CLASSROOM TO CAMPUS:

The heritage of modern education

PAPERS

INTERNATIONAL SYMPOSIUM
26–28 NOVEMBER 2012

Editors
Hannah Lewi and Cameron Logan

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Symposium Convenors
Hannah Lewi and Cameron Logan

Co-convenors and Committee
Kate Darian-Smith
Philip Goad
Julie McLeod
David Nichols
Julie Willis

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CONTENTS

SYMPOSIUM SCHEDULE

Monday 26 November

6.00pm

KEYNOTE ADDRESS

David N. Fixler
EYP

'Innovation becomes Tradition: Modern Architecture as Institutional Heritage in America'

Presented in partnership with the Heritage Council of Victoria

Tuesday 27 November

9.30am

WELCOME
Julie Willis
University of Melbourne

Hannah Lewi
University of Melbourne

The key themes and issues of the symposium will be introduced, followed by a short screening of extracts from two documentaries made by the Victorian Department of Education: "Theirs is Tomorrow" (1952); and "Building for Learning" (1959).

10.30-11.00am Morning Tea

1100-11.30am

Elain Harwood
English Heritage
'Surveying Post-War Schools in England'

Chair: Julie Willis

11.30-1.00pm

EDUCATING AUSTRALIA: STATE SCHOOLS AND A NATIONAL UNIVERSITY

Chair: Julie Mcleod

Phil Griffiths
Griffiths Architects
'Surveying Post World War II Government High Schools in Western Australia'

Michael Kennedy
Architect
'Documenting Queensland Schools'

Sheridan Burke and Rachel Jackson,
Godden Mackay Logan
'Australian National University: Developing Heritage Principles and Putting them into Practice'

1.00-2.00pm Lunch

2.00-3.15pm

LANDSCAPE AND THE MODERN CAMPUS

Chair: David Nichols
University of Melbourne

Andrew Saniga
University of Melbourne
'Landscaping the Australian Campus'

Adam Mornement
Lovell Chen
'South Lawn: conserving a pioneer landscape'

Stuart King
University of Tasmania
Christ College and the Significance of the Campus Landscape

3.15-3.45pm Afternoon Tea

3:45-5.00pm

CONSERVATION AND THE CHANGING CAMPUS

Chair: Philip Goad

Peter Elliot
Peter Elliot Architecture and Urban Design
'Host Campus + Host Architecture'

Paul Morgan
Paul Morgan Architects
'Newman College and the Problem of Original Design Intent'

Stephen Turner
Gray Puksand
'Old Buildings and New Typologies'

6:00pm

KEYNOTE ADDRESS

John Allan
Avanti Architects

'Learning and legacy – the British experience'

Macgeorge Lecture

7.30pm Dinner – Café Italia

Wednesday 28th November

9:30am

THE CULTURAL HERITAGE OF EDUCATION IN AUSTRALIA

Chair: Kate Darian-Smith
University of Melbourne

Deborah Tout-Smith
Museum Victoria
'School Life in Exhibitions at Museum Victoria'

Judy McKinty
Cultural Heritage Interpreter and Children's Play Researcher
'The Hidden Heritage of the Schoolyard'

Nikki Henningham
University of Melbourne
'You know that building under the King's Way Bridge?' Oral History and the redevelopment of J.H. Boyd Girls' High School.

11:15-11.45am Morning Tea

11:45am

MODERATED DISCUSSION: DESIGN, EDUCATION AND CONSERVATION

Chair: Cameron Logan
University of Melbourne

12:45pm Lunch

1:30pm Tour

- **Main Quad, University of Melbourne** – Adam Mornement, Lovell Chen
- **Newman College** – Gabrielle Moylan, Arthur Andronas Conservation Architecture
- **Ormond College** (Mcfarland Library and Picken Court) – John Lee, McGlashan Everist
- **Princes Hill High School** – Philip Goad, University of Melbourne

FROM CLASSROOM TO CAMPUS: INTRODUCTION

ASSOCIATE PROFESSOR HANNAH LEWI AND DR. CAMERON LOGAN

The realisation of campuses at all educational levels was central to the process of modernisation in Australia throughout the twentieth century. Many school and university campuses – as collections of institutional buildings sited in consciously landscaped and defined spaces – vividly illustrate innovative ideas and models in Australian architecture, planning, education and landscape design. At the beginning of the 21st century, however, schools and universities are being rapidly transformed by changing educational expectations and political priorities. As a result, some of the legacies of modern design and educational use are fast disappearing.

In 1997 the architectural commentator Robert Maxwell wrote of his amazement at how many examples of modern construction are now at risk of falling down or being demolished because of physical defects, real and perceived. Looking at university buildings in particular Jon Buono has recently noted that “the persistent demand for state-of-the-art facilities” has encouraged the perception among decision-makers that most overtly modernist buildings on campuses are irrevocably outmoded. In the face of this clamour for state-of-the -art facilities Maxwell has bravely suggested that if there is overall merit in conservation we should embrace perceived “defects.” Conservation should not be seen as an apathetic, economic alternative to replacement, but rather as a deliberate way of recognising and understanding modern architecture’s “value as a record of a quest, as part of a historical and cultural development that is crucial to our own identity”.

In both design and education the 20th century witnessed examples of optimism, experimentation and social idealism that still possess surprising currency but can also now appear misguided or naive. To understand and enjoy the spatial and social qualities that inhere in that legacy demands careful consideration of what was intended and how it was understood and used. Moreover, the best campus environments and educational buildings should be carefully conserved even if keeping them involves embracing some defects.

This symposium, which included public lectures by leading international conservation practitioners, plenary talks by historians and educationalists, as well as panel presentations and themed roundtable discussions, explored the historical documentation, conservation and potential heritage values of once modern and now ageing educational campuses in Australia and around the world.

The event brought together practitioners from heritage, architecture, education, planning and landscape spheres, alongside researchers and policy-makers. Lectures and workshop sessions encompassed broad consideration of heritage values, beyond the aesthetic and stylistic, to include aspects of planning and landscaping, construction, educational reform, along with the social values connected to classroom and campus use and memory. Topics of discussion and debate included:

- How to promote sympathetic and nuanced engagement with extant modern campuses as an institutional responsibility of stewardship, while acknowledging the real pressures of institutional development, renewal and branding through design.

- Strategies for broadening heritage consideration, documentation and evaluation to include the more intangible histories and associations of memories around the social and transformative experience of learning.

- Strategies for considering the campus as a crucial urban and suburban site that is porous and impacts upon local community contexts as well as architectural cultures.

The papers collected here are short summary versions of what was presented at the event. As such it is a partial record of the proceedings but provides, we think, a vivid picture of the ideas presented and the range of concerns that characterised the two days of discussion.

LEARNING AND LEGACY – CONSERVATION AND RENEWAL IN THE UK EDUCATIONAL ESTATE

JOHN ALLAN, AVANTI ARCHITECTS

This lecture outlined the political and social context of modern architecture in Britain and the progress of its conservation, with a focus on the education sector: schools and universities built in the post-war decades including, for example, the radical Hertfordshire and CLASP schools progammes and the so-called “plateglass” university campuses of East Anglia (1963); Essex (1964/5); Kent (1965); Lancaster (1964); Sussex (1961); Warwick (1965) and York (1963).

Attention then turned to the consideration of these modern educational buildings and estates as “heritage”, noting that of all post-war building types in England to have been considered for statutory protection, the largest number of listings to date has been in the education sector – some 18% of the total. But this programme of education-related heritage designation and conservation has not come without controversy and complex questions surrounding extant buildings’ future viability and ‘fitness for purpose’. Key issues to be confronted here include: deterioration through lack of maintenance; increasing non-compliance with current standards and environmental underperformance; image problems; changing pedagogical demands; new procurement culture; and ultimately heritage recognition as such.

Two notable cases in point, that faced such issues without successful resolution, included Pimlico School (London) proposed but rejected for listing and subsequently demolished, and the detrimental impact on Elliot School (London) of adjacent development - ostensibly to generate restoration funding but significantly depleting the campus amenities.

The discussion then examined a series of case studies comprising schools and university projects demonstrating the transformational effects of balancing conservation, upgrade and adaptation in the education sector to produce sustainable outcomes for an extended future. That these projects had primarily been motivated by factors other than conservation *per se* - including considerations of investment and return, social and operational continuity, locational identity, embodied energy aspects and better control of risk – had not excluded the substantial enhancement of heritage values.

University of East Anglia

Pimlico School (London)

CASE STUDY 1: HAGGERSTON SCHOOL, HACKNEY, LONDON (1962-7) DESIGNED BY ERNO GOLDFINGER FOR THE LONDON COUNTY COUNCIL.
Avanti Architects were engaged as part of the LB Hackney "Building Schools for the Future" programme for the refurbishment and technical upgrade of the original buildings, and also the introduction of additional accommodation within the campus plan to cater for curriculum development and the increase in pupil numbers from becoming co-educational. This case shows how a 40 year old school can be successfully transformed to meet 21st century aspirations and needs within a tight budget. It also illustrates how a balanced approach and careful prioritisation of limited expenditure can make significant impact on both the technical performance of degraded school buildings and on the educational environment as a whole, whilst still honouring and enhancing the original design.

