

# Lightweight Building Solutions

# Education



# The Education Revolution is here!

In recognition of the critical role of education to the future prosperity of the nation, the Australian Government has embarked on an Education Revolution.

Significant resources have been allocated to improving education infrastructure, increasing the number of skills training places and encouraging students to undertake further studies.

A revolution is also taking place in the design of our educational facilities, with new technologies and products being developed to meet the challenges of the 21st century.

The impact of the education infrastructure on learning outcomes has been extensively researched and documented. Overall building design and condition, lighting, internal air quality, temperature, acoustics – have all been shown to have an affect on student achievements and behavior. (*Schooling Issues Digest: The Impact of School Infrastructure on Student Outcomes and Behavior, Department of Education, Employment and Workplace Relations, Australian Government, 2002.*)

In addition to the minimum requirements set out in the Building Code of Australia (BCA), various government authorities and educational institutions have developed their own criteria in regard to key aspects of building design such as building layout, noise levels, wall finishes, etc. Utilisation of sustainable design principles and materials is now a core requirement on most government funded projects.



Australia's leading supplier of building materials and systems, Boral offers a wide range of lightweight wall and ceiling solutions to suit various project requirements.

In addition to standard wall and ceiling systems utilised on most building projects, Boral offers solutions that satisfy specific requirements of education buildings, such as Fire Protection, Sound Isolation, Sound Absorption and Impact Resistance. The use of Boral lightweight products and systems can also contribute to the Environmental Performance and Green Star rating of a project.

This publication provides an overview of Boral lightweight solutions for the Education Sector.

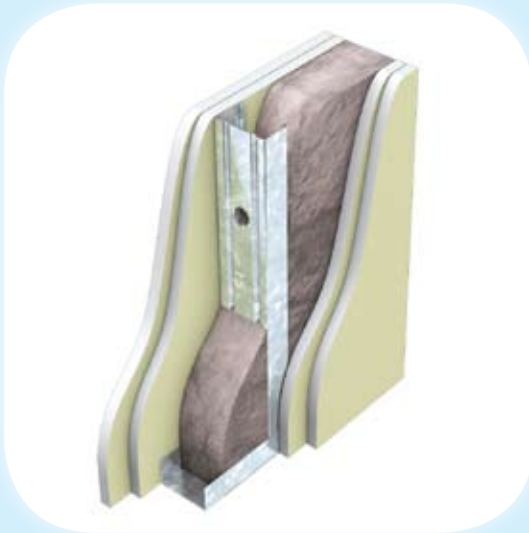
More detailed information can be found at [www.boral.com.au/education](http://www.boral.com.au/education)

# Acoustic Design

Verbal communication is the primary mode of teaching in most educational settings. Careful attention to acoustical design is therefore essential for creating an effective learning environment.

Teacher or lecturer effectiveness in delivering the message is all too often compromised by even modest levels of noise intruding from the adjacent areas, and sound reverberation generated within the room.

Boral offers a range of lightweight wall and ceiling solutions that address these critical issues.



## Sound Isolation between Spaces

Voices, footsteps, television sets and musical instruments are some of the typical sources of unwanted noise infiltrating the classroom from adjacent spaces. Boral offers an extensive range of lightweight wall and ceiling solutions that provide increased levels of acoustic isolation and can greatly minimise these disruptive noises.

Utilising Boral 13mm Enviro Soundstop® plasterboard, Boral Acoustic Clips and cavity insulation, these systems provide acoustic isolation up to  $R_w=65\text{dB}$  and can effectively reduce footfall and airborne noise from the adjacent spaces.

Shown on the left is a Boral lightweight steel stud solution (system ref. S2626A) achieving  $R_w = 55\text{dB}$ , which satisfies one of the many recommended sound insulation ratings contained in the Technical Guideline - School Noise Assessment developed by the Association of Australian Acoustical Consultants (AAAC).

The full suite of recommended Boral lightweight wall and ceiling systems together with the relevant sound insulation criteria contained in the AAAC Technical Guideline can be found at [www.boral.com.au/education](http://www.boral.com.au/education)



