

# The green imperative: why we should rethink where our students learn

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*Wangaratta High School achieved a 4 Star  
Green Star – Education Design PILOT  
rating in 2009, photo Spowers*



**H**ave you ever thought about how much time you spend at school? A high percentage of the waking hours of fulltime teachers and students during term time is passed within school buildings. For principals, the proportion is likely to be even greater. With current education debates focused on teacher quality and standardised test results, the role of the physical environment of schools can easily be downplayed. Yet there is mounting evidence that it is vitally important to the health and wellbeing, and by extension, the educational outcomes of students.

No one knows this better than Rachel Gutter. The Director of the US Green Building Council's Center for Green Schools, Gutter is a passionate advocate for improving the quality of school infrastructure in order to ensure that students and teachers are in a healthy and sustainable environment. On a recent visit to Australia, she shared her views and vision of the development of Green Schools.

Gutter became involved with the Green Schools movement around six and a half years ago. An interior architect with a teaching background, her work took her to a Green Build conference, where the Leadership in Energy and Environmental Design (LEED) Green Building Rating System was being launched for K-12 schools. The presentation had a profound effect on Gutter, who on her return called her mother to say, "I know what I want to do with the rest of my life."

Her desire to help people better understand the links between environment and education found an outlet in Gutter's role with the Center for Green Schools. "People often focus time and energy on the who or what of education, but not on the where," she explains. With 133,000 K-12 schools in the US, the Center has its work cut out, but the magnitude of the issue only lends more weight to its importance. "We have a huge opportunity to create an improved environment for the 25 per cent of the population who go to schools or college each day as students or staff," Gutter says.

Instilling a Green Schools philosophy also has the added benefit of educating students, who are our future leaders, to more effectively care for the planet.

There are many different interpretations of 'green' when it comes to education, but the Center for Green Schools offers a list of characteristics that can help assess the extent to which a particular school qualifies as 'green'. These include financial and environmental considerations such as energy use and conservation, physical aspects such as air quality and building safety, and whether the school saves taxpayers money. The list also features educational elements such as how environmental literacy, recycling and habitat protection are approached.

The breadth of factors that schools must



Wangaratta High School, photo Spowers



Robin Mellon



Rachel Gutter.

embody to be able to justify a 'green' label begs the question, is it worth all the effort? Research indicates strongly that it is. In early 2012, the McGraw-Hill Research Foundation in partnership with The Center for Green Schools released a paper summarising current evidence of the effect of environment on how students hear, breathe, see, feel, move, and think and learn. For example, *The Impact of School Buildings on Student Health and Performance: A Call for Research* (Baker & Bernstein, 2012) cites Danish research by Klatte *et al.* (2010) into classroom acoustics that concluded that short term memory and speech perception were negatively affected by increased reverberation time. Similar research exists for most of the other areas on which the paper focused, and when taken from a holistic view, the information illuminates the disservice we are doing to our students when educating them in suboptimal surroundings. Where insufficient research

exists, the paper suggests future directions for additional study to enlarge the body of evidence to support the Green School movement.

A later press release by the US Green Building Council quantifies the perceived effect of environment on student outcomes (USGBC, 2012). Based on a McGraw-Hill Construction Study of new and retrofit Green Schools, the release indicates that 70 per cent of respondents from K-12 schools reported increased test scores and 100 per cent reported a positive impact on student health and wellbeing after Green School initiatives were undertaken. Improved air quality and reduced operating costs and energy use were also valued by respondents.

Rachel Gutter is effusive about the anecdotal evidence she has witnessed over time. "There are many inspiring stories," she asserts. One such story involves a child who used to use an inhaler several times a week while attending school. Once the child transferred to a Green School,



Bay View Public School



Bay View State School achieved 4 Star Green Star rating

*Schools that serve disadvantaged populations have seen a turnaround in results that coincides with green initiatives*

the parent was able to hand over the inhaler because the child no longer needed it. The example has particular resonance for Australia, where National Asthma Council Australia statistics indicate that one in every nine or 10 children have asthma (National Asthma Council Australia, 2012).

Gutter also talks of the “2.30 headache” or “how sick a building makes teachers after a full day”. Teachers suffering from headaches or other ill effects in certain schools have reported a marked improvement once they are in a

healthier environment. Green School changes have also saved jobs, with a rural district in Kentucky managing to retain 104 positions in the face of the Global Financial Crisis as a result of savings made through building efficiency and efforts to conserve as a district.

Students, too, have benefitted from greener infrastructure. Gutter explains how schools that serve disadvantaged populations have seen a turnaround in results that coincides with green initiatives. A case in point is The Kensington Creative and Performing Arts High School in

Philadelphia. After becoming the first school in the country to be awarded Platinum level under the US Green Building Council’s LEED certification program, the school also met its Adequate Yearly Progress targets for the first time.