CASE STUDY 2: JESUS COLLEGE, CAMBRIDGE – NEW NORTH COURT (1965), DESIGNED DAVID ROBERTS.
New North Court was immediately recognised as an innovative and highly ingenious plan, which re-invented the traditional 3-storey Oxbridge college residence typology and provided every student room with its own balcony. However this heritage-listed building needed radical reconfiguration to provide ensuite accommodation with upgraded environmental servicing. Meanwhile the shared communal facilities, called 'gyp rooms', were relocated from the internal building cores into the underused storage rooms with a ground floor courtyard outlook. The finished result has transformed the building in every respect except its exterior appearance which remains almost identical to the original listed design.

CASE STUDY 3: SHEFFIELD UNIVERSITY LIBRARY (1959) DESIGNED BY GOLLINS MELVIN WARD.
The library at Sheffield was the first stage in this University's major post-war expansion, initiated by an international competition won in 1953 by Gollins Melvin Ward. It was listed as Grade II* in 1993. However after half a century of intensive use, the building was tired and becoming unfit for purpose in terms of functionality and comfort. A Conservation Plan undertaken by Avanti assisted in informing architectural solutions and reaffirming the original value of the building. The scope of works that followed this study included re-design of the entrance foyer; creation of a new mezzanine exhibition area; restoration of the Catalogue Hall; provision of additional study carrels in the internal stack areas; replacement of defective glazing; upgrading of services and other fabric repairs. The outcome has wholly restored the building's identity and prestige and transformed user morale.

CASE STUDY 4: LEEDS UNIVERSITY LISTED BUILDING MANAGEMENT GUIDELINES (LBMG)
The major series of buildings undertaken by the architects Chamberlin Powell & Bon for the University of Leeds over a period from the 1960s to the late 1970s was listed in 2010. Therefore any building works that would affect the buildings or their setting are subject to the provisions of the Planning Act 1990. In this project Avanti Architects was accordingly commissioned to produce a campus heritage management strategy. This established an evaluation platform built on historical data, and an identification of key elements of 'significance' that could provide a roadmap for guiding future works and day-to-day management of the estate. This instrument thus allows for necessary change while safeguarding the heritage value of the listed asset.

Haggerston School, Hackney, London



Jesus College New North Court


Sheffield University Library

CASE STUDY 5: ST PETER'S SEMINARY, CARDROSS, SCOTLAND

The final case is the remarkable St Peter's College commissioned by the Archdiocese of Glasgow for the training of young Catholic priests, designed by Gillespie, Kidd and Cola and opened in 1966. The complex consists of several distinct but related buildings, closely influenced by Le Corbusier's monastery at La Tourette, with an extensive landscaped estate. In 1980 the seminary closed and fell into increasing dereliction. Avanti Architects undertook a Conservation Assessment of the Category A heritage-listed complex, and is now working on a new rescue project initiated by the Glasgow arts charity NVA, which proposes an educational and recreational model of adaptive re-use. The project faces a range of daunting challenges - technical, financial, social and environmental – but seeks to overcome the decades of neglect through a carefully phased programme of rehabilitation and renewal that will re-connect the site both to the local community and a wider audience thereby extending its rich heritage values in a continuing narrative of learning and recreation.

CONCLUSIONS

The lecture concluded with some reflections on the lessons of evidence. In the developing discourse on modern conservation (at least in the UK) emphasis is continually placed on statutory designation and heritage advocacy as the primary means of advancing the cause. Yet as the case studies demonstrate it is a wider range of more 'secular' drivers that generally mobilise such projects – benefits of retention of embodied energy, operational continuity, environmental sustainability and better value for money. By habitually invoking heritage values as their main objective conservationists often overlook the more persuasive arguments that good case studies can offer. The buildings and campuses cited have all been, or in St Peter's case will be, revitalised to sustain new patterns of learning for the 21st century, demonstrating that the technical challenges can almost always be overcome by design and ingenuity. Yet in every case this has been achieved in ways that also extend original heritage values. This suggests that the real obstacles to furthering the conference objectives are not technical but political and cultural; and that the resistance to beneficial re-use of our modern educational legacy is not design inhibition but a residue of prejudice and ingrained habits of thinking and action. Time and again the assumption that these sorts of buildings cannot be redeemed by transformative design or the intelligent application of limited funding is shown to be disproved by the evidence of worked examples. Too often in the consideration of recent architectural heritage the problem is thus posed in terms of an alleged choice: *either* to meet the needs of future generations, *or* alternatively to 'stop the clock' and save a historical (modern) relic that at best may appeal only to a few historians and MoMo specialists. But in many cases this stems from either ignorance or laziness – ignorance of what is technically possible, or laziness in refusing to think more imaginatively of ways of assimilating *both* objectives.

This surely applies to the education sector, as much as any other. The challenge is surely to find a sustainable balance between the preservation of buildings and spaces by which educational institutions are recognised and remembered, and the constant pressure for renewal that must be served and assimilated if the progressive functions of universities and schools are to be sustained. The best antidote to scepticism is evidence, and the case studies above - as well as the many other brilliant examples presented at this conference - demonstrate the fallacy of regarding the issue of preserving or replacing the architecture of the recent past as an inevitable choice between heritage or progress. They all achieved *both* preservation *and* renewal.

In short, not learning OR legacy – but Learning **AND** Legacy.

Leeds University

St Peter's Seminary, Cardross

INNOVATION BECOMES TRADITION – MODERN ARCHITECTURE AND ITS REHABILITATION AS INSTITUTIONAL HERITAGE

DAVID FIXLER, EYP

Modern architecture was introduced to the American public through the 1932 “International Style” exhibition curated by Henry-Russell Hitchcock and Philip Johnson at the Museum of Modern Art in New York. This event, which also inaugurated the Department of Architecture and Design at the Museum, sought to reach not only individuals, but also the corporate, institutional and academic leaders who would be necessary to establish the legitimacy of modernism as an architectural expression. By the late 1930s, leading American Schools of Architecture such as Harvard, MIT and the Illinois Institute of Technology sought to enhance their credentials as modern institutions through association with some of the pioneers of European modernism such as Walter Gropius, Alvar Aalto and Mies van der Rohe, respectively. Each of these architects brought a very different attitude toward architecture as aesthetic, expression of program and technique, and their works consequently raise very different issues when faced with rehabilitation.

Gropius focused issues of standardization and mass production and Mies set about perfecting a unique expression of structure and space, both of which often led to programmatic fits that were tightly tailored to a particular architectural idea or form that has proven difficult to adapt as space and performance standards have changed over the years. Aalto on the other hand focused more on importance of human experience and how it influences our interaction with buildings, and consequently in Baker House, his project for a residence hall for MIT he has – whether knowingly or not – created a work that continues to resonate with its users in such a way that little program change beyond those adjustments necessary to meet modern building codes and create some student activity space were necessary to maintain its position as one of MIT’s most successful residence halls. In addition, Aalto chose to detail his work in a material vernacular utilizing water-struck brick, stone and wood windows (with limited use of exposed concrete) that spoke directly to local tradition. This has enabled Baker House to acquire a pleasing patina and to age far more gracefully than many of the more lightweight, synthetic and/or experimental materials that were often associated with modern construction and have caused many notable failures in recent decades.

Nonetheless the building required substantial work, but the effort was able to focus on restoration, and performance enhancement through the replacement and installation of new building systems. In addition the design team was charged by the MIT community with uncovering the history of the design and Aalto’s intent for the building, and to determine whether and how this information might color the objectives of the renovation. Several design features that had not been implemented for a variety of reasons were analyzed and weighed for possible inclusion in the project. In each case, the value of the intervention as something that would reinforce or detract from the value of the work as institutional heritage was an important factor – along with functional value and aesthetic enhancement – in the evaluation. Several exterior and interior interventions were investigated.

Baker House. Exterior from north showing new accessible ramp and re-coated north stair

View of dining commons with raised balustrade and wood ceiling

The first and most functionally necessary of the issues concerned modifications to the main dining space – Aalto's public space "jewel" within the setting of the residential slab. Code and performance required modifications to the space could be accommodated using designs for the ceiling and balcony railings based upon unexecuted original concepts and details found in Aalto's sketches and the construction documents. This was one of a series of discoveries that prompted a debate on how the interventions should in general be perceived; ie., whether to try to extend Aalto's vocabulary (and how), or to develop a language that was deliberately contemporary and meant specifically to contrast with the original work thereby dispelling any potential ambiguity concerning authorship. In the end, it was determined that any more deliberately contemporary intervention would be potentially awkward and soon appear dated, and the subtle and comparatively timeless elegance of the original work led to a general decision to extend the spirit and language of the original vocabulary. In the specific case noted here (and factoring in addition the living memory of Aalto's assistant in charge of this work in construction) to incorporate the unexecuted concepts, with strategic modifications to the details to both distinguish its provenance and optimize the retention of original fabric.