## Sound Reverberation within Spaces

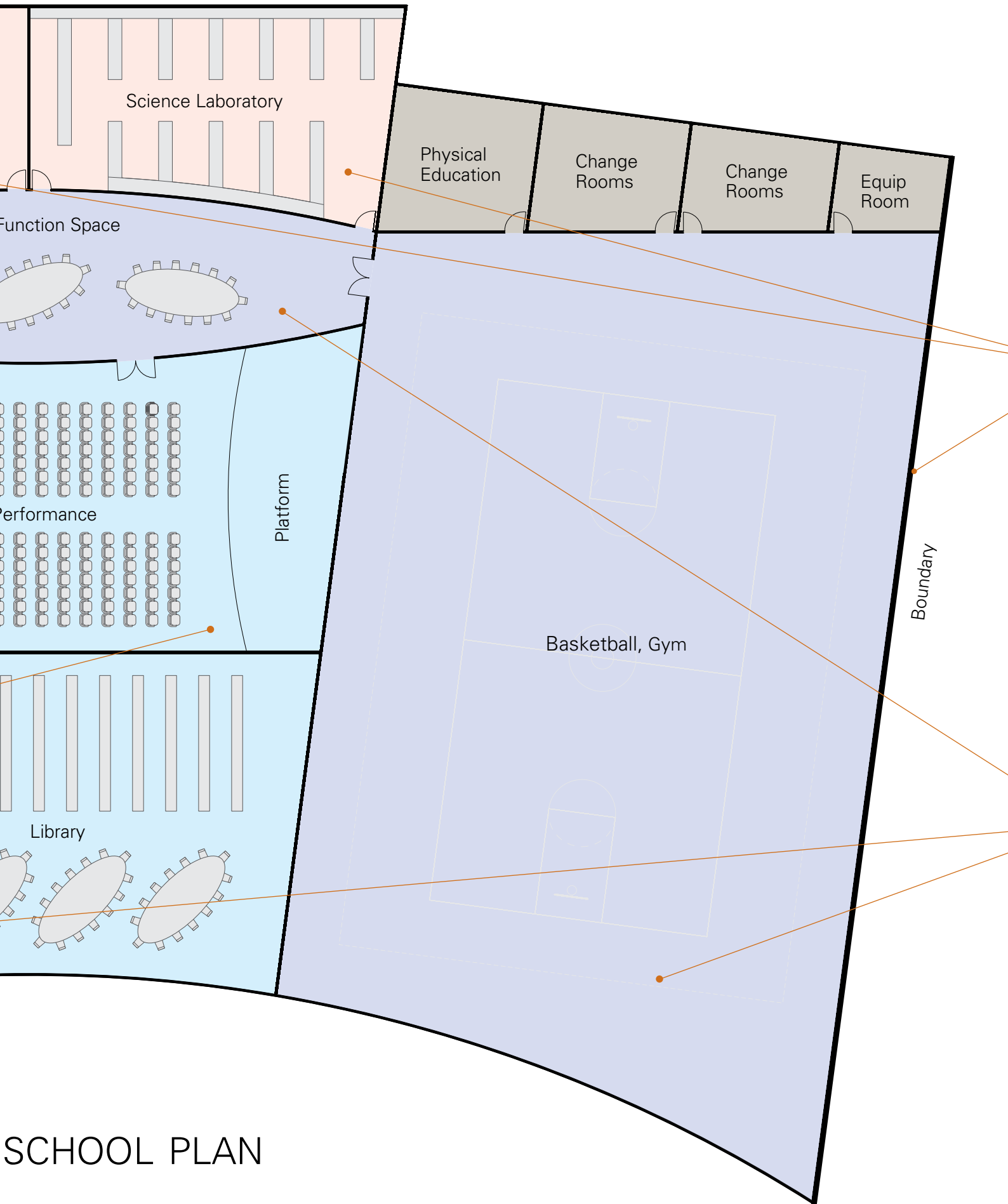
Reverberation within the room is caused by sound bouncing off the hard floor, ceiling and wall surfaces. In order to reduce reverberation, these surfaces need to be treated with sound absorbing materials. Boral offers a range of wall and ceiling lining materials with high sound absorptive properties.

Boral Echostop® perforated plasterboard is available in three attractive designs, and can be used on both ceilings and walls to provide Noise Reduction Coefficients up to NRC 0.80. Detailed information on Boral Echostop® plasterboard can be found at [www.boral.com.au/echostop](http://www.boral.com.au/echostop)

Boral also offers a complete ceiling tile system with an extensive range of acoustic ceiling tiles providing Noise Reduction Coefficients up to NRC 0.95. Further information on the range of acoustic ceiling tiles can be found at [www.boral.com.au/ceilings](http://www.boral.com.au/ceilings)



ILLUSTRATIVE



SCHOOL PLAN

# Fire Protection

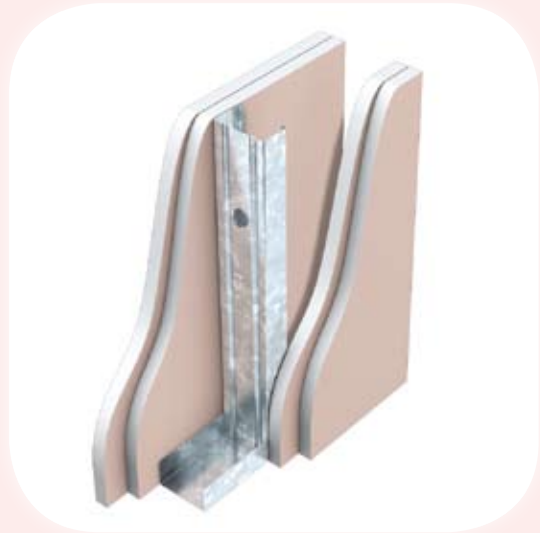
Minimum fire rating requirements for schools and other education buildings are set out in the Building Code of Australia (BCA). Boral offers cost effective solutions to satisfy the most stringent of these requirements.

