.

It is essential that school facilities enable the learning and teaching outcomes required of a modern curriculum, and that they are agile and flexible enough to support a range of pedagogical modes and learning styles.

High quality school facilities are a vital part of a healthy and thriving community and can provide an important civic place for meeting and exchange.

School facilities that are engaging, distinctive and contextually responsive can build a sense of pride and ownership among students, teachers, and the broader community.

Parramatta Square.
Image: GA NSW.

Who is the Design Guide intended for?

The Design Guide has been prepared for:

- communities in which school building is taking place
- schools, planners, urban designers, architects, landscape architects, builders and other professionals when involved in designing and building school facilities
- planners assessing new school designs and school building upgrades
- architects preparing a design verification statement for a complying development certificate.

Aims of the Design Guide

The aims of this Design Guide are to:

- promote and champion good design processes and outcomes for schools across NSW
- deliver schools that respond positively to their physical, social and environmental context
- support the delivery of excellent learning environments.

How to use the Design Guide

The Design Guide is organised into three parts:

- **part one**: lists design quality principles referred to in the State Environmental Planning Policy (Educational Establishments and Child Care Facilities) 2017 **(Education SEPP)**.
- **part two**: provides guidance on how to deliver projects that best meet the requirements of the design quality principles and State Environmental Planning Policy (Educational Establishments and Child Care Facilities) 2017 **(Education SEPP)**.
- **part three**: outlines best practise design and evaluation processes.

Ravenswood School for Girls.
BVN Architects.
Image: John Gollings.

part one

design quality principles

1

The following section outlines the Design Quality Principles to be used when designing new schools and school building upgrades.

These principles are a set of values that enable a common understanding between a design team, school staff, students and the community when designing new school buildings.

"OUR STUDENTS COMPETE ON A GLOBAL STAGE AND THEY NEED NEW SKILLS TO PREPARE THEM FOR FURTHER STUDY AND JOBS – MANY OF WHICH HAVE NOT YET BEEN CREATED. THEY NEED SKILLS WE CALL THE 4CS: CREATIVITY, COMMUNICATION, COLLABORATION AND CRITICAL THINKING."

— NSW DEC, 21st Century skills for Australian Students

1 /

Context, built form and landscape

Schools should be designed to respond to and enhance the positive qualities of their setting, landscape and heritage.

The design and spatial organisation of buildings and the spaces between them should be informed by site conditions such as topography, orientation and climate.

Landscape should be integrated into the design of school developments to enhance on-site amenity, contribute to the streetscape and mitigate negative impacts on neighbouring sites.

2 /

Sustainable, efficient and durable

Good design combines positive environmental, social and economic outcomes. Schools and school buildings should be designed to minimise the consumption of energy, water and natural resources, reduce waste and encourage recycling.

Schools designs should be durable, resilient and adaptable enabling them to evolve over time to meet future requirements.

3 /

Accessible and inclusive

Schools buildings and their grounds should provide good wayfinding and be welcoming, accessible and inclusive to people with differing needs and capabilities.

Schools should actively seek opportunities for their facilities to be shared with the community and to cater for activities outside of school hours.

4 /

Health and safety

Good school development optimises health, safety and security within its boundaries and the surrounding public domain, and balances this with the need to create a welcoming and accessible environment.

5 /

Amenity

Schools should provide pleasant and engaging spaces that are accessible for a wide range of educational, informal and community activities, while also considering the amenity of adjacent development and the local neighbourhood.

Schools should include appropriate, efficient, stage and age appropriate indoor and outdoor learning and play spaces, access to sunlight, natural ventilation, outlook, visual and acoustic privacy, storage and service areas.

6 /

Whole of life, flexible and adaptive

School design should consider future needs and take a whole-of-life-cycle approach underpinned by site wide strategic and spatial planning.

Good design for schools should deliver high environmental performance, ease of adaptation and maximise multi-use facilities.

7 /

Aesthetics

School buildings and their landscape setting should be aesthetically pleasing by achieving a built form that has good proportions and a balanced composition of elements.

Schools should respond to positive elements from the site and surrounding neighbourhood and have a positive impact on the quality and character of a neighbourhood.

The built form should respond to the existing or desired future context, particularly to those elements that have a positive impact on the quality and sense of identity within the neighbourhood.

St Columbas Primary School,
Sydney Catholic Schools,
Neeson Murcutt Architects.
Image: Brett Broadman.

part two

design guidance

2

The following section provides guidance on how to meet the requirements of the Design Quality Principles.