Another issue of original intent prompted an interesting debate particularly about the value of original fabric as institutional heritage. Initially many assumed that the stucco on the great wall of the north stair was failing, and took this as an opportunity to advocate for the replacement of this material with the terracotta tile system originally advocated by Aalto. Our investigation however revealed that the stucco was in fact in very good condition, needing only minor patching, hairline crack repairs and a skim top coat to retain full serviceability. Following considerable aesthetic study and technical evaluation, it was agreed that conserving the stucco was preferred both on technical grounds and on the value of the original stucco wall as a component of institutional memory.

The emphasis here is that there is both opportunity and risk in working with the extensive documentation and living memories that often attend iconic modern structures. There were many on our Advisory Committee who ardently took the side of the creator in evaluating project design decisions, seeing this as a unique opportunity to "complete" the master's work – maximizing the conceptual essence over the historic substance. In the end most of these strategies were rejected in respect both for the natural history and cultural associations of the work as it was completed, but also in recognition of Aalto's own, often unspoken example when faced with a difficult design problem to err on the side of maximum restraint. Nevertheless, the process of discovery, analysis, design and debate that was employed in evaluating all of the interventions at Baker House revealed diverse attitudes toward aesthetics and memory as they inform the interpretation of a significant work of architecture that continue to particularly inform the debate on how best to sustain modern heritage.

1949 Aerial of Baker house

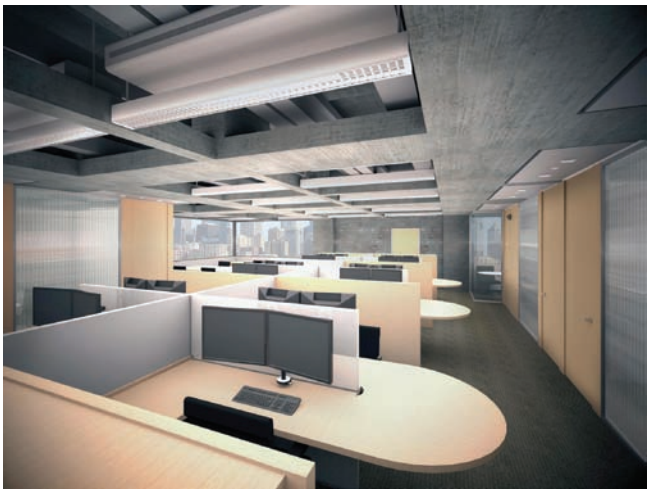
Built out basement area for in-house library/study

Louis Kahn was arguably the most important American architect of the later 20th century, and one of the greatest of the generation to immediately follow the early modern masters. The rehabilitation of his Richards Laboratories poses a very different and more difficult problem than that posed by the renewal of Baker House. Widely recognized as a modern work of the highest significance, it has in fact never worked for its intended purpose, and is generally disliked by its present users. The renovation is meant therefore to transform the building from a bio-medical "wet lab" facility into a center for cognitive neuroscience which relies primarily on electronic equipment for testing and research. The University of Pennsylvania has taken the unusual step for an American institution in having Richards designated a National Historic Landmark, and charged the design team with effecting the transformation and improvements to the building within the strict guidelines attending this status. The exterior is being meticulously restored. However, in the interest of safety and building performance, the very large sheets of original ¼" polished plate glazing (many of which have broken over time) are being replaced with a monolithic (to ensure that it will fit within Kahn's original stainless steel framing system) laminated safety glass with an interlayer that will cut down glare and solar heat gain without affecting the appearance of the glass.

In order to achieve the level of building performance mandated by the University and the new program, the mechanical systems had to be completely re-designed, but in such a manner as to maintain fidelity to Kahn's original design intent – in which the systems are mostly exposed and highly organized with a rigorous logic. The routing and appearance of the all of the building systems – ductwork, chilled beams, lighting, electrical conduit and cable tray, piping, etc., therefore became part of the architecture. The design process in this instance was greatly facilitated by Building Information Modeling (BIM) which enables the construction and visualization of a virtual 3-D model of every component of the building in order to ensure that each piece of a very complex puzzle fits together prior to construction.

The third major component of the renovation involves the invention of a new interior partition system with which to build the new program. Richards' significance lies in its expressed structural system, building services and distinctive exterior massing and envelope – not in its interior partitioning system. Kahn's ideal for Richards was to have the small but highly glazed laboratory floors open – like design studios – imagining that scientists worked much in the manner of artists and architects. This in fact did not turn out to be the case – and the spaces as they were subdivided along the lines of the exposed Vierendeel truss members were never of the right size, lighting and configuration for their intended purpose. In response

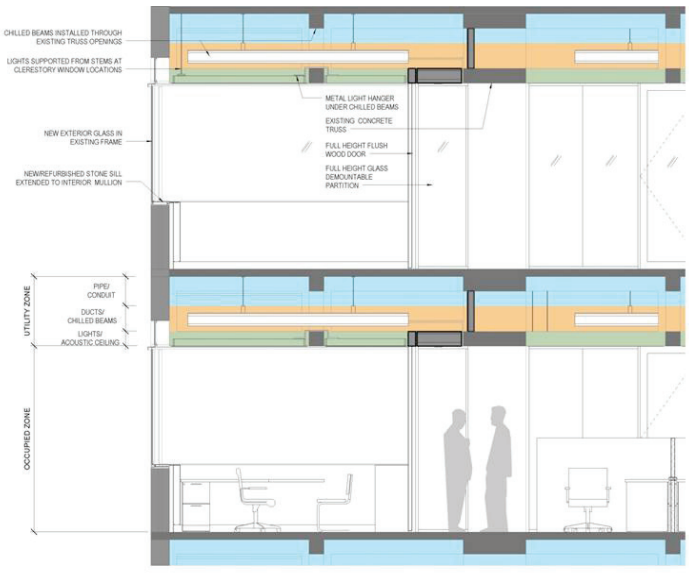
Richards Medical Laboratories. Original 1965 photo from Hamilton Walk



Computer rendering of open office and new partition layout showing off-structural grid condition with ceiling closure

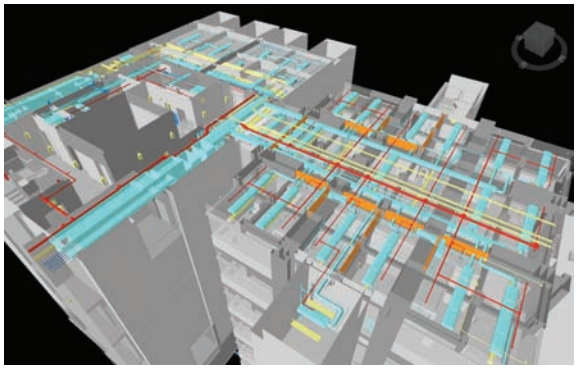
to this mandate a kit of parts was developed utilizing materials and motifs sympathetic to Kahn's sensibility. The result in a system utilizing a steel frame that recalls the pewter finished stainless steel break-metal of the exterior window frames infilled with panels of glass or wood that fill the full space between the floor and bottom of the trusses.

These examples illustrate two very different approaches to the preservation and enhancement of modern institutional heritage. In the case of Aalto's building the mandate was to restore and enhance a functional and beloved component of MIT's culture. At Penn however it is necessary to affect a substantial internal transformation of the internal workings of the building in order to accommodate both contemporary demand and – perhaps more importantly – to increase its value to a larger cohort, beyond those affiliated with the visual arts and a small cadre of aficionados, within the Penn community. In each instance however calibrating the nature of the interventions from a design standpoint – the idea of an evolution of the architect's inherent design sensibility is successfully utilized to affect change that is sympathetic to but clearly a new extension of the original work.



D TOWER SAMPLE SECTION LOOKING EAST

Navisworks computer study of systems routing in renovated spaces according to Kahn's original logic



This image indicates how the systems are stratified and meant to be run within the space system

ENGLISH SCHOOLS 1945-1990

ELAIN HARWOOD, ENGLISH HERITAGE

At the end of WWII schools were in such short supply because earlier shortages had been compounded by wartime bombing, a relocation of population and a fast-rising birth rate, that prefabrication was recommended by the Ministry of Education as a necessary solution. This found fullest expression in the 1940s at Hertfordshire, a small authority north of London, where to the existing problems were added thousands of young incomers from London attracted to new estates and the Government's new towns. The Hertfordshire building program, mainly of primary schools, was begun in 1947 with Burleigh School, Cheshunt, and exemplified in 1949-50 by Templewood School, Welwyn Garden City.

A team of young architects worked closely with education officers to create light, bright schools from first principles with the needs of the small clients reflected in the low window sills, specially-designed furniture and murals. The staggered plan that allowed windows to two sides of each classroom, the woodland setting and no less than three murals makes Templewood exceptional, but it was just one of 22 schools built in Hertfordshire in 1949-50.

