



Future Proofing Schools

A Design Ideas Competition

Sponsored by

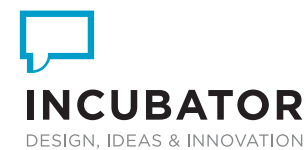


msd

Melbourne
School of Design



Organisers



An Ideas Competition

We invite you to propose design ideas for next generation relocatable classrooms.



This is an ideas competition. It seeks to elicit innovation, creativity and blue-sky thinking; to encourage entrants to consider how things can be “otherwise”.

Your ideas could potentially:

- > transform school communities
- > influence government policy on the design and delivery of future relocatable infrastructure
- > be developed as a prototype

An Invitation>

For Design Ideas

The total prize pool is AUD\$60,000.

This Ideas Competition has at its heart the design and production of effective learning spaces for all school students.

The Competition

The University of Melbourne’s Future Proofing Schools research project, together with its Industry Partners, invites you to propose design ideas for the next generation relocatable classroom.

Learn from our multi-disciplinary research, and use this as a springboard for your ideas.

The Competition Closes on 31 October 2011.

Future Proofing Schools

The research project is led by experts in architecture, education, sustainability, landscape architecture and parametric modelling, working with six education departments and Industry Partners across Australia.

It seeks to revolutionise the design and manufacture of current relocatable classrooms to provide effective, designed, delightful learning spaces.

Who can enter?

This single stage Design Ideas Competition is open to **professionals*** and **tertiary students** including – but not limited to – Architects, Landscape Architects, Urban Designers, Planners, Industrial Designers and those passionate about the built environment.

Entrants are welcome to work individually or in multidisciplinary teams.



Contents

Competition Context

An Invitation	2
Contents	3
Relocatables Today	4
A Diverse Continent	5
Tipping Points	6

The Brief

An Overview	7
The Challenge	8
Step 1	9
Steps 2 and 3	10
Sample Scenarios - Urban	11
Sample Scenarios - Suburban	12
Sample Scenarios - Remote	13

The Fine Print

The Fine Print - Index	14
Competition Guide - Overview	15
Competition Guide - Judging Criteria	16
Competition Guide - The Jury	17
Competition Guide - Rules	18
Competition Guide - How to Enter	19

Competition Context > Relocatables Today



“There’d be no school here at all if it wasn’t for these relocatables...”

[Remote Community School], Northern Territory]

“We’ve worked really hard to improve their comfort but yes, they do still look quite agricultural...”

[Department of Education]

“Teachers and students are getting used to the innovative spaces of our new permanent buildings. It’s really hard to then work in a relocatable...”

[A teacher, anonymous research interview November 2010]

An Overview

Relocatable classrooms have been used for decades within the Australian Government school system – and internationally – to respond rapidly and economically to changing school enrolment levels, to deal with remote community needs, and to cope with disasters such as our recent fires, floods and cyclones. They are an agile and sustainable solution as buildings can be moved and follow demands.

Yet these classrooms have been typified by their utilitarian appearance, poor connection to outdoor spaces, and less than ideal indoor quality – for example problems with glare, acoustics, temperature, or carbon dioxide levels.

While Australia has gained international recognition for the quality of its permanent educational buildings funded through the recent Federal Government’s **Building the Education Revolution** [BER], the same attention to design thinking has not yet been applied to relocatable classrooms.

Students spend up to 15,000 hours at school, and relocatable classrooms currently accommodate up to 30% of Australian students in some states.

Why relocatables?

Relocatable classrooms are an important, **planned response** to a number of scenarios:

Disaster response

Relocatable classrooms provide a rapid response to infrastructure provision in the aftermath of events such as fires, floods and cyclones.

Remote communities

Relocatable classrooms create part or entire schools in remote areas where there is a shortage of skilled trade labour. They play an important role in providing education to remote and indigenous communities.

Mining communities

Mining communities swell and contract in response to resource booms, and relocatables allow communities and schools to respond swiftly to these fluctuations.

Changing Demographics

Relocatable classrooms allow for an agile, sustainable and economical response to Australia’s rapid population growth and shifting demographics. Buildings can be moved and follow changing demands.

The problem?

Many of the issues with today’s relocatables stem from the challenges faced by a generic, mass produced product that is required to perform in a wide variety of contexts.

Yet they are not specifically customised for any of these contexts, and are generally a ‘one size fits all’ response.

How can we better deal with local contexts and transferability?

Some of the most common problems relate to:

- Environmental performance
- Indoor air quality
- Lightweight building envelope
- Floor level disconnect from outside
- Placement on school site
- Window size and positioning
- Utilitarian appearance
- Finite space
- Adaptability

How might we address these problems by future proofing through design?