Designing school buildings and grounds can be a complex and involved process, but everyone, whether they are a pupil, teacher, parent, principal, local authority, community member, architect or building contractor, has a unique and important part to play.

When all these groups come together and work as a team, schools can be created that have a real sense of purpose, identity and place.

1 /

Context, built form and landscape

New school development should:

- Respect and respond to its physical context, neighbourhood character, streetscape quality and heritage
- Respond to its natural environment including local landscape setting and orientation
- Retain existing built form and vegetation where significant
- Include tree planting and other planting that enhances opportunities for play and learning
- Ensure landscaping improves the amenity within school grounds and for uses adjacent to the school
- Provide buffer planting in setbacks where appropriate to reduce the impact of new development
- Be informed by a current Conservation Management Plan (CMP) and consider local heritage items both on the school site and in the local neighbourhood
- Take advantage of its context by optimising access to nearby transport, public facilities and local centres
- Be designed to minimise security fencing, particularly along public street frontages

2 /

Sustainable, efficient and durable

New school development should:

- Be responsive to local climate including sun, wind and aspect
- Select materials and approaches to detailing that are robust and durable
- Provide capacity for multiple uses, flexibility and change of use over time
- Integrate landscape, planting and Water Sensitive Urban Design (WSUD) principles to enhance amenity and building performance
- Include deep soil zones for ground water recharge and planting
- Minimise reliance on mechanical systems
- Include initiatives to reduce waste and embodied energy and emissions, through the use of advanced energy production and distribution systems where possible
- Maximise opportunities for safe walking, cycling and public transport access to and from the school
- Ensure the design of building and spaces is able to evolve into the future

3 /

Accessible and inclusive

New school development should:

- Engage students, educators and the community in development of the vision and design brief for the school
- Provide diverse, attractive and accessible spaces to learn, play and socialise.
- Actively seek opportunities for school facilities to be shared with the community and cater for activities outside of school hours
- Provide school frontages and entrances that are visible, engaging and welcoming
- Encourage access for members of the community to shared facilities after hours
- Ensure clear and logical wayfinding across the school site and between buildings
- Ensure accessibility for all users of the site

4 /

Health and safety

New school development should:

- Locate buildings and design facades that optimise fresh air intake and access to daylight
- Prioritise pedestrians and avoid conflicts between vehicles and people
- Provide covered areas for protection from sun and rain
- Support safe walking and cycling to and from school through connections to local bike and foot paths and the provision of bike parking
- Support passive surveillance, including through the location of toilets and areas for communal use outside of school hours
- Incorporate Crime Prevention Through Environmental Design (CPTED) principles
- Clearly define access arrangements for after school hours
- Establish security requirements early to ensure any required secure lines can be designed and integrated with built form

5 /

Amenity

New school development should:

- Be integrated into, and maximise the use of the natural environment for learning and play
- Ensure access to sunlight, natural ventilation, outlook and visual and acoustic privacy
- Facilitate learning and connection anywhere, anytime, by providing seamless access to technology
- Be age and stage appropriate
- Seek opportunities for buildings and outdoor spaces to be learning tools in themselves
- Provide a diversity of indoor and outdoor spaces to facilitate informal and formal uses
- Design learning spaces to cater for a range of learning styles and group sizes
- Consider providing areas for collaboration, group learning, presentations, specialised focus labs, project space and wet areas, display areas, student breakout, teacher meetings, and reflective / quiet spaces

6 /

Whole of life, flexible and adaptive

New school development should:

- Allow for future adaptation to accommodate demographic changes, new teaching and learning approaches and the integration of new technologies
- Be based on a masterplan of the school site that includes the testing of options for future potential growth
- Take a whole-of-lifecycle approach when considering cost and consider wider public benefits over time.
- Respond to the findings of a site appraisal including (but not limited to) in-ground conditions, contamination, flora and fauna, flooding, drainage and erosion, noise and traffic generation
- Understand the potential impacts of future local projected growth and respond to demand for facilities afterhours
- Ensure school buildings and grounds are designed to be re-silient to change, enabling them to be used for multiple purposes and to evolve over time to meet future requirements

7 /

Aesthetics

New school development should:

- Reflect a commitment to and investment in design excellence
- Create engaging and attractive environments
- Achieve a purposeful composition of materials and elements through rigorous study
- Engage with the pedestrian visually and materially along public street frontages
- Seek opportunities to enhance public facing areas with landscaping and ensure landscape and building design are integrated
- Integrate service elements with the building design
- Balance internal spatial requirements with an external mass and scale that responds to its environment
- Avoid long stretches of security fencing to public facing areas through arrangement of building edges, landscaping, gates and other openings
- Look for opportunities to include public art

