THE SCHOOLYARD

Greenprint DRAFT

Summary of Emerging Findings

CO-DESIGN WORKSHOPS FEBRUARY 2025

CONTENTS

Project team

Dr Gweneth Leigh, Hannah Richardson and Dr Claire Manning

We want to hear from you, contact us at: schoolyardgreenprint@canberra.edu.au

Follow our emerging findings at: www.canberra.edu.au/research/centres/hri/research-projects/the-schoolyard-greenprint Or search "schoolyard greenprint".

About our project

How can schoolyards be designed to improve adolescent wellbeing?
What evidence and guidance do designers and school leaders need to improve schoolyard design in Australia?

These are some of the questions the University of Canberra is addressing through the Schoolyard Greenprint project.

Why is this important?

Time outside helps students by encouraging exercise and risk-taking and improving social skills and creativity. Yet, little is known about the effect of schoolyard design in shaping student behaviour and wellbeing.

Adolescents have very specific physical, social and psychological needs, yet there is currently no national guide articulating how to design schoolyards to meet these needs.

The Schoolyard Greenprint project aims to fill this gap through:

- A body of evidence on the impact of schoolyard design on student wellbeing and outcomes;

- A guide for design professionals articulating how to design outdoor school spaces that foster student wellbeing.

How we are running our project

We are taking a co-design approach. This includes youth co-researchers in our team and collaborating with students, school leaders and designers.

Contribute your insights

We want your ideas on how to improve schoolyard design.

Tell us how to improve schoolyards by filing in our survey **using the QR code below.**

Be a citizen scientist and collect data on your school

Nominate an excellent schoolyard design at:
www.canberra.edu.au/research/centres/hri/research-projects/the-schoolyard-greenprint
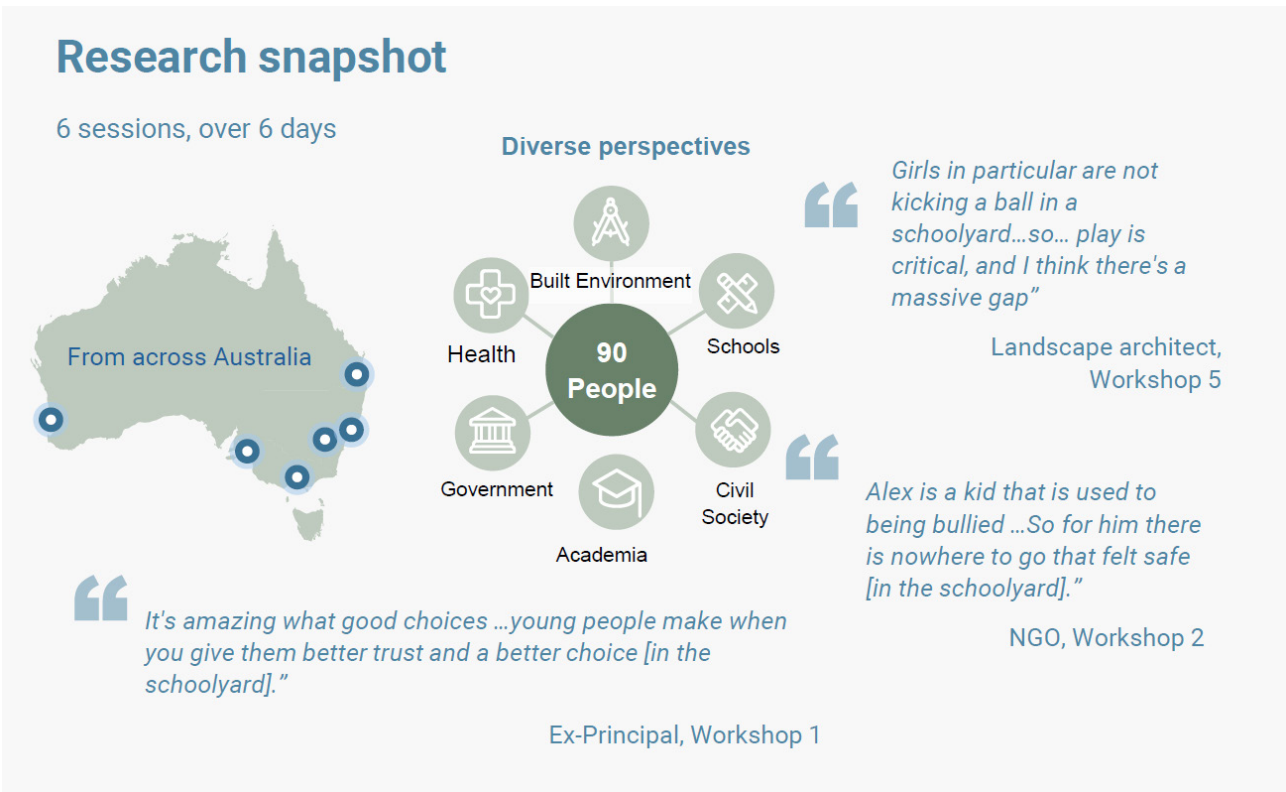
About the first phase of research