Relocatable classrooms require a high degree of transferability:

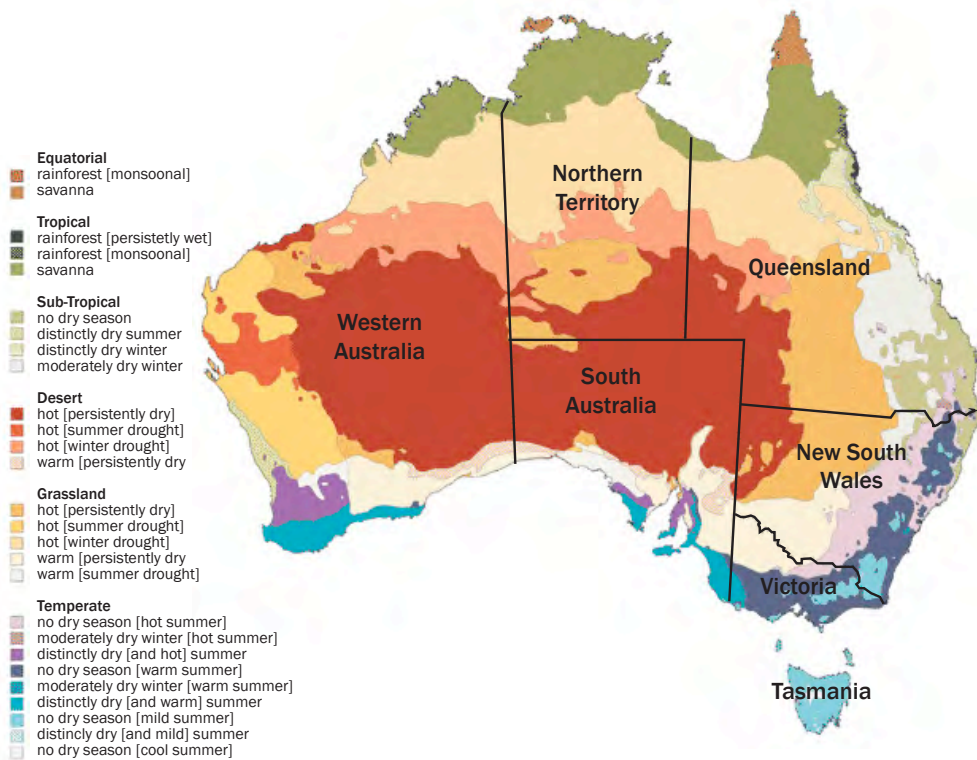
- >from one climate zone to another;
- >to a wide variety of physical and cultural contexts; and
- >to support a wide range of teaching and learning styles.

Competition Context>

A Diverse Continent

Climate Zones

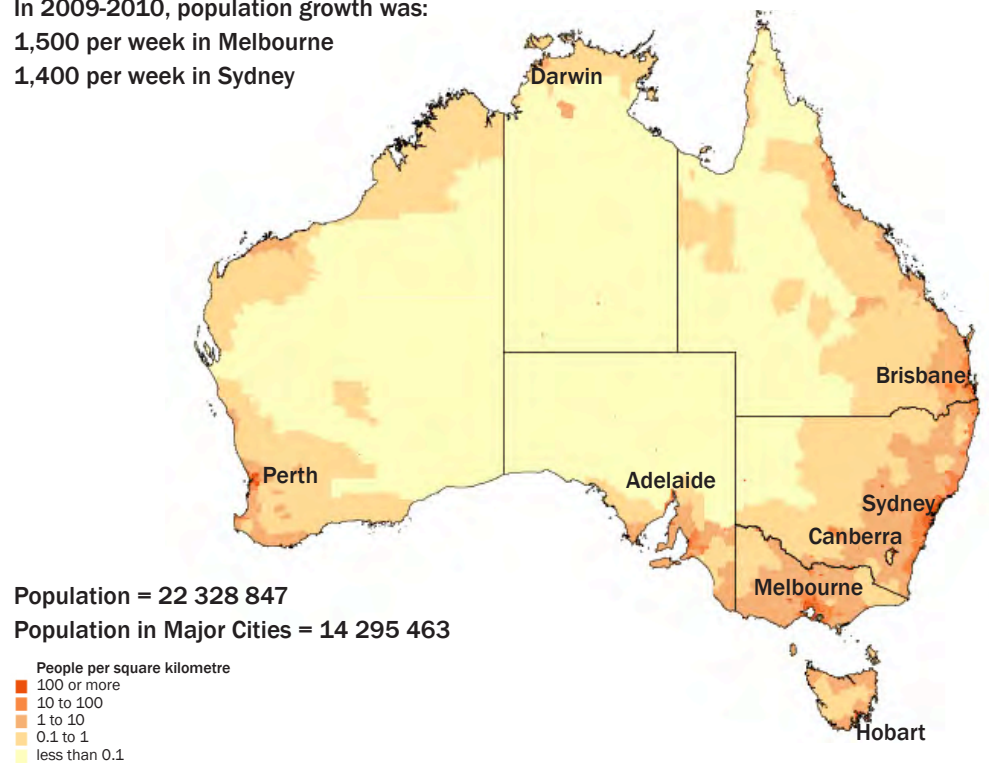
Map adapted from the Australian Bureau of Meteorology
Koppen Climate Classification System