St Columbas Primary School,
Sydney Catholic Schools,
Neeson Murcutt Architects.
Image: Brett Broadman.

part three

design process + evaluation

3

The following section outlines key steps and activities that will support the delivery of good design outcomes and provide the means to evaluate quality during and after the design and construction process.

key steps

1. **Community integration** is essential in establishing the design vision and key project criteria including budget and program.
2. Foster agreement from the school and community on the preferred pedagogical approach. Learn from other school models.
3. Prepare a strong **brief** with a clear set of values and design objectives.
4. Set up a procurement process to appoint the best designers, not just the familiar. Look for opportunities for emerging practices that can bring energy and new ideas.
5. Allow time for design, site planning and **masterplanning** in collaboration with the school and community. Clarify staging based on future needs and available budget.
6. Appoint a **Design Champion** and establish a project control group to monitor the project throughout design stages.
7. Engage an expert **Design Review** panel to provide regular review, feedback and guidance to design teams in implementing their school designs.
8. Support an iterative process to better understand opportunities and constraints emerging from the design. Whilst the aspirational brief is fixed for the duration of the project, the functional brief may evolve over the course of design development.
9. Respond to and reflect the diversity of the school community and respond to demographic change.
10. Design to reduce long-term maintenance costs and enironmental impacts.
11. Protect the budget for implementing proposed landscape works and an ongoing maintenance program.
12. Research current and imminent technologies with the school to help determine their ICT requirements. Ensure that development of learning spaces throughout the school will support this.
13. Work with stakeholder groups in the design of interiors and research selection of FF&E to ensure the school's pedagogical vision is enabled.
14. Ensure the design architect is retained until project completion to liaise with builder and ensure construction is in accordance with the approved design.
15. Keep the school community regularly updated with project progress – this can take the form of meet-the-architects evenings, displaying project progress physically within the school or online, including broadcasted time-lapse images of the construction site. Look for opportunities to use the construction as a pedagogical tool.
16. Work with students and staff to develop protocols for using new learning spaces. Include it in a school user manual so current and future school users will understand the intent behind the design of spaces and how to use them.
17. Always complete a **post-occupancy** evaluation and continue to adapt the environment as things change.

Items highlighted in **green** are key activities and are further defined on pages 20-21.

Australia Street Infants School.
Scale Architects.
Image: Brett Boardman.

“ WELL DESIGNED AND MAINTAINED PUBLIC SPACES SHOULD BE AT THE HEART OF ANY COMMUNITY. THEY ARE THE FOUNDATION FOR PUBLIC INTERACTION AND SOCIAL INTEGRATION, AND PROVIDE THE SENSE OF PLACE ESSENTIAL TO ENGENDER CIVIC PRIDE.”

— Lord Richard Rogers, Pritzker Architect

key activities

Community integration

At their best, schools function as the centre of the community and offer the opportunity to share facilities.

Many schools and communities work together to share library and sporting facilities, meeting spaces, performance spaces and to run after-hours adult education or school holiday programs. The co-location of early learning centres and before and after-school programs on school grounds is becoming increasingly common.

Close links between a school and its community can enhance student learning, public safety, health and economic wellbeing.

Schools are one of the few types of public building still being constructed in new communities. They help set the urban structure, create legibility and can provide a landmark in the landscape.

Good urban design integrates a school with its surrounding neighborhood, including through connection to safe access routes to surrounding infrastructure; and by considering the co-location of related uses and activities.

A collaborative brief

A carefully conceived, documented and thoroughly reviewed project brief is the most critical driver leading to high-quality design.

The brief must outline the objectives and needs of the project, setting the design ambitions and the pedagogical approach without prescribing a solution.

Develop the brief collaboratively between the design team, education policy makers, teachers, students and the community so that underlying assumptions throughout the design and development process are challenged.

Schools that are developed in a collaborative partnership create better communities and more engaged students.

Participatory pedagogy

Pedagogy is the art and science of teaching. As with all disciplines approaches vary and are influenced by social and technological change.

Contemporary education is no longer based on the 'chalk and talk' teaching method that the traditional classroom was designed to support.

New approaches to learning benefit from a variety of settings, technology support and opportunities for a range of interaction styles from large groups to personalised learning, and from indoor to outdoor, all of which require appropriately designed physical spaces.

