

The South Australia Health and Medical Research Institute (SAHMRI) is a tour-de-force of parametric design, according to Paul Stoller, M.AIRAH.



# Paul Stoller, M.AIRAH

Paul Stoller, M.AIRAH, has taken an interesting and somewhat circuitous route to engineering – via study in art, architecture, history, literature and science.

Ahead of his appearance at ARBS, Ecolibrium's **Matt Dillon** and **Rachel Urquhart** ask the now Sydney-based US-born Atelier Ten professional about his passion for facades, good design in general, and integrated practice.

## Ecolibrium Q&A

**Ecolibrium:** What brings Atelier Ten to Australia – what does the company hope to achieve here?

**Paul Stoller:** Atelier Ten has long enjoyed working in Australia – our first project here was Federation Square in Melbourne, over 15 years ago – as the climate and our clients together have

enabled us to develop innovative architectural and building services approaches to comfort conditioning and resource conservation. A steady increase in work over the past five years, plus personal reasons for me to relocate to Sydney, made now the right time to open our first permanent office in Australia.



**Eco:** What would you say are some of the defining characteristics of your firm?

**PS:** Our clients tell us that our design sensitivity and creativity, our clear and concise consulting, and our careful follow-through set us apart from the many excellent peer firms we work amidst.

**Eco:** Could you tell us a little bit about the path you've taken to arrive where you're at? What made you get into the profession, and what inspires you now?

**PS:** I took a circuitous route to environmental design, it's fair to say. My formal university level education began at the University of Wisconsin – Madison in the engineering school, because I loved science and because my father was an engineer.

All good sons of engineers go into the profession, right? At least they do until they take their first circuits course, which made me abandon the school entirely! Thankfully, that only happened after I had completed all core supporting science course, which I deeply enjoyed. I shifted then into history, added literature and art history courses and ultimately completed my undergraduate (Bachelors) degree with majors in all three areas.

I then focused on architectural history through a Master of Arts degree before zeroing in on architecture, again in a Master of Architecture degree at the Yale School of Architecture. There, I fell in love with the beautifully integrated architectural and engineering work being done in London in the 1990s, the likes of which I couldn't find in the States at the time.

So, after graduating I headed to the UK, where one of my tutors introduced me to Atelier Ten, which was doing some of the most innovative and design focused environmental design and building services work. They hired me on as their first non-engineer to help them better communicate with architects graphically. Of course, the joke was on me, as years after I thought I had fled engineering for good, I found myself working in engineering again.

But what inspired me to work for Atelier Ten then, and continues to inspire me now, was the design culture there – and here in Sydney too – that encourages all collaborators with valuable design ideas to participate in all aspects of building design. The excitement of a smart group of designers thinking, sketching, and shaping a building together is infectious.

**Eco:** I understand you specialise in façades – what interests you about them?

**PS:** Facades are the most complex and exciting aspect of a building. They can be – and traditionally have been – incredibly sophisticated filters between outside and in; designing them to properly balance views with privacy, daylight with shade, insulation with ventilation, acoustic control with connection, plus keeping rain and wind and animals out while allowing operability, is a terrific technical challenge. Doing all of this, while making them beautiful, is at the heart of the architectural imperative.



Paul Stoller, M.AIRAH

By following the logic of the local site and climate, which often leads to façade proportions and elements resonant of vernacular building, new buildings join an urban conversation with their older neighbours. These familiar exchanges between old and new help us understand, in the words of urban theorist Kevin Lynch, “what time is this place”. These more broadly resonant architectural harmonies help us fall in love with great buildings and great places.

“The constraints and challenges of adaptive reuse typically push us harder, and ultimately make us more creative”

**Eco:** What are the most important things to consider when designing building façades?

**PS:** Understand what conditions – thermal, visual, acoustic, and experiential – are intended for the interior, and design outward from those.

**Eco:** For all the progress that's been made in sustainable design, do you feel like enough attention has been paid to façades?

**PS:** Superficially, yes: how many “green” buildings tout their fancy all-glass façade or double-façade as integral to the building's sustainability? This same fetish with the Miesian dream



Kroon Hall at Yale University boasts exceptionally high performance.

of the invisible glass curtainwall also reveals that insufficient attention has been paid to how facades actually need to work, since over-glazing challenges run rampant in current architectural design. Generally, anything beyond 30 per cent window-to-wall ratio is not needed to create a great indoor environment. We spend much of our time developing fancy façade solutions that mostly mitigate the problems created by having more glass than is needed to balance all the environmental factors I listed above.

**Eco:** What is your favourite project that you have worked on, and what makes it stand out for you?

**PS:** I have a few. In the US, I love Kroon Hall for the Yale School of Forestry: its exceptionally high

performance and technologically advanced façade feels simultaneously exceptionally modern and like it has been on the campus for 100 years.

In Australia, the fish scale-like metal sunshades of the recently opened South Australia Health and Medical Research Institute (SAHMRI) building shimmer continuously through the movement of the sun, while also opening up views in and out of the first prominent science building on the North Terrace. It's a real tour-de-force of parametric design.

Lastly, Federation Square in Melbourne remains near and dear to me as both the first project I worked on with Atelier Ten and for the sheer cleverness and the dead-reliable performance of the thermal storage "labyrinth" that Atelier Ten envisioned, designed, and championed for the building.