Population Density + Major cities

Map and figures from the Australian Bureau of Statistics
Figures from June 2010

In 2009-2010, population growth was:
1,500 per week in Melbourne
1,400 per week in Sydney



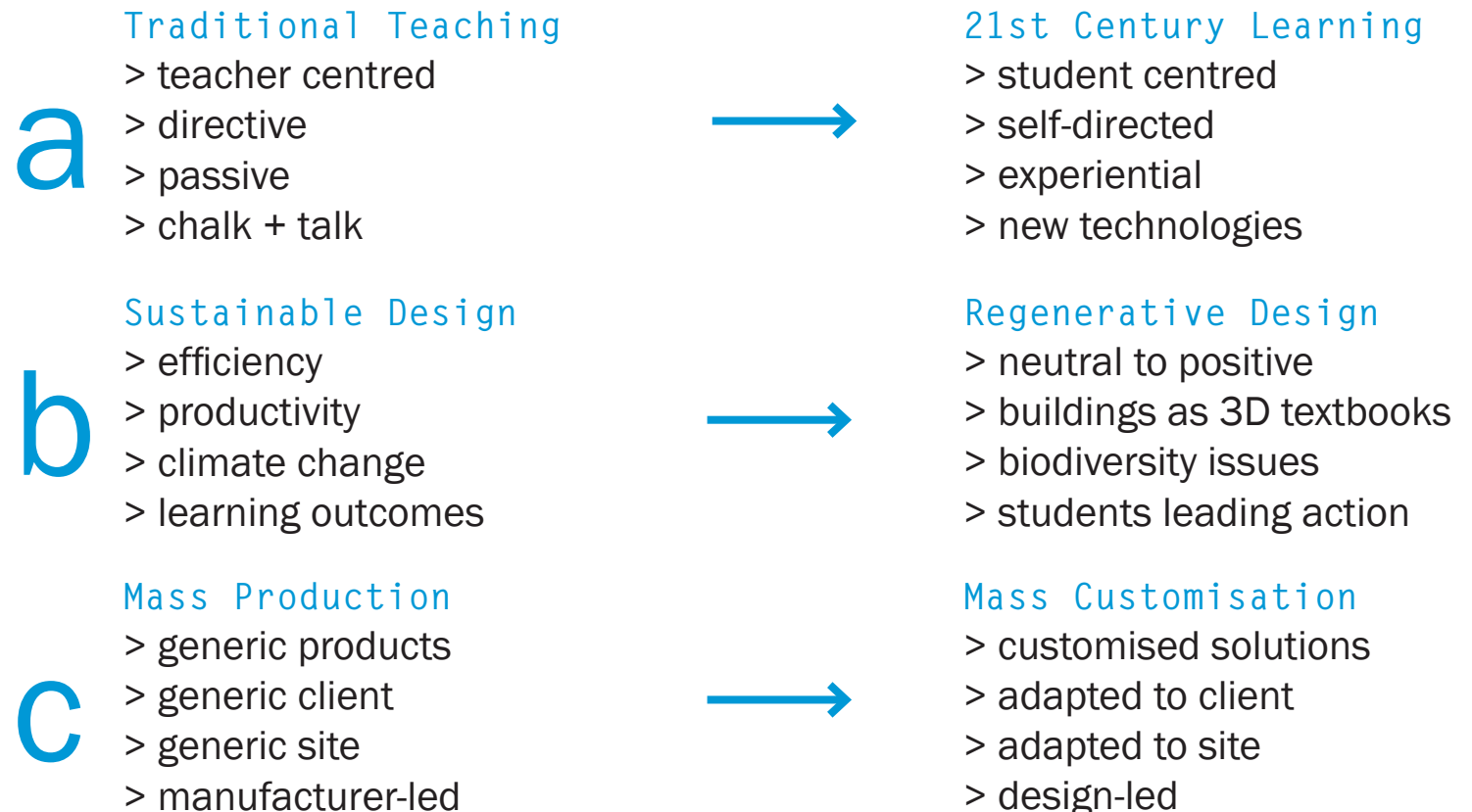


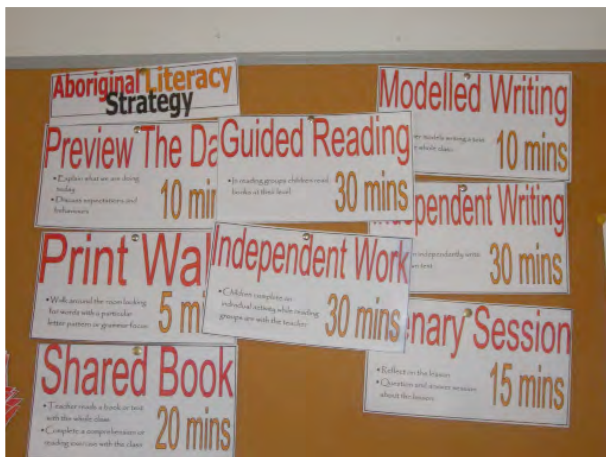
We have an unprecedented opportunity to benefit from ‘tipping points’ that are set to revolutionise the design and manufacture of relocatable classrooms:

Competition Context> Tipping Points

“Relocatables... at their best they can be described as cheap and cheerful - but they aren’t always cheap and often aren’t too cheerful. It’s time to get some proper design thought applied to the problem...”