In February 2025 the Greenprint team held virtual workshops with a broad range of people who influence schoolyard design or work in schools. The purpose was to discover the challenges and successes in designing effective schoolyards This group was chosen in preparation for conducting further research with young people, teachers and principals including site visits throughout 2025.

This Summary of Emerging Findings presents insights from these workshops. We will continue to build on these insights in the months ahead.

A draft of this document was presented to the Greenprint Working Group, Reference Group and Youth Voices representatives in March 2025 and revised in response to feedback.

Research snapshot

6 sessions, over 6 days

From across Australia

Diverse perspectives

Built Environment

Health

Schools

90 People

Government

Civil Society

Academia

Girls in particular are not kicking a ball in a schoolyard…so… play is critical, and I think there's a massive gap"

Landscape architect, Workshop 5

Alex is a kid that is used to being bullied …So for him there is nowhere to go that felt safe [in the schoolyard]."

NGO, Workshop 2

It's amazing what good choices …young people make when you give them better trust and a better choice [in the schoolyard]."

Ex-Principal, Workshop 1

"Guidance [would be helpful] on what is needed from the landscape to support kids today. The world is different from when we were all kids, and adult designers may not respond to current needs"
(Workshop 3)

Workshop topics

1 Health & wellbeing Monday 3 February	What is wellbeing in the schoolyard? What developmental milestones need to be catered for?
2 Needs & strengths Tuesday 4 February	What are the challenges for wellbeing in the schoolyard? What might a strengths-based approach look like?
3 Gender & inclusivity Wednesday 5 February	What does psychological safety and belonging look like for specific cohorts?
4 Government process & standards Thursday 6 February	What are the constraints and minimum standards for delivering schoolyards?
5 Excellence Friday 7 February	What are the challenges and constraints in designing schoolyards? What does best practice look like?
6 Western Australia perspectives Monday 17 Feb	What can we learn from WA? What are relevant precedent case studies?

Other research activities

Our research includes the following activities:

Co-design: A series of workshops with young people, professionals and school staff throughout Australia throughout 2025-26.

Site visits: In depth engagement with school communities in up to six schools around Australia throughout 2025.

Aerial infrastructure inventory: using geospatial data to measure and benchmark the amount and type of outdoor spaces in Australian schools today.

Literature review: analysing current policy guidance in Australia and internationally on how schoolyards should be designed.

Audit tool: collecting data on schoolyard spaces.

Survey: A survey on how to improve schoolyard design.

1. Evidence and metrics

There is currently a lack of evidence linking schoolyards to student wellbeing. Built environment and government professionals are seeking excellence based outcomes and metrics to inform key decisions in schoolyard design. Evidence articulating the benefits of vegetation is needed to balance costs.

Further detail

While design standards exist, they tend to be minimum standards or they provide general design advice, based on urban design principles.

Practitioners need outcomes and metrics or targets articulated for key design decisions such as the type and diversity of programming on offer; amount of open space per student; amount of shade or canopy cover per square metre; number of seats per student.

Budgets are constrained and landscape architecture often happens at the end of school design processes. Many people including school leaders and communities are not sure of the value of the outdoor spaces for learning or student wellbeing.