Although there are many differences between the physical and cultural environments of Australian and US education systems, Green School lessons are easily transferable to Australian schools. Executive Director of the Green Building Council of Australia (GBCA), Robin Mellon, acknowledges that although the US Green Building Council has been running for 10 years longer than its Australian equivalent, we are benefitting from the lessons learned by the US and are accruing our own case studies showing the effectiveness of Green Schools. “We need a way to showcase that it is not about spending more dollars, but about the benefits of a better environment to student outcomes,” Mellon says.

The GBCA’s Green Star rating system has already had an impact on Australian schools. The newly built Bay View State School in Queensland, for example, achieved a 4 Star Green Star rating. While it has many of the features you would expect in a sustainable school – rainwater tanks, solar panels and compost bins – it is the community impact of the project that is most noteworthy. The school boasts a parent satisfaction rate of 100 per cent, as well as higher than average school attendance (2013, GBCA) due, in large part, to the healthy learning environment and the culture of environmental responsibility.

Green Star projects are not, however, unique

to new builds. Wangaratta High School in Victoria achieved a 4 Star Green Star – Education PILOT rating on completion of the first part of a three-stage development plan (2013, GBCA) [*Education Today: 2009 Vol 09 (4)*].

Energy efficiency in the project was realised through the use of geothermal technology that utilises a ground heat exchange system. The buildings inspire a sense of pride in students, who will also be involved in hands-on programs that will enable monitoring and enhancement of the school's infrastructure.

Most of the Green Star projects sound costly, but Gutter is quick to point out that although there is a perception that Green Schools are more expensive, this is often not the case. "There are case studies where Green Schools have been built below regional construction costs," she says. She goes on to explain that the lower up front costs are then supported by savings over the school's lifetime. The process used to create a Green School also ensures that maximum benefits are derived from the school's environmental set-up. "Teachers and principals are involved in how schools are designed and this better serves the curriculum and pedagogy," Gutter reveals.

Schools wanting to start out on a green pathway do not have to invest a lot up front. Gutter says that one of the earliest things that schools can do is identify their priorities. "Do you need a green lawn all year round? If no, that saves you money," she explains. The US Department of Education's Green Ribbon Schools program has identified three pillars that Gutter says can give schools a roadmap of where to go next on their green journey. These are: reducing environmental impact, or as Gutter puts it, "journey towards zero"; occupational health and performance or "no harm", and environmental literacy. Schools can identify their own priorities and objectives around these pillars to focus on the issues that most affect them. The first changes might be as simple as changing to green cleaning products.

The Center for Green Schools also offers a Green Classroom Professional Certificate Program that helps participants to, "recognise, adopt and implement practices that keep teachers and students focused, alert and ready to learn" (Center for Green Schools, 2013). Consisting of a two-hour online course and a 30-question exam, the program aims to support schools to maximise the opportunities to make improvements to their environment that bring both health and academic benefits.

To assist schools to assess the 'greenness' of new builds or renovation projects, the Green Building Council of Australia has developed a rating tool specifically for the education market. The tool can be used from the design phase right through to up to two years after completion, giving schools ongoing guidance in sustainable practices. Robin Mellon explains that the GBCA understands that Australian schools face unique



*Peregrin Springs State School on the Sunshine Coast achieved a 4 Star Green Star – Education Design PILOT rating in 2010*

### *The Green Building Council of Australia has developed a rating tool specifically for the education market*

environmental challenges. "How do we make our learning spaces more resilient, both for extremes of climate events and temperature?" he asks. "It's also about the ability of schools to be socially resilient." Social resilience, according to Mellon, includes issues of school placement. Building schools on cleared land outside the suburban fringe means that parents and students have longer journeys, with less access to other services. "Schools need to be collocated with amenities nearby," Mellon asserts. "We also need to be designing for climate. Is it really green if it's underwater?"

The GBCA is considering a number of initiatives, including establishing a Centre for Green Schools, but is investing time to ensure that the direction it takes is right for the Australian situation. Together, the GBCA and the Centre for Green Schools are hoping to mobilise a global movement with engagement at all levels. "We want to set up a way to achieve our objectives through collaboration," Mellon says. Gutter explains that success in the US has been achieved through the use of grassroots advocates. Governments, parent groups and school boards have all been trained in how to effectively promote Green Schools messages, with an emphasis on the issues relevant to specific communities. This customised approach has given the movement a public-face that focuses on the importance of making schools healthy, safe and efficient.

The Australian Government has widely publicised its aim of "being in the top five schooling nations in the world for reading, science and maths by 2025" (Garrett, 2012). Few could argue with an objective of raising student outcomes. It is therefore time that schools and governments of all sectors and levels in Australia

put politics aside and seriously think about the impact of the physical environment of schools on our students, teachers and the wider community.

**ET**

#### **Further reading**

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