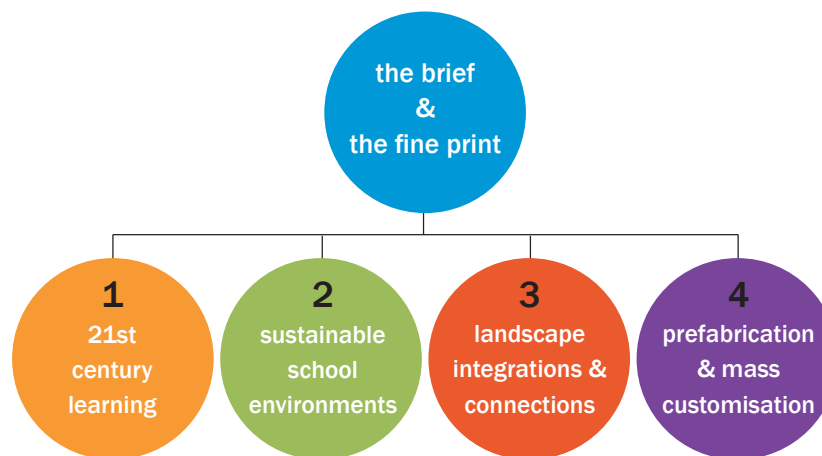
[A British prefabrication expert, research interview November 2010]





In addition to The Brief, we provide 4 brochures on our research strands to prompt your design ideas.

The Brief > An Overview



1 21st Century Learning
Many countries, including Australia, are exploring new notions of 'the classroom' in order to respond to changes in learning approaches, new technologies and learning modalities. Spaces that suit multiple learning styles are required to engage reluctant learners and increase student retention rates.
Entrants need to consider the impact of 21st century learning on the design of future relocatable classrooms.

2 Sustainable School Environments
Creating spaces that offer appropriate light levels, comfortable temperatures, excellent acoustics and good air quality is critical to school design. School buildings also present a wonderful opportunity to act as '3D textbooks' for students and the wider community.
Entrants need to consider the vital role of sustainable design in creating quality, high performance learning environments.

3 Landscape: Integrations & Connections
Relocatable classrooms are typically challenged in their indoor to outdoor connection, are often sited in remote parts of the school leading to disconnect from common facilities, and can also erode precious playground space.
Entrants need to consider the integration of relocatable classrooms with the school site and the role of outdoor spaces for learning and unstructured play.

4 Prefabrication & Mass Customisation
Emerging design technologies and their potential interface with manufacturing present exciting opportunities in terms of 'mass customisation' and 'site specific' responses of prefabricated buildings.
Entrants need to consider prefabrication systems and strategies that respond to the need for transferability of the relocatable classroom, while also creating delightful settings for learning.



This is a three-step challenge:

step

1

Propose a design idea for a relocatable classroom

step

2

Show how your design idea can be tailored to different physical contexts

step

3

Show how your tailored design idea can then be *re-located + re-adapted* to another school site with different parameters

The Brief>
Challenge Overview

Our questions to you...

How do you:

- develop a design idea that responds to a range of parameters and contexts?
- develop a design idea that is both customisable and economical?
- make it easy to add elements that allow buildings to evolve as needs change?
- deal with the relocation of buildings to new contexts at some point in the future?

step

1

Propose design ideas for next-generation relocatable classroom space [s] that:

The Brief>

The Challenge

“My favourite thing about the classroom is *learning and having fun* ...and also my friends and the teacher”.

[Student, 9 years old, Queensland, Australia]

“What if... the future offered design-led, sustainable, delightful relocatables that were a real source of pride for school communities?”

[Future Proofing Schools Research Team]



suit a core cluster of up to 50 - 60 students*



can be scaled to suit larger or smaller student populations



can adapt sustainably and economically to a range of physical and cultural contexts [climates, topographies, amounts of land available]



provide delightful spaces *within, between and adjacent* in which to *teach, learn and play*



can be installed rapidly

* based on teaching space of 3.5sqm per student + amenity spaces such as teacher preparation areas, wet areas and lockers + core spaces such as toilets

Note: Australia's Federal Guidelines suggest 9.75sqm per student for an entire school

step

2

Show us how your design idea from *step 1* works by applying it to a school site, either real or hypothetical:

How will your design idea:

- address variations in climate, topography and amounts of land available at different schools?
- address connections to the outside, and existing buildings?
- allow for clustering to create connected learning communities?
- convey a sense of permanence, even though it is relocatable?

You are free to tailor your design ideas to physical contexts of your own choice.

We provide some sample scenarios on pages 11 - 13 as a general guide.