Government and professionals are seeking evidence on the benefits of vegetation to balance against the costs. Clearly there are costs in terms of maintenance and sometimes irrigation and replanting over time. Similarly, there are risks with some tree species dropping limbs or contributing to fire hazards. However, there is not currently sufficient data on the benefits that might outweigh these risks or strategies to manage these risks positively.

A pattern book articulating design options would be beneficial.

Workshop quotes

"[what's needed is] % or ratio of internal built space to external environments that need to be delivered or upgraded." (Workshop 4)

"[what's needed is] Relative risk - learning outcomes and wellbeing of students (Over life stage or lifetime) weighted against risk of tree limb fall, maintenance etc This could be used for budget allocation and ring-fencing." (Workshop 4)

"[I'd like] A document outcome that can directly inform policy and that provides a reference for practitioners in advocating for high performance landscapes within education."(Workshop 5)

2. Adolescent development needs

Adolescents undergo significant change through high school and have very particular developmental needs. Design guidance needs to articulate how to design spaces to meet these needs.

2.1 Physical needs

Adolescents bodies change rapidly in size, and many have physical needs to exercise, exert energy and "blow off steam".

Not all of these needs are served through formal sports, which is the focus of many outdoor exercise options in schools.

Circulation loops provide opportunities, particularly for girls to exercise. This can also be beneficial for some students who experience sensory overload.

At the same time, adolescents need spaces for rest, in particular lounging.

The way adolescents sit in spaces is not always served by current approaches to seating, which tends to favour formal benches and seats.

Workshop quotes

"When pent up energy can't be spent productively then kids act out." (Workshop 2)

"[adolescents are] growing so quickly and the knowledge of … the extent of their own body in space is kind of it's changing … the way our bodies adapt to that is through proprioceptive movement in space …whether they're being held in a hammock or a cocoon, or whether they're rolling down a hill. Or even just running into their friends and colliding, or .. swinging feeling, momentum. All of those things actually then remap the brain to understand the where the extents of the body is and that reduces clumsiness, promotes coordination." (Workshop 6)

"loops or circuits that you can take …create opportunity for interaction or just passing by and … guides so much that happens in the dynamics between different people." (Workshop 5)

"Often we've worked with specialist schools, there's a need for a loop that can be walked over and over." (Workshop 5)

"… teenagers seem to view sitting on something as a physical & functional challenge - stuff like this that provides varied ways of sitting, lounging or fooling around and offer a unique approach to familiar functions I would argue are a solid way of passively engaging kids in both physical and cognitive activities."
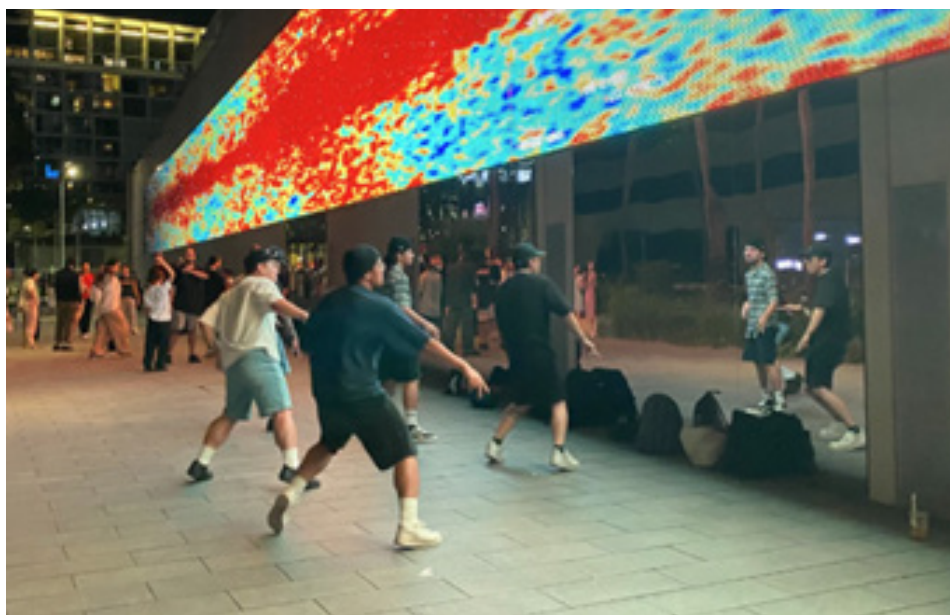
(Workshop 1)

Photo W14E

2.2 Cognitive needs

Adolescents need increasingly complex and varied environments. Yet, programming in schools lacks variety with the dominance of formal sports.