New learning spaces need to be flexible, both pedagogically and physically, to ensure that teachers can refine their approach and include new information and communication technologies as they emerge.

Engage students, educators, and the school community in the discussion of different pedagogical approaches. Remember that innovative approaches are more successful when students, teachers and the school community prepare for them before new buildings and spaces are built.

Procurement

The procurement of a well designed school starts with the appointment of a quality design and project team. The design team includes architects, landscape architects and specialist consultants, such as heritage architects.

Procurement methods have a significant impact on the quality of the final building and its operation. While good design can be achieved with all procurement methods, some make it seriously challenging unless potential threats to design quality are understood and managed.

Over the life of a school, evidence shows that bad design ends up costing money, for example through higher maintenance costs, while good design is cheaper in the longer term and adds real value.

Good design can increase the value for money that school buildings provide across their whole life. Well-designed school buildings are cost-effective and provide a long-term community asset.

Masterplan

Every school project should start with a site-wide masterplan. A masterplan provides a spatial framework for an educational environment fully aligned with the school's values and addresses opportunities and constraints arising from the site. It helps coordinate diverse considerations into a strategic long-term plan for the school's facilities.

A masterplan helps provide for staged delivery that is reliant on future funding, helps integration with community facilities and helps manage potential changes in student numbers over time.

A good masterplan informs the location of buildings, the scale and arrangement of outdoor spaces between buildings and the linkages between them and beyond the school.

As part of the masterplan process, identify and map opportunities in the surrounding neighbourhood including transport services, green spaces, community facilities and local centres.

Work with the local council, Transport and the wider community to identify 'safe routes to school' that encourage walking and cycling.

Design Review

Design Review is a useful tool for part of managing and protecting design quality.

Design Review provides expert feedback on proposals throughout the design process. It involves understanding the design vision for a project and assessing how this vision is implemented 'on the ground'.

The staging, range of participants and scope of a Design Review process may vary from project to project. In general, Design Review can make the most impact at the earliest stages of the design process

- during masterplan options, concept and schematic design
- where the brief is being tested through initial formal responses and the strategic design intent is being established.

Follow up design review in later stages will help ensure design intent is carried through into construction

Design Champion

A design champion is a respected member of the school staff or community. Their role is to advocate for good design and monitor its delivery for decision makers and the design team throughout the project.

The design champion should ideally have a good understanding of educational and architectural quality, and have the authority to influence decision makers if project priorities are moving away from quality and focusing exclusively on program and budget.

Post-occupancy evaluation

A post-occupancy evaluation is critical to encouraging good educational outcomes. It can identify successes and weaknesses as well as provide benchmarks to inform future projects.

A post-occupancy evaluation is a formal evaluation process where information is accurately recorded to produce an objective impression of the project and its design outcomes.

The evaluation should have a clear and specific goal. This may include delivery outcomes, safety and comfort, operational performance data, user experience in relation to learning and teaching, as well as informing future procurement methods for project delivery and their impact on design outcomes.