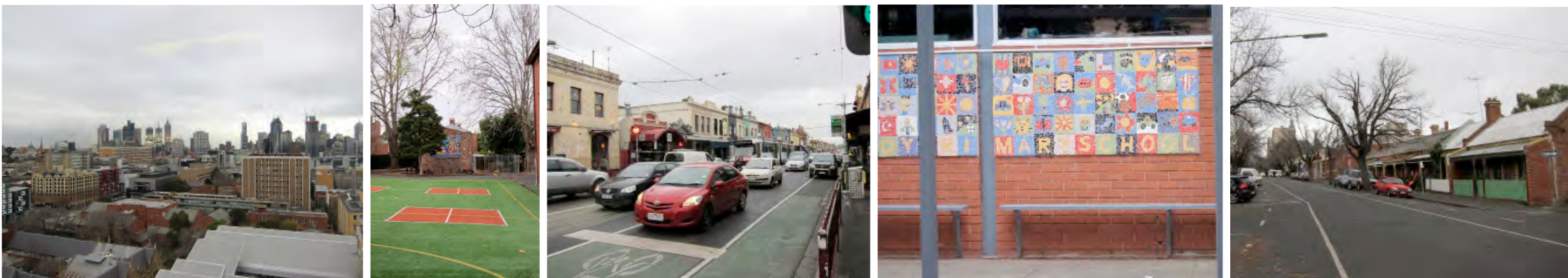
step

3

Show us how your tailored design idea from *step 2* can be re-located and re-adapted to a new school site with different physical parameters, either real or hypothetical:

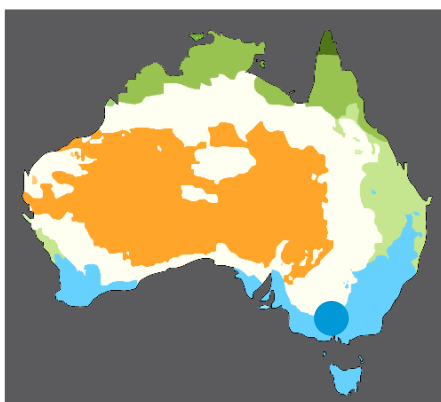
- How will your design idea adapt to this new set of parameters?
- What building elements might change?
- What building elements might stay the same?

Consider that your tailored design idea may be relocated after one year, three years or even more at its first school site.



Sample Scenarios >

An urban community



Overview

This inner Melbourne suburb has experienced a recent resurgence in the local primary school population as the older generation moves on. A new influx of young families is placing pressure on this constrained school site.

The main school building was built in the late 1800s and is currently surrounded by a number of single storey relocatable classrooms which have taken up the playground space.

Climate

Melbourne has a temperate climate with warm to hot summers ranging from 21°C to 34°C. Winter temperatures typically range from 0°C to 12°C. Annual rainfall ranges between 500mm and 600mm.

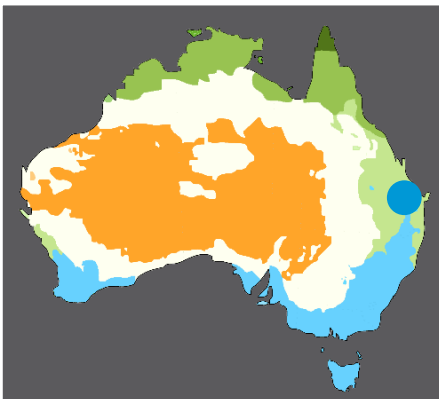
Some Issues

- Double storey relocatables would support increased headcount;
- Construction deliveries are difficult due to urban context and narrow laneways around the school;
- Creation of positive outdoor spaces between buildings on a constrained site.



Sample scenarios >

A suburban community



Overview

This suburban community is on the fringe of Brisbane. Like many Australian cities, it is experiencing significant population growth.

Inner and suburban Brisbane was hard hit by the floods of January 2011 which devastated many communities. Relocatable classrooms were deployed to a number of school communities in time for the start of the school year.

Climate

Brisbane has a sub-tropical climate of warm humid summers and mild clear winters. The summer months of December to February have typical temperatures between 20° - 29° C. The winter months of June to August have typical temperatures between 10° - 21° C.

Some Issues

- School enrolment often exceeding projections;
- Dealing with floods and cyclones;
- High humidity, high UV rays and the need for provision of breezeways and covered outdoor space to protect students.



Sample scenarios>

A remote community



Overview

This remote community of 3,500 is approximately 1,500km or an 18 hour drive north of Perth in Australia's west.

The town's main focus is iron ore mining, and the current resources boom is leading to an influx of people seeking to prosper from the significantly higher-than-average wages.

As a result, the town now has a mean age of 29 and is becoming increasingly family orientated; a trend that places demands on current infrastructure such as schools.

Climate

Weather can be extreme, with daytime temperatures ranging from 22°C in winter to 48°C in summer. The summer average is 35°C. The majority of rainfall is experienced during the summer months (wet season) with an average rainfall of 330mm per year.