Ideas on prefabrication were developed further when many of the Herts team, led by the Deputy Architect Stirrat Johnson-Marshall, moved on in 1948-49 to work for the Ministry of Education. Johnson-Marshall set up a development group dedicated to building model schools that tested new systems and ideas on planning for the county architect's departments to follow. The first of these was St Crispin's, Wokingham, Berkshire, designed by Mary and David Medd from Herts and featuring murals by Fred Millett that have recently been recovered and restored. St Crispin's was a secondary modern school, a new type of secondary built after 1944 for those who had failed to get into a grammar or other more highly regarded school. As well as adapting a version of the Herts prefabricated steel system to multi-storey use, St Crispin's offered an informal plan with large single-storey areas devoted to crafts and vocational training.

A later school, in 1956, at Amersham, Buckinghamshire, suggested how traditional brick construction might be used economically in making special provision for junior school children. This was taken further at Eveline Lowe School, Peckham, designed in 1964-66 on more open-plan lines so that wider age-ranges of children could share classes and teams of teachers where appropriate.

Templewood School, Welwyn Garden City, Herts, 1949-50 by Hertfordshire County Council Architect's Department, job architect A. W. Cleeve Barr (Photograph: James O. Davies, English Heritage)

Chilwell Comprehensive Lower School, 1974-76 by Notts County Council (Photograph: Elain Harwood)

Meanwhile one authority had achieved a breakthrough in system building denied the Ministry. Nottinghamshire faced huge problems of subsidence, thanks to the coal being extracted from below schools in large parts of the county. A lightweight, prefabricated steel school on shallow, pin-jointed foundations offered a solution, but to achieve economies of scale the county offered the design to other authorities with a similar problem. Together they formed the Consortium of Local Authorities Special Programme, whose initials gave the system its name, CLASP. The first CLASP school was Bancroft Lane Primary School, Mansfield, opened in 1957, and a series of refinements to the system followed into the 1990s. A good example of the metric CLASP Mark 5 is the Lower School at Chilwell Comprehensive, built in 1974-76 to give the younger children entering a large comprehensive their own building and sense of identity away from the bigger students. It survives as a sixth-form centre.

Some authorities made relatively little use of systems. These included the London County Council, where very large comprehensive schools were built on tight sites, making long, tall slabs essential. The best example of these is perhaps Elliott School, Putney, of 1953-56, with a mix of contemporary-style tilework, wavy roofs and curved balconies. The same plan on a slightly smaller scale was also adopted for 'county complements', London's answer to secondary moderns in areas where covenants on an existing grammar school prevented the building of a comprehensive. A good example is Rutherford School, 1958-60, by Leonard Manasseh is which has recently been refurbished rather well as the new, high-profile King Solomon's Academy with a mix of public and private funding.

The LCC and its successor, the Greater London Council, was also a leader in the building of special schools for the mentally and physically disabled. Bromley Hall, primarily for children aged 4-16 in wheelchairs, was a series of linked pavilions built in 1967-68, each one top-lit and with their own outdoor space. London was large enough to build a great variety of schools, with different groups of architects following separate lines of inquiry; here the job architect, Bob Giles, was much impressed by Arne Jacobsen's Munkegård elementary school of 1948-57.

Small education authorities could sometimes give all their school building work to a consultant, as Ipswich did, employing Birkin Haward from 1946 to its dissolution in 1974, when the borough was absorbed into Suffolk County Council for education purposes. Haward's first schools were long, wriggling designs using an element of system building, before he adopted the compact plans

DP138284, Rutherford School, now King Solomon's Academy, Westminster, 1958-60 by Leonard Manasseh for the LCC (Photograph: James O. Davies, English Heritage)

DP059395 is Pimlico School by the LCC Architect's Department, job architect John Bancroft, 1964-70, demolished (Photograph: James O. Davies, English Heritage)

being developed by Hertfordshire and the Ministry of Education. A good example is his Sprites Lane of 1956-59, where hyperbolic paraboloid roofs admitted large amounts of natural light through high clerestories. Later, at nearby Gusford School of 1960-62, Haward introduced his own simple system of concrete posts and timber cladding on an exacting grid module, and later still, at Halifax School in 1968 developed deep open plans.

Leicestershire County Council also developed open planning in the 1960s, using its own Architect's Department and a variety of consultants to create a series of primary schools, centred first on a hall but increasingly on a library. Some adopted plans of hexagonal classrooms or were circular, notably Middlefield School, Hinckley, built in-house in 1968-70. These ideas also informed a small group of secondary schools in the late 1960s. Leicestershire had a novel system of comprehensive schooling devised as early as 1956, whereby the old secondary moderns were adapted as high schools for 11-14 year-olds and the better-equipped grammar schools became upper schools or colleges for those staying on to sixteen or eighteen. Three new upper schools designed in the late 1960s at Desford, Countesthorpe and Syston offered facilities for these older children and for adult education set around large halls and learning resources, with large open-plan areas for science and particularly for crafts. The results are more like higher education colleges than schools, in which sculpture in particular played a large part at Desford and Countesthorpe.

Some of these ideas were developed further as reaction to building systems set in during the 1970s, notably at Hampshire, where schools began to address problems such as energy efficiency and to be deliberately one-off designs again. Such schools as Yateley Newlands, from 1978-79 and Fleet Velmead, by Michael and Patty Hopkins from 1984, deep plans with a central glazed atrium or spinal corridor, are still influential on school planning today.

DP137505, Fleet Velmead School, Hampshire, 1984 by Michael and Patty Hopkins (Photograph: James O. Davies, English Heritage)

DP138305, Countesthorpe College, Countesthorpe, Leicestershire, 1968-70 by Farmer and Dark for Leicestershire County Council (Photograph: James O. Davies, English Heritage)

SURVEYING POST WW II GOVERNMENT HIGH SCHOOLS IN WA

PHIL GRIFFITHS, GRIFFITHS ARCHITECTS

The survey grew out of an understanding of expanding education requirements arising from changes in education practices, demographics, building condition, anticipated changing demand, demand for high school expansion, and a building replacement program and the potential impact of these drivers on post WW II government high schools. Some nine school closures had already taken place and several of these schools had been demolished or divested for other education purposes.

After WW II there was a great impetus to expand secondary education in the face of post war economic recovery in the mid-1950s due to immigration, population increase and changes in education policy to accommodate more students in secondary education and increase retention.

The study was conducted to determine the common characteristics of the schools produced during the 1950s and 1960s, also to determine whether any of the remaining schools displayed evidence that might have significance in terms of the Government Heritage Property Disposal Process (GHPDP) and whether any further action was required arising from the GHPDP.

The study looked at all government secondary schools still in government ownership and still functioning as high schools. Some very fine schools that had been sold out of the government system were not captured by the program.

Broad thematic studies on education buildings had already been completed and this study developed upon them with focus on the post WW II buildings. Historic research was concentrated on the government's own comprehensive archive and each school was visited and documented.

All of the schools used the same planning system and site conditions determined whether the design was to be single, two or three storey solutions. The plan form was always based on an 'H' plan and the long wings were almost infinitely extendable. Two storey was the most common form, striking a balance between allocated land and anticipated student numbers. Only one school was developed as a three storey solution.

While all government designed schools were expressed in a simple post WW II International style, private commissioned architects broadened the range to include Brutalism, Mediterranean and Perth Regional styles, many of them quite well resolved designs.

Hampton High School. Architects: Forbes and Fitzhardinge

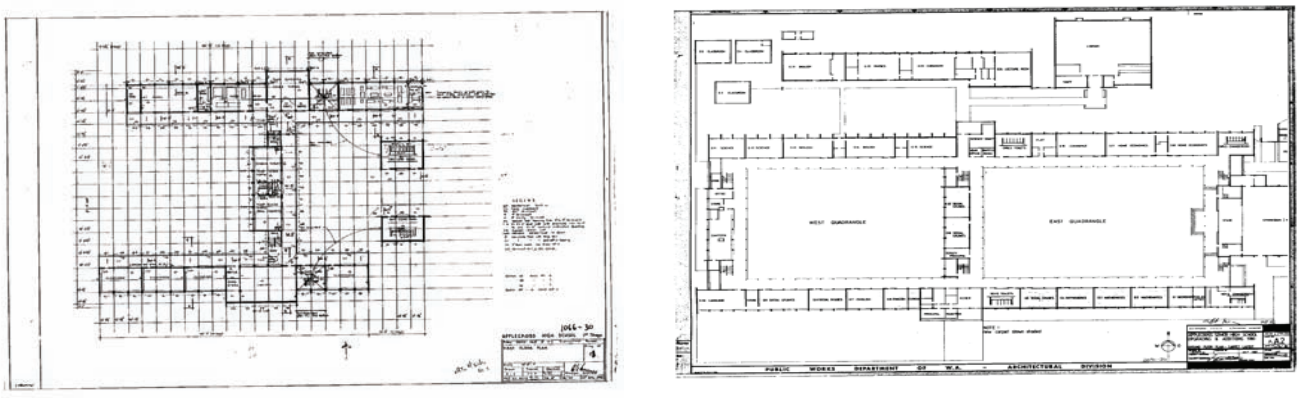
Armadale High School. Architects: Public Works Department

Cyril Jackson High School: Silver Fairbrother & Associates

Brief assessments were prepared for all schools and a chart developed to summarise heritage values across the spectrum. Five schools that scored highly on all values were identified for assessment and in due course most, but not all, were assessed for inclusion in the State Register. Since delivering the paper at the 'Classroom to Campus' symposium, the last of the schools has been put into the State Heritage Office assessment program.