Examples of diverse programming includes:

•   creative craft and art spaces; dance and performance spaces;

•   outdoor homework spaces;

•   diverse physical activities ie climbing, swings and hammocks;

•   nature play;

•   outdoor learning environments such as permaculture.

Left: Dancers Alley, Darling Harbour, image provided by workshop participant

2.3 Psychological and behavioural needs

2.3.1 Agency

Students' days can be highly structured. The perception of being controlled can impact students' mental wellbeing at a stage of life when anxiety, depression and other mental health challenges rise.

At the same time, adolescents have a developmental need to exert agency and schoolyards could provide opportunities for more safe risk taking. Yet, outdoor spaces in schools are often designed with risk aversion in mind.

Examples of risk prevention design include:

•   immovable furniture;

•   avoidance of trees that drop limbs;

•   the use of long sight lines for supervision; and

•   large open spaces.

There are a range of ways to create opportunities for agency, including:

•   Ambiguity: affordances / spaces that don't have a clear 'way' to interact with. They are less defined and more curious;

•   Mobile furniture that can be adapted, moved, changed;

•   Fixed furniture that moves such as pivoting or swivelling;

•   Items that have multiple functions, for example they could be a step, lounge, a seat;

•   Interactive art ie chalk boards and opportunities for students to partake in approved forms of graffiti or tagging;

•   Discovery: offering spaces to explore. This could look like screening or vegetation creating spaces of smaller scale, or spaces that are semi-hidden;

•   Risky play and maker spaces;

•   Involving students in the design process.

Workshop quotes

"Due to their developing brain, adolescents may engage in risk, testing out the limits of their developing independence." (Workshop 1)

"Requirements for safety [are] dominating any discussion and [it's frustrating] having nice elements designed out due to being considered unsafe." (Workshop 4)

"Just a small observation, notice the number of formal benches and the amount that are not being used." (Workshop 1)

Photo W14E

"YES - agency for students to manipulate and create their own learning environments!" (Workshop 1)

Photo W13G

Above: Workshop responses to sample images posted during workshop exercises

2.3.2 Social needs

Adolescents have a strong need to socialise, in particular in smaller groups. This is particularly the case for girls who want to chat with friends, and neurodiverse students who have strong bonds with smaller groups who share the similar passions. It can also be beneficial for students with mental health needs to calm them.

There are a number of ways to create social spaces:

- Offering a range of smaller spaces, so that different cohorts can each gather;
- Providing seating in a circular arrangement that fosters conversation.

There is a tension between students' desire for smaller spaces and teachers' need to supervise. Smaller spaces need permeable screening or other passive surveillance solutions to ensure they are not sites for bullying. It's important that a particular space is not seen as 'special' as access to it may create issues of territoriality by different groups.

While students need social interaction, schoolyards can make students feel very socially exposed. They are often designed with lots of wide-open space and clear sight lines. Seats can be exposed, with foot traffic behind them. This can be daunting for girls, LGBTQIA+ and neurodiverse students.

Stories

During the workshops, participants developed stories to illustrate student experiences.

Alex*, a student who has been bullied.

* Not his real name

"Alex was used to being the target. Every day, from the moment he walked into the classroom, the whispers started. Some kids snickered behind their hands; others threw out comments just loud enough to sting but not get caught. At recess, it was worse. A shove in the hallway, an "accidental" trip in the yard, lunch knocked to the ground. It wasn't just the physical taunts - it was the feeling of being watched, waiting for the next jab, the next moment of humiliation.