Some Issues

- Roads impassable to all traffic for days or even weeks;
- Limited local construction labour;
- Distance from major population centres means road freight is costly.

The Fine Print

Competition Guide	
The Fine Print - Index	14
Competition Guide - Overview	15
Competition Guide - Judging Criteria	16
Competition Guide - The Jury	17
Competition Guide - Rules	18
Competition Guide - How to Enter	19

The Research Project

An Overview

Future Proofing Schools is working with six education departments across Australia and Industry Partners to revitalise 'relocatables' as 21st century learning spaces.

Our research embraces sustainable school design, 21st century learning and emergent innovation in manufacturing technologies, all exciting 'tipping points' for the design and construction of future learning spaces. The inter-disciplinary team includes architects, educators, landscape architects, and sustainability specialists.

The ARC Linkage Grant

This research is supported under the Australian Research Council's Linkage Grant funding scheme (project LP0991146). The views expressed herein are those of the authors and are not necessarily those of the Australian Research Council.

Competition Guide >

An Overview

Competition Timetable

Competition Period

Competition + Registration Opens	4 July 2011
Questions Close	22 August 2011
Answers Posted no later than	29 August 2011
Registration Closes	29 August 2011
Competition Closes	31 October 2011

Judging and Exhibition

Judging	mid November 2011
Winners Announced	late November 2011
On-Line Exhibition	early December 2011

Competition Roles

Competition Sponsor

This Competition is organised by the *Future Proofing Schools* research team, Faculty of Architecture Building and Planning at the University of Melbourne.

Steering Committee

The Steering Committee comprises the Chief and Partner Investigators of the *Future Proofing Schools* research team:

- Clare Newton (Lead Investigator)
- Professor Tom Kvan [CI]
- Dr Dominique Hes [CI]
- Dr Margaret Grose [CI]
- Dr Sue Wilks [PI]
- Dr Kenn Fisher [PI]

Research Staff

The *Future Proofing Schools* research team also includes [in alphabetical order]:

- Sarah Backhouse: *prefabrication*
- Tristan Clack: *geomatics*
- Lena Gan: *pedagogy & ICT*
- Philippa Howard: *PhD student (APAI)*
- David Lister: *parametric design*
- Jacqui Monie: *landscape architecture*

Our Research Partners

Future Proofing Schools acknowledges its Industry Partners:

- Department of Education and Early Childhood Development (VIC)
- Department of Education and Training (WA)
- Department of Education and Training (NSW)
- Department of Employment, Education and Training (NT)
- Department of Education, Training and the Arts (QLD)
- Catholic Education Office Melbourne
- Office of the Victorian Government Architect
- CEFPI (Victorian Chapter)
- Hayball Architects
- Mary Featherston Design
- TeeCh Project
- Rubida Research

Competition Advisor

Clare Newton

Clare Newton is an architect and academic at the Faculty of Architecture, Building and Planning, The University of Melbourne.

As first-named Chief Investigator for the *Future Proofing Schools*' ARC Linkage Grant, Clare brings an overview of the four research strands leading to this Design Ideas Competition.

Clare has been a Competition Advisor for the Australian Institute of Architects as well as jury member for many architecture awards and other competitions.

Questions

All Questions relating to the competition must be submitted electronically via the Question + Answer section of the Competition website. Answers will be posted by 29 August 2011.

Communication

Entrants may not seek information from the Competition Sponsor or any other person involved in the competition except through the formal Question process.

Endorsement and Support

This Competition has the endorsement of:

- the Australian Institute of Architects;

and is supported by:

- the Australian Research Council, and
- Office of the Victorian Government Architect.



Judging Criteria

The Jury will consider entries in terms of the following *four primary judging criteria*, the weighting of which shall be roughly equal:

- 1** **21st Century Learning:** design ideas anticipating how 21st century learning may evolve in coming decades and the spatial implications;
- 2** **Sustainable Schools:** designs which can efficiently and sustainably adapt to a variety of rural to urban contexts, climate zones and topographies;
- 3** **Landscape: Integrations & Connections:** design ideas that explore the potential for the integration and connection of relocatable classrooms with sites and landscapes;
- 4** **Prefabrication & Mass Customisation:** design ideas which allow for mass customisation and relocation in order to respond economically to local contexts and their associated parameters.

Competition Guide>

Judging Criteria



The Jury will also look for:

- > originality
- > the potential for transferability and relocation
- > a clear, compelling idea, concept or strategy
- > a design with clear potential for realisation
- > a sense of delight

Jury Chair

Jill Garner

The Associate Victorian Government Architect
In her role as The Associate Victorian Government Architect, Jill Garner regularly represents the architectural profession as an advocate for the importance of architectural design and innovation.

As well as establishing Garner Davis Architects in 1990, Jill has spent time teaching design, architectural history and contemporary theory at both RMIT University and the University of Melbourne.

She is a regularly invited contributor to architectural events, including awards juries, publications and journals, seminars and lectures.