**Eco:** A major recent project you were involved with was adapting the former auto factory into the multi-use Tonsley Park. What was challenging on the project? What did you find satisfying?

**PS:** The incredible opportunity presented by the refurbishment of the Main Assembly Building (MAB) and Tonsley Park was the creation of a true indoor-outdoor microclimate under the refurbished 8 hectare roof.

[Architect] Woods Bagot has been terrific champions of this idea, which they developed in the original redevelopment master plan, and their commitment to maintaining this architectural vision of roof as giant passive climate-control device inspired the entire team, including Atelier Ten. We helped figure out how to balance roof opacity, transparency, and



Paul Stoller, M.AIRAH, rates the Esplanade Theatres, in Singapore, as one of Atelier Ten's most poetic façades.

open areas, for daylight and sunlight where needed, and for improved thermal comfort in summer and winter.

**Eco:** Would you rather be involved in a project that starts from scratch, do you prefer adaptive reuse, or is it horses for courses?

**PS:** It's horses for courses. While new design often presents the opportunity to explore big or bold ideas, the constraints and challenges of adaptive reuse typically push us harder and ultimately make us more creative. Both as an environmentalist committed to getting more and better life out of our existing buildings, and as an architectural historian who loves a rich and diverse cityscape, I particularly relish the challenges of adaptive reuse.

**Eco:** Do you have a favourite high-performing building?

**PS:** Lots of them! In Sydney, the Opera House for its incredibly poetic construction and for the incredible advances it brought to the world of structural and façade engineering. In Germany, the Commerzbank tower still stuns me for its generosity of its internal gardens, an idea that is only now catching on in the rest of the commercial building world. In New Haven, the Yale University Sculpture Building lives up to its conceptual ambition of 21st century loft, where extreme adaptability meets exceptional climate responsive and energy-efficient performance. And in

Singapore, the Esplanade Theatres and the recently opened Gardens By The Bay greenhouses are two of Atelier Ten's most poetic façades – children flew sunshade kites on the opening day of the Theatres, which also adopted the sunshade image as the icon of the entire complex. That's the kind of cultural resonance that Atelier Ten aspires to on our projects.

“ The excitement of a smart group of designers thinking, sketching, and shaping a building together is infectious ”

**Eco:** Is there still tension between members of a design team? Is that a good or bad thing?

**PS:** Creative tension propels design. Great projects usually make a lot of hard decisions about how to edit out a host of good ideas in search of the few best ones; these same projects are full of passionate designers – from all disciplines – who fight hard to get their best ideas into the project. Without passionate discourse, these projects would never reach their

high level of architectural clarity and exceptional performance.

**Eco:** Are there any architects whose work you really admire, or is that not something an engineer should admit to?

**PS:** There are many architects whose work I admire. As I'm new to Australia I'm only now developing a critical opinion of designers here, so I will mention only folks abroad. In the US, Pickard Chilton architects are doing environmentally innovative and commercially savvy workplace buildings and campuses, almost entirely unheralded; Kieran Timberlake Architects continue to amaze and inspire with the beauty and technical sophistication of their work. The student architect/builders at Auburn University's Rural Studio inspire with the power of their architecture and the depth of their commitment to environmental and social justice.

In the UK, the late Rick Mather had an unmatched eye for austere elegance and a passion for high performance. It is important to acknowledge too the inspiration provided by engineers. Structural specialists Neil Thomas – principal of Atelier Ten's sister company, Atelier One – Chris Wise, and James O'Callahan – who designs all Apple store glass façades and stairs – blur the boundaries between art, architecture, science, and engineering with every project. And my partner Patrick Bellew, who

founded Atelier Ten, to this day inspires me with the brilliance of his thinking and the elegance of his design ideas.

Without passionate discourse, these projects would never reach their high level of architectural clarity and exceptional performance

**Eco:** What are the emerging trends in sustainable design?

**PS:** Healthy buildings, and more generally, the relationship between the built environment and public health,

has emerged from the shadows and is becoming a central design topic, at long last. We have much to learn about the consequences of our design and operational decisions on human health and vitality, but we are exploring these relationships more substantially and more holistically than ever before.

**Eco:** What are you most passionate about?

**PS:** Great design! And delivering that through close collaboration with talented, integrated teams of design colleagues.

**Eco:** What prompted you to join AIRAH – apart from CEO Phil Wilkinson, M.AIRAH, twisting your arm?

**PS:** Atelier Ten has always participated in and supported the professional organisations that support the work that we do. In the US and the UK, Atelier Ten participates in CIBSE, ASHRAE, AIA,

RIBA, IALD, and other organisations, and we hold leadership roles in both local and national chapters of the UKGBC – we were founding members – the USGBC, and IBPSA, the International Building Performance Simulation Association. Joining AIRAH here is a no-brainer; the organisation is doing great work to promote and support the design, building, and operation of a better and more sustainable built environment. ■

## Need to know

At ARBS, Paul Stoller will appear on the PD01 Panel: Adaptability of buildings for climate change.

For more information, or to register, go to [www.arbs.com.au](http://www.arbs.com.au)

He will also be speaking at the coming Melbourne Forum.

Go to [www.airah.org.au](http://www.airah.org.au) for more info