At lunchtime, Alex always found himself wandering the schoolyard, heart pounding, trying to look busy while avoiding the usual spots where the bullies lurked. There was nowhere to go that felt safe. Sitting alone at a bench only made him more of a target. Hiding in the bathroom felt suffocating. Alex needed somewhere to just be.

Alex needs a quiet, supervised space in the schoolyard where students who needed a break from the chaos could go. The area needs a teacher always on duty. It's not just a place to sit; it's a space where kids like Alex could breathe, collect their thoughts, and feel safe without fear of being singled out or followed.

Alex has mentioned the idea of something called The Haven – a place of refuge. The Haven isn't about hiding—it is about having a choice. For Alex, it means he could chat with a teacher, who could offer small bits of encouragement. Other days, he could just sit, listen to the sounds of the schoolyard from a distance, and feel human again.

Having a safe, supervised space in the schoolyard isn't a luxury; it's a necessity. For kids like Alex, it means having somewhere to go instead of nowhere. It means being able to reset instead of breaking down. It means having an adult nearby who notices, who cares, who sees him. A place where he could go when he feels overwhelmed.

Every school needs a space like this. Not just a place to escape bullying, but a place to feel safe enough to exist. Because no child should spend their school days looking for somewhere to disappear. They should have somewhere to belong, and most importantly feel safe."

(Workshop 2)

2.3.3 Belonging

Adolescents have a strong developmental need to belong to a group or community.

While some students feel they belong in school environments, this does not apply to everyone. Girls, the LGBTQIA+ community, neurodiverse, First Nations, kids with disabilities can feel they don't belong in school outdoor spaces.

Photo W32E

These benches feel isolating. There is no way to sit with more than one friend. They are exposed and unprotected. Am I a loner if I sit here?" (Workshop 3)

Workshop quotes

"One of the core ideas in the Australian Curriculum is visibility - as in being able to see yourself reflected in education (learning resources, teachers, materials and spaces).

This is also evident in Indigenist Standpoint which prioritises Indigenous perspectives and experiences with education. The opportunity for design is [to] be part of this reauthorising of Indigenous identity, perspective, experience." (Workshop 2)

Stories

Archie,*
First Nations
student

*Not his real name

"When a First Nation student is identified with high truancy because he feels alienated by the curriculum and the system, he needs an outdoor space in school that provides him with a sense of belonging to his ancestor so that he feels a sense of belonging, pride, and encouragement to come the school.

[this could be] productive gardens where he owns a plot to plant native trees that belongs to his paternal/maternal lineage as part of school,

or a space in school where he is celebrated culturally and able to lead some conversation of his connection [to] Country, it can be a cultural dance, a mural painting etc." (Workshop 2)

2.4 Play

Schoolyards in high schools often lack appropriate play affordances. Teenagers, however, benefit from play, which provides physical activity, cognitive stimulation, emotional down regulation and other benefits. Students who don't feel confident to engage in sport particularly benefit from play including girls and neurodiverse students.

Highly valued play affordances include:

- Swings designed for larger bodies / multiple people, which provide vestibular regulation particularly for neurodiverse students. It's important these are fitted with appropriate safety features.
- Bike tracks
- Ninja play, risky play, nature play

Preventing territoriality around valued play opportunities is important. This can be achieved through offering multiple play options, multi-function spaces and ensuring sufficient space / affordances per child.

Opportunities for play in high school, however, need to look different to those in primary school. As students become more aware of others' opinions and their desire to be grown up, they need social licence to play. Affordances that appear childish or overly programmed may not be used by students.

Photo W13C

"[it's good to see] alternatives to stairs & ramps - kids are going to run up and down the slope anyway, installations that weave play elements or physical challenges into the landscape transition, even just stacked rock retaining, would encourage and provide a license to engage in informal movement."

There are a number of ways to create 'playful spaces' without being childish.

- Ambiguity in use or function that encourages students to engage or test something out. For example, a ledge that is also a seat that is also a sculpture;
- Interactive elements: such as seats that pivot or mobile furniture;

- New ways to perform old functions such as a rope to go up a slope or a slide to go down stairs;
- Subtly adding play throughout the landscape rather than having a designated play space.