Jury

James Timberlake

Partner, Kieran Timberlake
James Timberlake is a Partner at Kieran Timberlake, an American architecture firm internationally recognized for its beautifully crafted, thoughtfully made buildings that are holistically integrated to site, programme and people.

Kieran Timberlake is noted for its fusion of research with architecture, receiving over one hundred design citations including the 2008 Architecture Firm Award from the American Institute of Architects, and the 2010 Cooper-Hewitt National Design Award for Architecture from the Smithsonian Institution.

Arie van der Neut

Director, HDVN Architecten
Arie van der Neut is a Director of HDVN Architecten - winner of Architect of the Year 2010 in the Netherlands - in addition to his teaching commitments at the Amsterdam Academy of Architecture.

HDVN is driven by a strong social and sustainability agenda, and in recent years has explored the use of prefabrication in creating sustainable infrastructure on projects from schools to nursing homes.

Gini Lee

Professor of Landscape Architecture
Professor Lee was recently appointed the Elisabeth Murdoch Chair of Landscape Architecture at the University of Melbourne. Her research interests include cross cultural and cross disciplinary design, cultural landscape assessment and interpretation, and indigenous built environment and consultation practices.

Professor Lee has published many papers investigating these themes, and has also chaired and served on a number of design review panels and juries across Australia.

Leanne Taylor

Director of Planning + Infrastructure DET NT
As Director Planning and Infrastructure Services for the Northern Territory's Department of Education and Training, Leanne Taylor has a wealth of knowledge regarding the challenges faced in delivering solutions to communities ranging from the urban, tropical context of Darwin to remote contexts from Alice Springs to Arnhem Land.

Lee Callum

Executive Director, Strategy, Planning + Performance DET QLD
From her time in a one teacher rural school to being Executive Principal of one of Australia's largest Prep to Year 12 Colleges, Lee Callum has led dynamic and leading practices that have achieved recognition nationally and internationally.

In her current role she is responsible for the capital works program for state Early Childhood, Primary, Secondary and Special Education Schooling Facilities and the Training TAFE Institutes across Queensland.

Tim Fitzgerald

Director of Wannik Unit, DEECD VIC
As Project Director of Wannik Unit, Tim Fitzgerald brings his expertise as an educator who is addressing the needs of indigenous communities across regional Victoria. Previously, Tim was Principal of the reopened Fitzroy High School.

He is renowned as an education innovator and leader encouraging creative curricula which engages students through effective use of IT and 21 century pedagogy.

Competition Guide >

The Jury

Expert Advisors

The Steering Committee and nominated representatives from our Research Partners will be available to the Jury as Expert Advisors.

The Jury may also seek independent expert advice as required.

The Competitions

The prize pool is \$60,000.

Categories:

1. Professional Competition

Sponsored by Melbourne School of Design

1st Prize \$25,000

2nd Prize \$10,000

3rd Prize \$5,000

Four awards of \$2,500 will be available to remaining entrants for the most noteworthy responses to the four primary judging criteria.

2. Student Competition

Sponsored by RM Education

1st Prize \$5,000

2nd Prize \$2,500

Commendations - 5 awards of \$500

To be eligible for this competition, authorship must be by tertiary student(s) enrolled (each) for a minimum of 50% of their normal full-time course load at an institution **other than** The University of Melbourne.

Students may choose to submit work into the professional competition OR the student competition, but cannot submit in both.

Eligibility

This single stage Ideas Competition is open to professionals* and tertiary students including – but not limited to – Architects, Landscape Architects, Urban Designers, Planners and Industrial Designers.

Entrants are welcome to work individually or in multidisciplinary teams.

**Where applicable, we encourage professionals to be registered with the relevant professional association/institute.*

Ineligibility

Members of the Research Team, Jurors, Staff and Students of The University of Melbourne are *precluded* from entering this competition. Note that University of Melbourne students have their own competition - see [Competition for University of Melbourne Students](#).

At the time of registration you will be asked to make a declaration that you are eligible to enter the respective category.

Copyright

Copyright for each submission remains with the original author(s) but a licence is granted to the Competition Sponsor [as defined on page 15] for use of submission images for marketing and promotion relating to the competition and its outcome. Any such reproductions shall acknowledge the copyright owner.

Submission of the competition entry shall be deemed as accepting the conditions within this Competition Guide. No compensation shall be made for such reproduction or publication.

Further use of submissions and ideas contained within shall be negotiated between the parties.

Award winners may be interviewed for on-line presentation, later book publication or other events aimed to distribute knowledge regarding the competition.

Jury Coordination

If one of the jurors has to withdraw prior to the completion of judging, the Competition Advisor reserves the right, in consultation with the Steering Committee, to appoint another juror of equivalent credentials.

Competition for University of Melbourne Students

In the interest of fairness to all other entrants, students of The University of Melbourne are ineligible to enter the General Competitions. This is because our own students *could be perceived* to have an 'unfair advantage.'

We are therefore running a separate Competition for students of The University of Melbourne.