On reflection, it would have been a more complete program if all schools had been assessed, regardless of present ownership and it would have delivered a more complete picture in heritage terms. Since the program was designed to assist a specific program and not capture a whole typology, the outcomes were quite reasonable. It is open to anybody to nominate places that were missed for assessment, though no further nominations have been received to date.

Balcatta High School. Architect: Marshall Clifton



H Plan

METROPOLITAN HIGH SCHOOLS – INDIVIDUAL DATASHEET

HCWA #	N/A
Place Name Other name(s)	Armadale Senior High School
Location	169 South Western Highway, Armadale
Listings	
No listings	
PHYSICAL EVIDENCE	
Date of Construction	1956
Architectural Style	Post World War Two International Style
Description	The school is set in open grounds on a site that falls away from the South West Highway in the east, to the west, with simple landscaping comprising grassed playing fields, paved surfaces, and plantings of native and exotic trees and shrubs. The site has been benched on two major levels to accommodate the large school footprint, on the eastern side of the site, and then again its mid point. It has been filled in the west. Plantings around the grounds are predominantly natives, with exotics in planting beds close to the buildings. Armadale Senior High School is a State Government Senior High School comprising General Purpose Teaching, Science Block, Trades Block, two Gymnasia, Library, Pre-vocational Block, and Stage Courtyard. The mid 1950s and 1960s stages of the school are planned around two open ended quadrangles on the eastern side and three on the west. The pattern of development adheres broadly with the general pattern of development of schools of the period, in particular with Bentley. Later minor developments depart from the pattern and the architectural expression of the later period differs markedly from the pattern established in the initial stages of construction. The design was by the Public Works Department. The building format is single storey located on the high plateau to the east of the site, and two-storey to the west on the second bench of the site that was created to accommodate the school. In common with all the schools of the period, Armadale Senior High School is positioned to take advantage of fresh breezes. Also the orientation is designed to give the teaching areas north and south light, as well as good cross ventilation. The elevations are treated along very simple lines similar to Applecross Senior High School, with the outward facing walls being predominantly rendered concrete columns, with a steel framed wall system that incorporates opaque spandrel panels, hopper lights, and awning lights. The interior quadrangles have large expanses of grass and bitumen and brick paving, some trees, with concrete verandahs, steel verandah posts in the single storey sections and concrete columns in the two storey sections, steel balustrades, and face brick wall infill panels with rendered concrete columns. There are steel framed awning lights along classroom walls, timber seats, and lockers. Many of the lockers have been removed and the holes left by them covered with fibro cement panels. Gable walls are brick construction, covered with render. Asbestos cement roofs have recently been replaced with custom orb profile Colorbond sheeting. The canteen closes off the end of the middle quadrangle on the western side of the complex, with other wings left open creating open courts rather than quadrangles. In effect the north south wings acts as a spine, with wings extending off it in a similar fashion to the planning at Bentley. The east and west facing wings accommodate the main teaching spaces.
DEGREE OF SIGNIFICANCE	

Integrity		The place remains in use for its intended purpose so that the integrity is high.
Authenticity		Many minor changes though time and the continual pattern of growth and change have not altered the authenticity of the place significantly, so that the authenticity remains high.
Condition		The place reflects its values, is well maintained, and is therefore in good condition.

ANNOTATED BIBLIOGRAPHY

- Education Department Annual Reports, 1956, 1957, 1962, 1970, 1989/1990
- *West Australian*, suburban section, 5/8/1959
- 'Girrahween' (later 'Anamag') newsletter, 1961 on, Battye Library
- Plans located at Department of Housing & Works

Example of the survey chart

DOCUMENTING QUEENSLAND SCHOOLS

MICHAEL KENNEDY, ARCHITECT

In 1996 the Department of Education commissioned architect Michael Kennedy, historian Margaret Puller and architect Paul Burmester to undertake a Heritage Conservation Study of their buildings. The Department, encouraged by the Queensland Heritage Council, wanted to know which of their 16,000 buildings had potential cultural heritage significance and how this should be retained and conserved.

Because of the sheer number of buildings, the Department of Education's budget and tight time frames it was impossible to inspect and report on individual buildings. Instead the task was divided into two, the first stage being a desk-top audit using Education and Works Department's records to identify potential heritage buildings for further physical investigation in stage two by others.

The first task was to assemble a workable history of Education Department Buildings in Queensland. There had been several histories that dealt with the educational aspects of Queensland schools but nothing that combined the design of school buildings with educational history. The history fell into these fairly clear cut construction periods which related to the evolution of school design in Queensland.

1826 – 1875 - Towards National Schools

Early schools were run by Churches, but in 1848 the NSW government created a system of government schools similar to the National School system in Ireland. After separation in 1859 Queensland continued with its own National School system. Schools were first built in masonry but were soon adapted to timber. The Beenleigh National School was the work of Richard Suter who replaced Benjamin Backhouse as the Board of Education's architect in 1866 and was instrumental immediately in the introduction of timber buildings that employed distinctive exposed framing. Suter, who was familiar with Carpenter Gothic churches was the first architect in Queensland to use exposed framing on public buildings.

The other importance of Suter's schools was that they were of a standard type with designs repeated throughout Queensland. This adoption of standard types heralded a way of documentation of school buildings which was to remain a hallmark of schools designs in Queensland until this day.

Often Suter's standard designs were dispatched by the Board of Education to local communities well in advance of construction to stimulate interest and to aid fund raising. As a result, Suter's designs had wide distribution and considerable impact and were of significance for the spread of exposed framing as a building technique in Queensland, and may have been the main influence in its quick acceptance and use as a vernacular building form throughout Queensland.

Beenleigh National School, 1872. Architect: Richard Suter

The Ferguson Era 1875 to 1893

Architects Robert, and later, John Ferguson were directly employed by the Education Department and responsible for school design from 1875 to 1893.

Fergusons' schools continued with the timber tradition but integrated changes requested by educationalists such as improved light and ventilation, wide verandahs, ample floor space, play sheds, hat rooms, convenient lavatories, and decent offices. The suburban schools of the Fergusons such as the one illustrated above were Carpenter Gothic and represented a new style of school building in Queensland.

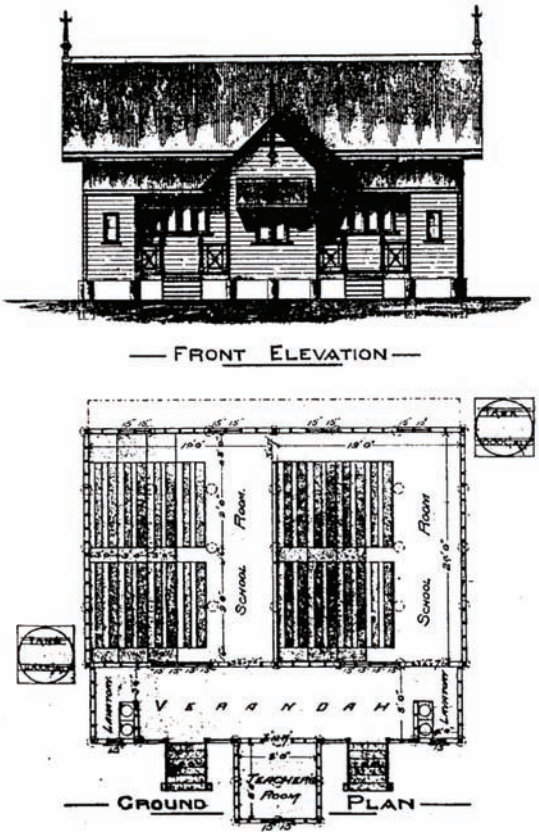
In the standard country school the Fergusons reversed Suter's exposed framing and reverted to single skin buildings which were lined with chamfer boards externally. The Fergusons also introduced louvres in the gables of buildings to provide cross ventilation.

Years of Experimentation 1894 – 1914

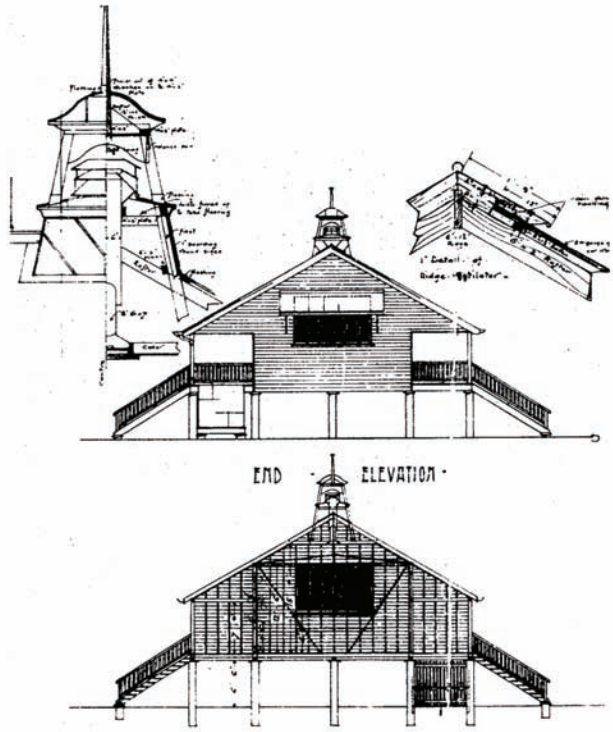
The design of Education Department building passed to Public Works in 1894. Works architects adopted and adapted the Ferguson standard country timber school and continued to address problems with light and ventilation which concerned educationalists.