Workshop quotes

"Designing for play beyond organised sports is not catered for with regard to adolescents." (Workshop 4)

"I attended a workshop THIS WEEK with year 4/5 students about what they wanted to see at a new high school and the number 1 request was a ninja warrior playground" (Workshop 4)

"Affordances like swings can be exclusive/co-opted by groups with power and influence who don't want to share, can be sidestepped by having teachers nearby or lots of swings in a row." (Workshop 2)

"Nice vestibular movement, but doesn't feel like a nice place to hang out (looks hot, and quite exposed both environmentally, but also socially)"

(Workshop 1)

Photo W32E

Photo W32E

"First thing I note here is the formal divide - this space/ that space, which I don't think helps…were parts of these weaved into the larger fabric of the open space, they could encourage informal engagement with playful elements without the formal declaration of "play"

(Workshop 1)

3.Green spaces in schools

Many schools are dominated by hardscape and do not provide sufficient green and natural spaces with canopy, vegetation, gardens and grass. This reduces the restorative effect of outdoor time for students.

Reliance on hardscaping leads to hot, unshaded environments that hinder students' ability to exercise and relax, and increases the risk of injury during wet periods.

Risks associated with eucalyptuses dropping limbs and fire hazards result in a tendency to employ shade structures instead of trees.

Natural landscapes assist students to down-regulate and relax while natural grass results in fewer injuries than synthetic turf.

Gardens can be incorporated into outdoor curriculum activities, assist students connect to Country and provide diverse spaces at a time of life when students often congregate in small cohorts.

Landscaping provides variety in students' visual experience, as natural spaces are more visually complex than buildings. This can be achieved through organic forms and a variety of scales.

Workshop quotes

"Lack of shade [is an issue], you know, rarely is there enough shade and you know what they do? They put up hard, hard shelter rather than vegetation…" (Ex Principal, Workshop 5)

"hostile, very hardscape, shady but who would congregate here? Difficult to navigate. A wasted opportunity."

(Workshop 3)

Photo W32A

4. Girls & Gender diverse students

Girls and gender diverse students can experience spatial inequity in the schoolyard

Formal sports areas take up a significant proportion of the space and investment of budget in schoolyards. Yet, these spaces may be used by a minority of the students.

Many girls and others may not feel they belong in organised sports becuase boys socially dominate these spaces due to their larger size, the social expectation that they participate in formal sports and their greater skill levels.

Multifunction spaces provide an opportunity to cater to girls' sporting needs.

Surface materials combine with uniform design to make many outdoor spaces and affordances physically and socially uncomfortable for girls. In particular hot surfaces or play options that include climbing, kicking etc combined with uniforms that are skirts or dresses.

LGBTQIA+ students often feel unsafe in the schoolyard and value outdoor spaces where they can experience nature without worrying that they might be the focus of social stigma. Indoor spaces such as libraries often feel more safe than schoolyards.

Stories

"When an active group of young women want to set up a temporary game of badminton, they need an open flexible area that isn't the only one that is already in use by the same group of people each day, so that they can practice their sport interest that isn't the generic sport choice and develop their skills and have fun to play freely.

(Workshop 3)

Imogen & Matilda*

Workshop quotes

"you have courts taking up maybe…75% of the space but only being used by …maybe 10% of the people." (Workshop 3)

"Uniform design: Is limiting to where they [girls] feel comfortable to sit and what activities they do (Workshop 3)

"[an LGBTQIA+ boy] needs a non-gendered space to spend time with his friendship group so that he doesn't feel at risk of being judged or perceived as gay for not wanting to play typical masculine sports by the rest of his year group. (Workshop 3)

Neurodiverse students

Neurodiverse students particularly benefit from well designed landscapes in schools.

Green spaces designed to be quiet and small provide sensory down regulation for neuro-diverse students. Similarly, some students need the type stimulation that natural spaces provide. Yet often spaces for neurodiverse students are offered indoors not outdoors.

Neurodiverse students often have strong bonds with a small group of like minded stu-dents and value smaller spaces to connect with those friends.

