



Energy

PROJECT

Canberra Girls' Grammar School
Redevelopment

ARCHITECT

Cox Humphries Moss Richardson
Architecture

DESIGN TEAM

Graham Humphries, Rodney Moss,
Katharine Campbell, Natalie Coyles,
Don Gilson, Rob Morton, Paul Millwood,
Alexis Phillips, Eamon O'Donoghue,
Alexandra Purdon

FACADE ENGINEER

Murtagh Bond

PRINCIPAL GLASS CONTRACTOR

System Windows & GGA

PRINCIPAL GLAZING RESOURCE

Viridian

PRINCIPAL GLAZING

Double Glazed Units

Ext: 6mm Toughened Safety Glass
Viridian SolTech™

12mm Spacer

Int: 6.38mm Laminated Safety Glass
Viridian ComfortPlus™

DESIGN SCHOOL

Text - Peter Hyatt
Photography - Ben Wrigley

Re-development of Canberra Girls Grammar is a contemporary education showcase and demonstration by example of lively design connections. A strong, architecture based program has resulted in a highly transparent, responsive solution fully connected to its natural environment. Cox Humphries Moss Richardson Architects teamed with numerous contractors and suppliers including Viridian to create a far-sighted base building and masterplan.

CGGS provides two campuses for around 1400 students catering for local students and boarders from country and overseas. With the physical development of the senior school spanning more than 80 years, it was inevitable some of the older infrastructure was unsuitable for the school's changing needs.

Redevelopment of the Senior School Campus included: New entry "Hub" building - administration, reception, multifunction display/meeting area, new entry forecourt, new Central Quadrangle, new teaching/learning building, science facilities, internal roads and pedestrian circulation and landscape works.



The three level entry building was designed and oriented to address Melbourne Avenue and provide a major landscaped forecourt as part of the entry experience. The underlying principle of meeting place encourages the whole school community to interact in the normal course of daily life and function of the Hub building.

The central two-storey “foyer” gathering space provides natural orientation and visual clarity to the functional operation within the building. Views out to Parliament House provide an important link to the broader Canberra environment.

Peter Hyatt discusses the project with design director Graham Humphries of Cox Humphries Moss Richardson Architects:

What was your initial response to the design brief?

It started with a master plan for the whole school. It’s a relatively small campus compared to similarly sized private schools elsewhere in Canberra. It’s about a third the size of Canberra Boy’s Grammar. The 800 secondary students occupy what is a quite small campus area. The big issue was to consider the older buildings that date from the 1950s and complete a master-plan that allows for the school to be regenerated.

What does the new architecture need to address?

The demands on internal and external spaces and the functional relationships between facilities have substantially changed since the school was created in 1928. Community attitudes and standards have developed in relation to sustainability issues and access requirements along with higher standards for both building design and environmental performance. This is part of that major redevelopment program designed to provide state-of-the-art facilities for one of Australia’s leading private girl’s schools

What was the biggest test?

To create new facilities and that meant demolishing old facilities while the school remained fully operational. Because of the campus size we couldn’t afford to lose any more green space. The other issue was to create some sense out of a collection of buildings that had evolved along the path of least resistance rather than developing around a fully considered masterplan.

What contribution does glass make to the basic design premise?

The administration hub is the unifying element in the whole design. It provides

the forecourt and quadrangle that are key gathering spaces. This building is the new entrance for students, teachers and parents. It is about breaking down the barriers between all of those groups. It does this within the context of a glazed atria space with fabulous views out over parliament house, the distant mountains and eucalypts.

What did the design experience teach you?

I’m not sure that you can ever be fully prepared for the semi-chaos that ensues over 18 months when you have to tear down buildings right in the middle of a busy school. The new work was designed sequentially to decant the old admin building and accommodate the new hub building. There was a Domino effect of working within the confinement of an existing, fully operating site because of the need to carry out demolition with minimal physical and audible disruption.

What is the most obvious difference you’ve made?

We’ve created a front door to school. A useable forecourt makes far better use of the green space that existed at the front of the school. That space has been formalized



into a forecourt and optimizes the original topography. The internal roadwork has been rationalized and we've given the school a front door, a character to the school that never existed and an internal central quadrangle around which the library, drama, music and new teaching block can relate. They are two very dramatic changes to the school.

If it's the demise of learning by incubation and segmentation, is it the age of the open plan?