By 1896 this had developed into a school which had a roof ventilator connected to the classroom and gable louvres to ventilate the roof space. By 1909 the classroom was ventilated by a substantial fleche. In larger schools with more than one classroom the fleche was connected by a system of metal ducts to each room.

In 1909 a change was introduced which was to have a major influence on school design for several decades as can be seen in this floor plan at Cannon Hill SS constructed in 1914. Instead of equal amounts of glazing to end walls, additional windows were incorporated in one end wall and desks arranged internally to allow the



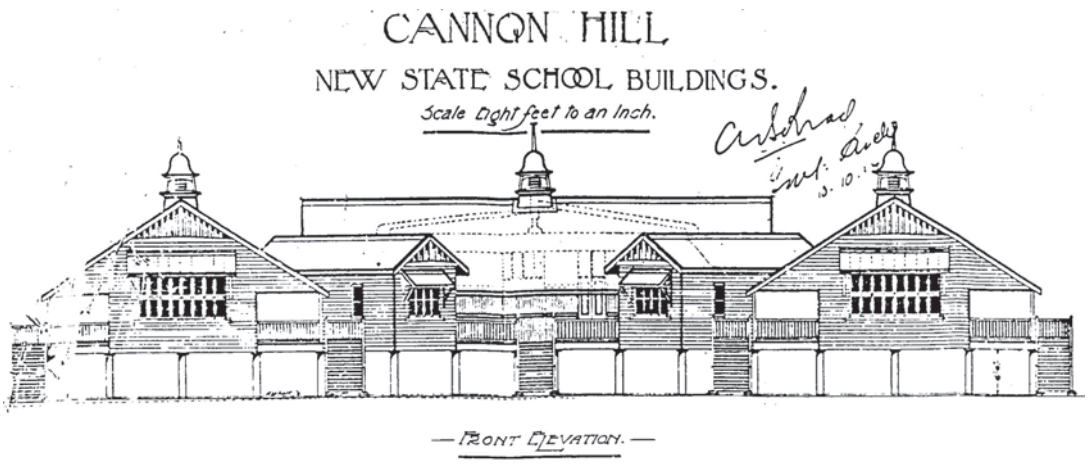
Carpenters Gothic metropolitan school, c.1880s.
Architect: John Ferguson



Standard timber school 1896-c1900

maximum amount of natural light to come from the left hand side of the student. However, little attention was given to orientation of the building and it was not until late 1914, after the principles and virtues of providing natural light from the south had been espoused by Dr Eleanor Bourne, the Medical Inspector of Schools, that buildings were oriented to receive maximum natural southern light.

Although Cannon Hill was not oriented to the south in other ways, it was the culmination of the years of experimentation with light, classroom size, ventilation, elevation and other details. It included Boyle's ventilators, which were connected by duct work directly to the ceiling vents in each classroom. Large windows were provided to ensure maximum light. The school was arranged in three highset classroom blocks connected by 10 foot wide 10 verandahs in a "U" shape. This school design did much to incorporate many of the improvements educationalist desired and became the model of a new suburban school.



Cannon Hill State School, 1914

In response to contemporary medical thought that disease was spread by foul air, coupled with the need to build cheap, portable schools for transient and small populations, the Department of Public Works introduced tent schools in 1909. Fresh air, it was thought, would also increase concentration and learning. Open air buildings had been constructed in Germany in and at the Diamantina Hospital, South Brisbane in 1911.

They were praised for providing an '*abundance of fresh air'* and being '*delightfully cool in warm weather'* and conducive to the health of the pupils. Between 1894 and 1914 several types of open air schools were introduced. These ranged from modest low set timber structures to accommodate one class, to larger more elaborate high set annexes which accommodated several classes.

In this period two other forms of educational buildings emerged: Technical Colleges from 1907 and High Schools from 1912.

Toobeah Tent School 1913

Toowoomba South Girls School Open Air Annexe 1914

Innovation 1914 – 1929

In the period from 1914 to 1929 there were some substantial masonry schools built in Brisbane. This included the Windsor school constructed in 1914 and the Wooloowin school constructed in 1915. But the major development in this period was the introduction of Sectional Schools.

This design was based on the erection of a nucleus building, generally containing one or two classrooms or sections which could be extended progressively. Five or six 'sections' in a straight line or plan form were not uncommon and, for larger schools, these were linked to another two or three sections, as necessary. The end wall was constructed in such a manner that it was detachable and could be used as part of a new extension. The buildings were orientated so the main window faced south.

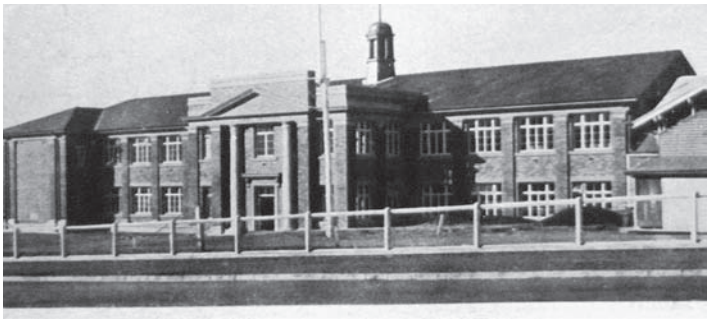
The Sectional School concept was pivotal in the evolution of school architecture. As testimony to their successful design, these schools were constructed from their inception in 1920 until 1950, with little modification to their original design.

The Economic Depression and the War 1930 – 1945

The effects of the economic depression on building work in Queensland were dramatic and building came to a complete standstill. Thus the Queensland Government's initiative in 1929 to provide impetus to the economy by embarking on a capital works building program was of considerable importance, and the construction of substantial two and three storey brick schools provided tangible proof of the Government's commitment to remedy the unemployment situation.

In all, 30 new brick school buildings were completed between 1929 and 1940. They had considerable aesthetic significance brought about by their massing and Georgian and Neo-Classical architectural style and the schools constructed in metropolitan areas quickly developed into local landmarks because of their massing and scale in comparison with surrounding suburban development.

Kedron State School – a sectional school 1925



Ithaca Creek State School 1934

Schools for the Baby Boom 1945 – 1960

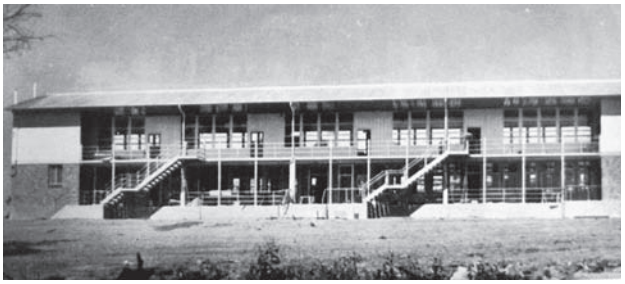
With the commencement of the 1950s the Works Department found itself confronting two fundamental problems. Firstly there was the need to accommodate an expanding student population caused by the post war baby boom, and secondly there were difficulties in obtaining building materials and skilled labour.

One approach adopted in order to resolve these problems was the importation of prefabricated timber classrooms from the British company Boulton & Paul. In 1951 an order for 95 school buildings comprising 160 classrooms was placed and the buildings erected in the early 1950s.

The Works Department also imported another British building system known as the Hawksley system. These buildings were technically innovative and used an aluminium structural system, aluminium external cladding and aluminium hopper sashes. They adopted many of the prefabricated components developed during the war in aircraft manufacture including pop-riveting and the use of synthetic gaskets and sealants. Twenty-seven school buildings comprising 90 classrooms were purchased.

Immediately after the introduction of the Boulton & Paul building concept, the Works Department developed a standard building which was similar to the Boulton & Paul building but was constructed in a more traditional manner. These were adapted during the remainder of the 1950s to reflect modern materials and architectural thought.

Architects also placed importance in planning for growth and change and interest was also shown in developing schemes which related to the natural contours and existing vegetation. Unlike the more formal and symmetrical plans of previous periods, new plans were developed which tended to be asymmetrical and more open. An example of this organic planning was Salisbury High which was built in 1957. This design concept allowed for future extension from a nucleus.