The University of Melbourne Student Competition

Sponsored by Future Proofing Schools

1st Prize \$2,500

2nd Prize \$1,000

Plus 8 commendations:

3 awards of Ipads for students undertaking MSD *Competition Studios*

5 further awards of Ipads for students **not** undertaking MSD *Competition Studios*

To be eligible for this Competition, authorship must be by University of Melbourne student(s) enrolled (each) for a minimum of 50% of their normal full-time course load.

This Competition is open only to students of The University of Melbourne.

Competition Guide >

Rules

Prize Pool General Comments

All amounts are in Australian Dollars (\$1AU was slightly higher than \$1US in June 2011).

The jury reserves the right to adjust the prize proportions (number of prizes and/or amounts) to reflect submission strengths without reducing the overall professional prize pool or the overall student prize pool.

Disqualification

Submissions which fail to meet requirements of the Competition Guide shall be disqualified on advice of the Competition Advisor if:

- the submission is received after the time and date stipulated;
- a competitor attempts to influence the decision of the Jury;
- the submission is not in accordance with the submission requirements.

Anonymity

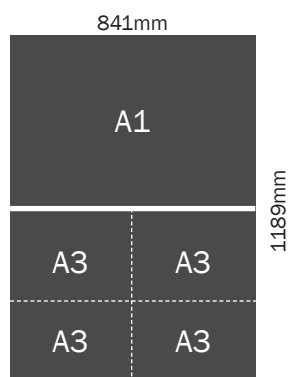
Strict anonymity is to be maintained during the Competition and Judging period. All entries shall be made without any name, business name, logo or identification mark.

Identifying information may lead to disqualification.

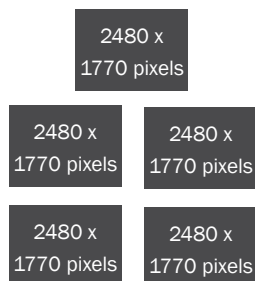
Entrants who disclose, publish or exhibit their submitted entry prior to the announcement of the Competition winners will be disqualified.

Presentation Sheets

Primary files for printing at full size:



Web ready files for on-line exhibition:



Competition Guide>

How to Enter

Submission Requirements

All Submissions must be made in digital format.

Presentation Sheets

Entrants shall submit landscape format presentation sheets explaining their idea. One of the sheets must include a text statement of no more than 500 words.

Presentation sheets must be uploaded to the Competition website in **both** of the following formats:

Primary files for printing at full size:

- 1 x A1 PDF file
- 4 x A3 PDF files
- 300 dpi
- Please refer to the adjacent diagram

Web-ready files for the on-line exhibition:

- 5 x JPEG files
- Each 2480 x 1770 pixels
- These will correspond to the 5 presentation sheets described above

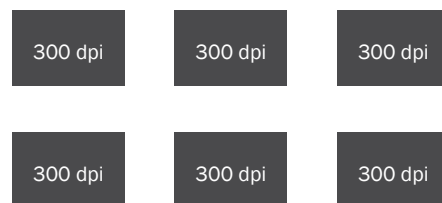
Images of your choice

In addition to the presentation sheets, the following are required:

- Up to 6 x image details of your choice from the presentation sheets
- Each image at 300 dpi

Images of your choice

Images of your choice for publications:



Statement:

One Microsoft Word compatible (.doc) file containing the same text statement (500 words or less) as on the presentation sheet.

Cover Page:

- This will include both the Registration Number and the contact information of the Entrant.
- This will be kept separate from the submissions during judging, and will only be seen by the Competition Advisor during the judging period.

Naming of Files

The Registration Number must be used in the file names. For example, the files for registrant 000 would be called:

- Board A:
000_A.pdf (full size print file),
000_A.jpg (small file for web)
- Board B:
000_B.pdf (full size print file),
000_B.jpg (small file for web)
- Image of choice:
000_thumb1.jpg, etcetera
- Cover Page:
000_cover.doc
- Statement:
000_statement.doc

Language

All documents submitted for the competition must be in English.

How to Enter

To enter the Competition it is necessary to:

- Complete the online registration form by 29 August 2011.
- Submit your Entry electronically by 31 October 2011, in accordance with the Submission Requirements.

1. Registration

You must complete the online registration form to Enter.

Registration and competition entry is free.

Entrants will receive a **Registration Number** by email upon completion of the registration process.

This Registration Number is to be used on all submitted Competition documents.

2. Submission

Submissions must be made electronically via the Competition website. Submissions may NOT be delivered in person or by mail.

Submissions must follow the format and file sizes as indicated under **Submission Requirements**.

Submissions must follow requirements for **Anonymity**.

The Registration Number must be included in file names of your submission, as well as on the upper right hand corner of each page or sheet of your submission [24 point plain white text on a dark background, or the inverse]. No other identifying name or mark is to be included in your submission.

Entrants will receive an automatic email confirmation upon submission.

The closing date for Submissions is 17:00 | 5pm Australian Eastern Daylight Saving Time (UTC/GMT +11 hours) on Monday 31st October 2011.