At the same time tensions can arise when the school community believes that some stu-dent groups receive special spaces. Similarly, neurodiverse students can feel isolated to particular spaces or those very spaces aimed at assisting those students become sites of bullying or stigma.

It's important that any spaces designed for neurodiverse students include multiple exits, have some visual permeability and include crime prevention through environmental features. Neurodiverse students value easy access indoors for medication and at times circulation routes through schools for exer-cise.

Stories

"When teenage neurodivergent students (autism, ADHD) are sitting together during break times, they need a space that is both separate from busy walkways and traffic zones, but also in reach of other social groups for the sort of cross-pollination that occurs and can be fostered there.

They need this space, with its shade, its infusion of nature, its ta-bles and opportunities to share books and games and drawings, so that they can socialise and relax in peace, as a necessary period of self-regulation after the busy overwhelm of the classroom or related school experiences.

This shouldn't be an isolated space, on the outskirts of the school, but strategically designed to be both quiet and also in reach of school resources, such as libraries, bathrooms, office etc. If these neurodi-vergent students require access to the office for medication, etc, they shouldn't have to cross five hundred metres of pavement to get there and back, and often this cohort do require access measures like this."

(Workshop 2)

Felix & Priya*

*Not their real names

The design process

Engaging with students, parents, community and local government throughout the design process results in better quality designs. However, barriers exist.

Many design professionals want to engage with students, staff and the community and are looking for guidance on how best to engage with students.

At times, that engagement is limited to engagement with staff or student leaders rather than the full breadth of student perspectives.

Engaging with students can be challenging, including power dynamics and challenges in communicating technical drawings.

Students are not always available for consultation on greenfield developments.

Parents are important to engage with, particularly for students with disabilities.

Engagement with local Indigenous community is important for any connecting to country approaches.

"Speaking with the students [is] the single most critical part of our design process. …

[We] ensure the questions we ask are also qualitative. Not about what you want to see in a space or what facilities or amenity you want.

Rather, what do you enjoy doing at recess? How can this be improved? What is fun and enjoyable to you? Can that be accommodated in the space?"

(Workshop 5)

Acknowledgements

This document is the first in a series of summaries of emerging findings, each of which will address separate themes.

Throughout 2025 and into 2026 the Greenprint team will be engaging with stakeholders and collecting data. We will revise our findings throughout this process.

The Greenprint Guide will be launched in late 2026 at the Greening the Schoolyard Summit.

Stakeholder input

There are three stakeholder forums that contribute to our research.

The Working Group is co-designing with us how to conduct our research, it meets monthly and includes:

- The Australian Youth Affairs Coalition
- Headspace
- Hort Innovation
- Learning Environments Australasia
- Landscape Foundation of Australia
- A school principal
- The University of Melbourne

The Reference Group provides feedback on emerging findings, it meets quarterly and includes:

- Access Consultants Association Australia
- Australian Primary Health Care Nurses Association
- Australian Association for Adolescent Health
- Australian Institute of Landscape Architects
- Australian Parents Council
- Australian Secondary Principals Association
- Bully Zero
- Cancer Council NSW
- Cancer Institute NSW
- Independent Schools Australia
- Montessori Australia
- Multicultural Youth Advocacy Network
- New Learning Environments
- The NSW Government
- Occupational Therapy Australia
- Place Lab
- Positive Partnerships
- Purely Access
- QUT - School of Psychology & Counselling
- SA Rainbow Advocacy Alliance
- The South Australian Government
- Steiner Education Australia
- The Global Recess Alliance
- Touched by Olivia Foundation
- Women Sport Australia Inc

The Youth Voices is a group of diverse young people from across Australia who act as co-researchers in our research and include:

- Finlay Robinson, ACT, youth coordinator, Independent school
- Chloe Richards, NSW, A Gamilaroi woman who grew up and lives on Wiradjuri Country Public school
- Hunter Jackson, Albury NSW, Public school
- Emily Garrett, Logan City QLD Independent school
- Nikoletta Apostolidis, Melbourne, VIC, Independent school
- Rhy Baumann, Adelaide SA, Public school

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