From fire rated internal and external walls to fire protection of beams and columns, Boral offers a wide range of lightweight fire rated solutions incorporating the proprietary Firestop® plasterboard.

Boral fire rated plasterboard systems have been designed to achieve fire ratings up to 4 hours.

All Boral plasterboard fire rated systems are supported by Test Reports from approved Testing Authorities or professional Opinions as required by the Building Code of Australia.

The full range of Boral fire rated plasterboard systems can be found at [www.boral.com.au/selector+](http://www.boral.com.au/selector+)



# Impact Protection

Impact damage to internal wall surfaces is a major contributor to the high maintenance costs of educational buildings. Be it in corridors, classrooms or sports halls, walls are often subject to damage far in excess of normal wear and tear.

It is for such high risk areas that Boral introduced its Impactstop® impact resistant plasterboard.

Impactstop® is 13mm thick high density plasterboard which has continuous fibreglass mesh embedded within its core. Impactstop® plasterboard can be distinguished by its purple paper lining.

Impactstop® plasterboard offers excellent resistance to soft body impact and should be used in high traffic areas and other applications where walls may be subjected to bumps and blows.

For more information on Boral Impactstop® plasterboard please visit [www.boral.com.au/impactstop](http://www.boral.com.au/impactstop)



# Green Star Rating

Sustainable Design is an integral requirement of many government and non-government projects. Government authorities and leading developers now commonly go beyond the minimum energy efficiency requirements stipulated in the Building Code of Australia, and specify Green Star rating for their projects.

Boral lightweight building solutions can contribute to Green Star rating of educational buildings in a number of ways:

## **Waste Management** (Green Star Ref No. Man-7)

Up to two credit points can be awarded to recognise contractor management practices that minimise the amount of construction waste going to disposal. Please contact your local Boral Plasterboard office in regard to waste pick up services available in your area.

## **Recycled Content** (Green Star Ref No Mat-3)

The use of Boral Enviro plasterboard utilising Recycled Core Technology can contribute towards achieving one Green Star credit point. Boral Enviro plasterboard products have received Green Environmental Choice Australia (GECA) certification as meeting GECA's Panel Board standard for recycled content.



BOR-2009  
GECA 04-2007  
Panel Boards

## **Internal Noise Levels** (Green Star Ref No. IEQ-7)

The use of Boral plasterboard acoustic wall systems, Echostop® plasterboard or acoustic ceiling tiles can contribute towards archiving to Green Star credit points.

## **Volatile Organic Compounds** (Green Star Ref No. IEQ-8)

Boral plasterboard lining products, compounds and adhesives have been certified as having Volatile Organic Compound levels within the limits required to contribute to one Green Star credit point.



For more information on Sustainability credentials of Boral plasterboard products and systems please contact Boral TecAssist on 1800 811 222 or email [tecassist@boral.com.au](mailto:tecassist@boral.com.au)

## Technical Enquiries

**TecASSIST**  
add a valuable member to your team  
**1800 811 222**

TecASSIST® provides technical advice to builders, architects, contractors, distributors, engineers, regulators and home owners throughout Australia. Our friendly team can offer both practical and design input at all levels of the plasterboard industry.

*Get your next project off on the right track by giving TecASSIST® a call weekdays 8.30am – 4.30pm AEST.*

## Sustainability

Boral Plasterboard aims to minimise the environmental impact of its operations and to make a positive difference to the environment and communities in which it operates. Its products are manufactured from sustainable gypsum resources and 100% recycled paper liner.

Lightweight plasterboard construction offers the benefits of low embodied energy, enhanced indoor air quality, ease of

thermal and acoustic upgrading and ease of modifications and repair.

Plasterboard waste can be recycled back into new plasterboard or used as a soil conditioner. Please contact Boral Plasterboard regarding waste collection services available in your region.

TecASSIST® Fax: (03) 9645 1812

Email: [tecassist@boral.com.au](mailto:tecassist@boral.com.au)

## Sales Offices

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Facsimile (08) 8984 3778

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Email [tecexport@boral.com.au](mailto:tecexport@boral.com.au)

[www.boral.com.au/education](http://www.boral.com.au/education)

## Guarantee

Products manufactured and supplied by Boral Australian Gypsum Limited (BAGL) A.C.N. 004 231 976 (trading as Boral Plasterboard) are guaranteed to be of consistent quality and free from any defects.

Boral Plasterboard may limit its liability under this guarantee to, at its option, the replacement or payment of the cost of replacing OR supplying equivalent or payment of the cost of supplying equivalent OR the repair or payment of the cost of repairing products found to be defective.

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The technical information contained in this manual was correct at the time of printing. Building systems and details are, however, subject to change. To ensure the information you are using is current, Boral recommends you review the latest building information available on the Boral website. For further information contact TecASSIST® or your nearest Boral Plasterboard Sales Office.

## Health and Safety

For information regarding the safe use of Boral Plasterboard products and accessories please refer to instructions on the product packaging or contact your local Boral Plasterboard Sales Office or TecASSIST® for a current copy of the Material Safety Data Sheet.