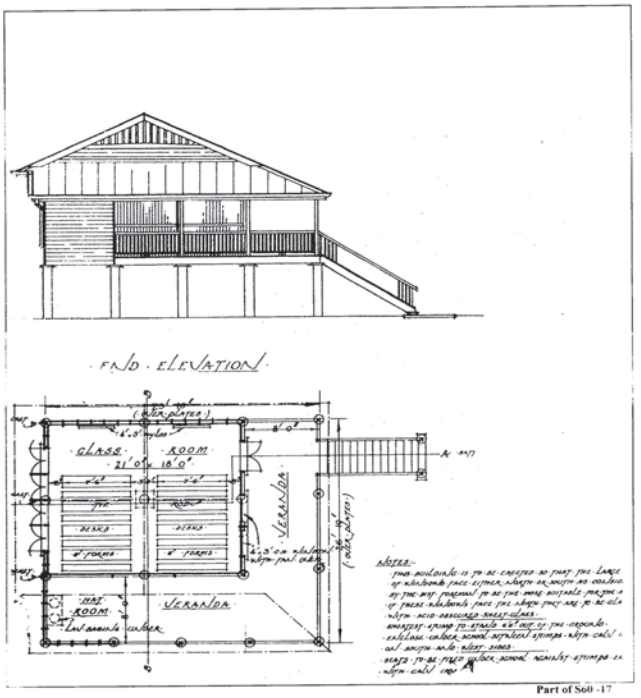


Hawksley prefabricated building – Southport High School 1955

Typologies

The history identified building types and placed their construction in the historical context of the development of education in Queensland. This allowed the development of an inventory of typologies. All up 53 individual typologies were developed which represented the total standard Queensland school buildings built in the period up to 1960. An example of a 1920s sectional school typology is illustrated below.

Type: Sectional School Buildings D/T1



Part of S60 -17

Construction Dates: 1914/1920 to 1950

Description: High set timber framed structure on timber stumps. Classroom width was 21'0". Verandah walls were single skin T& G, VJ pine with other walls clad externally with chamferboards. The western wall was detailed to facilitate removal and reuse to allow for futures extension.

Buildings were designed to allow for linkage to other and future buildings via verandahs. Provision was also made for the addition of teachers rooms off the verandah if the school continued to grow.

Type: Sectional School Buildings

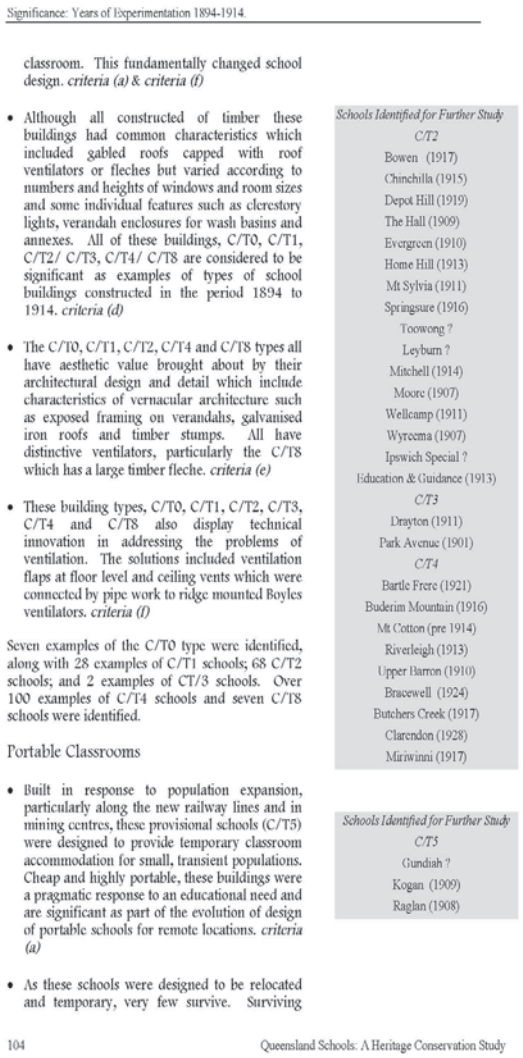
Desk Top Audit

In the Works Department system each school has an individual drawing batch and a unique batch number. Batches contain construction drawings of site development. The batch system is controlled by batch cards which list the individual drawings on each batch.

Works Department drawing batches of each school were then systematically examined to identify the typologies constructed, numbers surviving and the intactness of the remaining buildings. Highly altered examples with removed verandahs, altered room sizes and external elevations greatly modified were deemed to be of low intactness. This information was assessed in conjunction with other research material and entered onto a database. Approximately 1,200 batches were examined.

Analysis

From this information and the historical research, model statements of significance were prepared for each typology and lists of buildings worthy of further investigation were generated. In most cases schools identified for further investigation were those with a high to moderate degree of intactness, except in cases where they are rare and all examples were recommended for further study.



Significance: Years of Experimentation 1894-1914.

classroom. This fundamentally changed school design. *criteria (a) & criteria (f)*

- Although all constructed of timber these buildings had common characteristics which included gabled roofs capped with roof ventilators or fleches but varied according to numbers and heights of windows and room sizes and some individual features such as clerestory lights, verandah enclosures for wash basins and annexes. All of these buildings, C/T0, C/T1, C/T2/ C/T3, C/T4/ C/T8 are considered to be significant as examples of types of school buildings constructed in the period 1894 to 1914. *criteria (d)*

- The C/T0, C/T1, C/T2, C/T4 and C/T8 types all have aesthetic value brought about by their architectural design and detail which include characteristics of vernacular architecture such as exposed framing on verandahs, galvanised iron roofs and timber stumps. All have distinctive ventilators, particularly the C/T8 which has a large timber fleche. *criteria (e)*

- These building types, C/T0, C/T1, C/T2, C/T3, C/T4 and C/T8 also display technical innovation in addressing the problems of ventilation. The solutions included ventilation flaps at floor level and ceiling vents which were connected by pipe work to ridge mounted Boyles ventilators. *criteria (f)*

Seven examples of the C/T0 type were identified, along with 28 examples of C/T1 schools; 68 C/T2 schools; and 2 examples of CT/3 schools. Over 100 examples of C/T4 schools and seven C/T8 schools were identified.

Portable Classrooms

- Built in response to population expansion, particularly along the new railway lines and in mining centres, these provisional schools (C/T5) were designed to provide temporary classroom accommodation for small, transient populations. Cheap and highly portable, these buildings were a pragmatic response to an educational need and are significant as part of the evolution of design of portable schools for remote locations. *criteria (a)*

- As these schools were designed to be relocated and temporary, very few survive. Surviving

Schools Identified for Further Study

C/T2

Bowen (1917)
Chinchilla (1915)
Depot Hill (1919)
The Hall (1909)
Evergreen (1910)
Home Hill (1913)
Mt Sylvia (1911)
Springsure (1916)
Toowong ?
Leyburn ?
Mitchell (1914)
Moore (1907)
Wellcamp (1911)
Wyreema (1907)
Ipswich Special ?
Education & Guidance (1913)

C/T3

Drayton (1911)
Park Avenue (1901)

C/T4

Bartle Frere (1921)
Buderim Mountain (1916)
Mt Cotton (pre 1914)
Riverleigh (1913)
Upper Barron (1910)
Bracewell (1924)
Butchers Creek (1917)
Clarendon (1928)
Miriwinni (1917)

Schools Identified for Further Study

C/T5

Gundiah ?
Kogan (1909)
Raglan (1908)

104 Queensland Schools: A Heritage Conservation Study

Significance Statement

This included a large numbers of timber schools as detailed above which displayed a wide range of typologies with significant variations.

In total 293 buildings or sites were recommended for further investigation.

The typologies were reproduced in a separate Conservation Management report along with preliminary guidelines and strategies to assist consultants and staff of the Education Department to formulate detailed policies, strategies, priorities and work schedules for individual buildings and sites in the next stage of the project[1].

(Endnotes)

1 It is understood that stage 2 of the project took place between 2001 & 2006 and that the Stage 1 study was successful in identifying school buildings and schools of cultural heritage significance. As a result a number of buildings and sites considered to be of cultural heritage significance were identified and recommendations made to the Queensland Education Department for their listing and conservation. All attempts however to obtain a copy of the Stage 2 report from Queensland Education Department have been unsuccessful. No new school buildings or sites have been listed on the Qld Heritage Register.

AUSTRALIAN NATIONAL UNIVERSITY: DEVELOPING HERITAGE PRINCIPLES AND PUTTING THEM INTO PRACTICE

SHERIDAN BURKE, GODDEN MACKAY LOGAN HERITAGE CONSULTANTS

Rachel Jackson provided input to this presentation as one of the contributing GML authors of the ANU Heritage Study

The Australian National University (ANU) was established by an Act of Parliament in 1946, and it provides tertiary education which is shaped by research. Eighty per cent of its budget is spent on research; eighty per cent of the staff hold PhDs.

The ANU Acton campus in Canberra has grown like Topsy, with over 150 buildings, a splendid treed landscape and an expanding student body of 10,000 undergraduates and 6,500 postgraduate students now fast outstripping the available accommodation. The current development context of the university requires expansion of its teaching facilities, student services, parking and accommodation. The campus has a sensitive interface with the Canberra CBD and its adjacent institutional and cultural landscapes, being a site which is pivotal in the original Walter Burley Griffin plan for the city of Canberra.