Clearly the trend is towards more open, communal spaces where students can interact. Staff and student barriers are being broken down and learning resources are much more evident and accessible. It's about creating spaces where students can educate themselves and glass can play an important role in creating privacy or opening up visual connections. Education has changed so dramatically. It is related to the experience at university which is more about learning rather than teaching. It allows students to learn and not necessarily for teachers to lecture. It's much less about chalk and talk and the spaces we create need to reflect that.

That whole idea of open learning is now much more than a catchphrase. It's a way

of doing. Glass is central to that idea of mediating and creating new opportunities.

The role of glass as an environmental moderator is becoming increasingly important. The issue of energy and energy conservation and the way it is being regulated means we have to be very careful. The blind application of section J of the building code for instance can create some great dilemmas about the use of glass that need to be overcome.

What are some of those problems?

Glass is such a universal, rapidly evolving material that it's inevitable that it is going to intersect with the advances in such areas as silicone sealants and digital technology. Transparency, translucence and opacity reveal glass as one of the most potent, flexible materials available.

If we recall the rise of modernism in the mid and late 20th century so many of the buildings really became these blank, featureless, boxes that damaged the original intent. What has led to the resurgence in glazing?

Improved glazing technology and types allows it to be used much more thoughtfully now with a far more careful layering and sensitivity. What and how it is used in one

application isn't necessarily right for another. The character of a building should draw a lot from its context and once you lose context you can lose identity. Like any material, glass needs to be properly understood.

What are the administration hub's most and least satisfying experiences?

The most satisfying is the dramatic effect through the manipulation of a number of buildings to bring about such a transformation. The least is that we can't condense it all into a shorter time frame.

There is an attitude with glazing that is much interested in filling a hole in the wall.

Definitely. It's crucial that the character of glass from that totally opaque to invisible needs to be explored in design terms that can make a building gleam and sparkle. That ability to add a quality to the interiors as well as facades can be exploited into the overall effect. It can imbue a building with a highly thoughtful quality entirely fitting for that place and purpose.

How do you recognize failure if you never make mistakes to learn by?

How do you answer that? We all make mistakes, there's no getting around it. The important thing is that you learn by



those mistakes. You need an awareness and architecture isn't a single person's sport. There are so many disciplines and regulations - even before you begin talking to your client. Your next building is always going to be your best building. You learn with every building you do and the team's that come together for these buildings the need to adopt that approach and bring together the collective experience of all for the benefit of everyone else. Unless you have that attitude then the next building isn't going to be your best and that learning process isn't going to occur.

Are you satisfied with its energy response?

We've shaded it very effectively. There is also a strong focus on the glass in terms of heat gain. It is extremely well shaded and in winter the double-glazing acts as a very efficient thermal container. We were mindful that the building should be energy efficient to run.

What support did Viridian provide?

Compliance with section J in terms of glazing is quite onerous and it's not very helpful in achieving decent architecture or effective energy solutions. Working with Viridian and engineers who can specifically address and calculate the performance possible you can do far better than section J. Viridian is very good at that sort of support.

Was it as simple as maximizing light and optimizing space or did you search for that other invisible dimension that brings spaces alive. There isn't a ready formula for that is there?

That's right. We made it a part of the brief by pointing out how it could solve many other functional issues that the school had and made it more than basic administrative functions. Breaking down the traditional barriers that inhibit integration created the brief which was more than the initial functional requirement.

How do you future-proof and make your designs as fashion resistant as possible?

Honesty. Always respect the functionality and ensure that the building works as much from the inside out as the outside in.

What have you brought to the administration hub that a non-architect wouldn't have done? Like all good architecture isn't it really about the nuances and details?

I would say organisation. We established order and identity for the school and that sets in train a planning structure that the rest of the school can follow. You could have the new Hub building in a different planning relationship and you would lose all of that. We've given the school some character and logic that it lacked. It's also about understanding priorities.

How are changing technologies affecting your design?

The access to digital information is so dominant and the whole attitude towards libraries and learning is changing everyday. Five years ago it was a case of where we put our wiring. Now everything is wireless.

One of the big challenges for educators and architects is to humanize rather than institutionalize. In this context glass can be friend or foe. It doesn't automatically bestow some magical quality all on its own. It requires careful interpretation.

Very much so. In the science building now underway the use of natural light is most desirable in the learning spaces, but there is the issue of privacy during classes and there are also storage problems. To deal with this we're developing a glazed display system that forms windows that will also store laboratory equipment. Such a use performs valuable multiple roles. It permits natural light, visual connection and an opportunity to modify that within those display cases and it is glass that creates such an opportunity.