appendix

bibliography

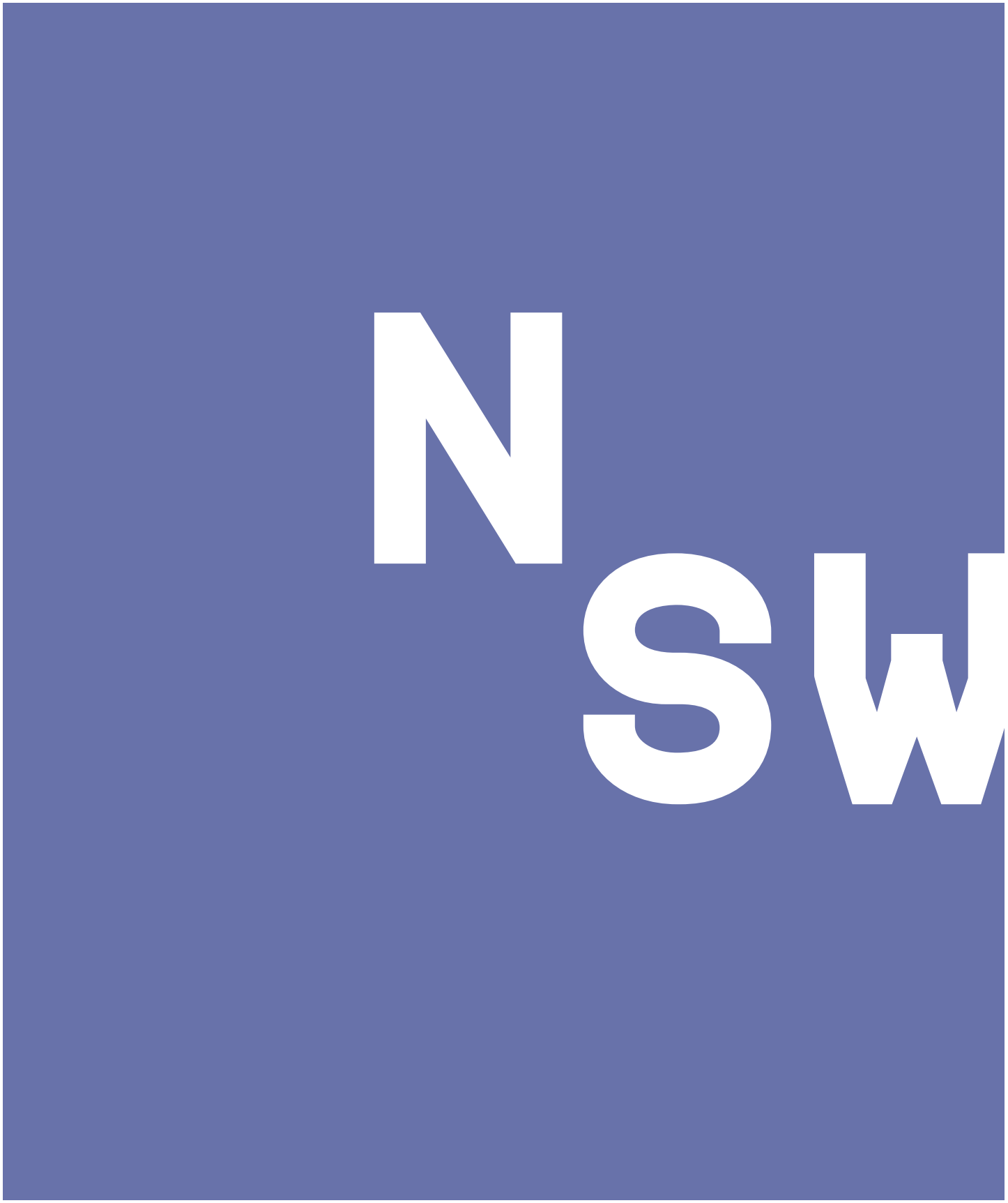
- Government Architect NSW
  Better Placed
- Office of Victorian Government
  Good Design + Education
- Western Australian Office of the Government Architect
  Design Standard for Secondary Schools
- Better spaces for learning: RIBA.
  https://www.architecture.com/RIBA/Campaigns%20and%20issues/Assets/Files/TopMarkSchoolsReportv816.05.16.pdf
- Barrett, P., Zhang, D. Y., Davies, D. F., & Barrett, D. L. (2015). Clever Classrooms: Summary Report of the HEAD Project.
  https://www.salford.ac.uk/cleverclassrooms/1503-Salford-Uni-Report-DIGITAL.pdf
- The Association for Learning Environments
  http://a4le.org.au/
- Learning Environments Applied Research Network (LEaRN) at the University of Melbourne
  https://msd.unimelb.edu.au/learning-environments-applied-research-network-learn
- Innovative Learning Environments and Teacher Change Project, University of Melbourne
  http://www.iletc.com.au/
- Managing the Brief for Better Design (2nd Edition) (2010), Alastair Blyth and John Worthington
  https://www.routledge.com/Managing-the-Brief-for-Better-Design-2nd-Edition/Blyth-Worthington/p/book/9780415460316
- Commission for Architecture and the Built Environment (CABE) UK
  Schools design quality program
  Being involved in school design
  Building schools for the future
  Schools design proces
  Schools design panel: assessment report

BACK COVER IMAGE
Australia Street Infants School.
Scale Architects.
Image: Brett Boardman.

"PERHAPS THE MOST INFLUENTIAL SETTINGS IN A CHILD'S DEVELOPMENT ARE THE PLACES_ WHERE THEY LEARN. CREATING HEALTHY AND VIBRANT LEARNING ENVIRONMENTS CAN HAVE BOTH PHYSICAL AND PSYCHOLOGICAL BENEFITS AND CAN FUNCTION AS SOURCES OF LEARNING THEMSELVES."

— Professor Laura Lee
Professor of Architecture
Carnegie Mellon University


G
A


N
Sw

GOVERNMENT
ARCHITECT
NEW SOUTH WALES