The aging landscape of the campus and some of its buildings, environmental sustainability requirements and changes to university funding for new infrastructure via the influx of philanthropic and corporate contributions created a dynamic planning environment within which the ANU Heritage Strategy 2010–2012 was developed in 2006 (version 1), as the first primary policy document and strategic planning for heritage. (http://heritage.anu.edu.au/files/1602_ANU%20Heritage%20Strategy%202010-12.pdf)

In 2010 the ANU began work on its Master Plan 2030 (http://masterplan2030.anu.edu.au) and Godden Mackay Logan (GML) was commissioned to provide Heritage Management Principles for the campus to be integrated in the Master Plan, pending later development of a comprehensive Heritage Study for the Acton campus, to provided immediate guidance for development that needed to proceed before the detailed heritage analysis was in place.

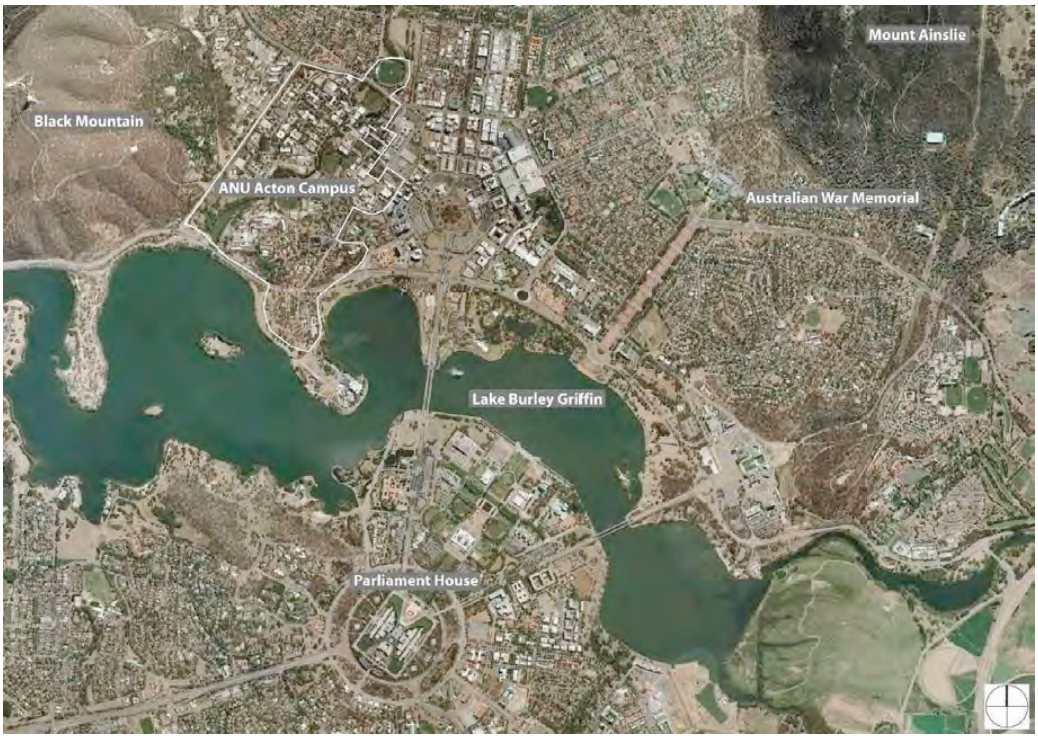


Image 1 – aerial view of Lake Burley Griffin and environs with ANU Acton Campus outlined.

The 25 Principles briefly covered the identification and assessment of the campus heritage values, conservation and interpretation, impact assessment and the design of new buildings within the campus heritage context. The Heritage Management Principles recognised that Aboriginal people would be actively involved in the identification and assessment of places and values on campus.

Following the launch of the ANU 2030 Master Plan, a full Heritage Study of the Acton campus was undertaken by GML in 2011-12. This was the first comprehensive and integrated assessment of its built, natural and Indigenous heritage values against the Commonwealth and National Heritage criteria of the EPBC Act. After comprehensive research, fieldwork and significance analysis including an Indigenous Heritage Survey, the ANU Heritage Study concluded that the Acton campus met the threshold for Commonwealth listing under the EPBC Act for its historic heritage values. These values are embodied in the layered cultural landscape of the campus and its various elements and places, many of which are already listed individually in the Commonwealth Heritage List and many more are now assessed as being of potential significance.

Image 2 – Campus development pressures include new development at the perimeter of the university, congestion and aging landscape and built elements.

To implement the ANU Heritage Management Principles and the preliminary conservation policies of the ANU Heritage Study, GML has recommended three key operational asset management tools provide guidance on a day-to-day basis for the Sustainability Office of the ANU Facilities and Services Division. These heritage tools can be readily absorbed into the ANU Strategic Asset Management Plan practice campus wide, providing the ANU staff with sound and professional standards to follow and implement.

The three tools are:

1. A standard **Heritage Study Inventory Template** –which was developed by GML and used for the identification and significance analysis of the individual buildings, landscapes and sites of Acton Campus. This data can be readily accessed and utilised for internal reports and impact assessments, and forms a flexible data base for addition and information storage. It can be readily used for other ANU campuses and adapted for similar institutions. Potentially it can become a useable component of the university asset management system. Four pilot inventories were prepared by GML, the rest by ANU staff.

2. The concept of **Tolerance for Change** (TFC)-which is used to guide day to day operational decisions about change to heritage elements (buildings / landscapes / sites) that may have cumulative heritage impacts. The TFC concept provides a rigorous and standard framework for assessment. Tolerance for Change is a method for judging how sensitive to change the attributes of form, fabric, function and location of each heritage element are, and consequently what level of change can be tolerated to avoid adverse impacts. TFC is provided in a tabular format for each heritage element of significance on the campus. This is a quick and thorough methodology developed by GML for complex heritage sites, where small cumulative decisions can be as important in conserving heritage values as major development proposals.

   The **ICOMOS Madrid Document: Approaches for the conservation of Twentieth Century Architectural Heritage** was developed by the ICOMOS International Scientific Committee on 20thC Heritage to provide guidance about intervention and change for the architecture of the 20thC. It is based on the Burra Charter and has achieved widespread recognition world-wide, now translated into 8 languages. A simple document of 9 articles with 24 explanatory notes, it provides useful guidance about sustaining and managing the general and specific values of 20thC architecture, of which the ANU has a great deal to be proud of. http://icomos-isc20c.org/sitebuildercontent/sitebuilderfiles/madriddocumentforpublication2012with2011copyright.pdf

Image 3 – Different elements and phases of development are recognised. Clockwise from top left, International House by Brian Lewis (1953); Landscape by T. Weston and L Pryor; Law by O'Mahony, Neville & Morgan, in association with Bunning and Madden (1965) and Toad Hall by John Andrews International (1973)

Conclusions

The **ANU Heritage Management Principles** continue to provide development guidance on the Acton Campus.

The **Acton Campus Heritage Study** has been finished with ANU Facilities and Services staff completing the templated inventory sheets, providing a ready database for recognising and managing the heritage values of the campus and continues to inform management and development decisions

Asset management decisions about change by ANU Facilities and Services staff daily put into practice the **Tolerance for Change** method to quickly articulate and assess minor heritage impacts. Standard Heritage Impact Assessments and where required, referrals under the EPBC Act, continue to be undertaken as necessary.

The **ICOMOS Madrid Document:** Approaches for the Conservation of 20thC Architectural Heritage, 2011 provides standard guidelines for new development on campus.

In the medium term, the integration of the full set of ANU Heritage Management Principles onto the next stage of the Campus Master Plan 2030 is proposed, as is their use into the forthcoming ANU Mt Stromlo Observatory Campus Heritage Management Plan.

In the medium term, the development of Sustainability Principles incorporating assessment of embodied energy will be investigated by ANU. Opportunities for cultural offsets may also prove worthy of investigation.

ANU now has the data and management approaches to meet its legislative requirements and easy to use standard tools which support confident in-house development decision making.

These practical tools and documents are readily adaptable for other 20thC educational institutions with heritage management responsibilities.

LANDSCAPING THE AUSTRALIAN CAMPUS

ANDREW SANIGA, UNIVERSITY OF MELBOURNE

The design of campus landscapes provides an extraordinary record of the incipient profession of landscape architecture in Australia in the post-WW II years. There are many reasons for this, including the long-term nature of the work, the unique symbiotic professional relationships that were developed, the explorative use of Australian native plants, and the opportunity to set in place broad scale site planning and design frameworks that, in many instances, have stood the test of time despite their authors being somewhat forgotten. Amidst the many successes there were also failures, the narratives of which are equally telling when it comes to understanding the essential attributes that defined landscape architecture in Australia in the relatively recent past.

New campuses of the 1960s were complex site planning exercises. If we accept Kevin Lynch's theory of that time, site planning lay at the intersection of many professions. It was continuous, controlled and comprehensively executed over lengthy periods of time, making the long-term nature of campus design an important consideration. This has implications for continuity of ideas, the scale of planning and design frameworks, the difficulties with putting artificial boundaries around sites and their urban context, and the organic evolution of sites. It is in the context of these dimensions that arguments for heritage significance can be easily eroded.

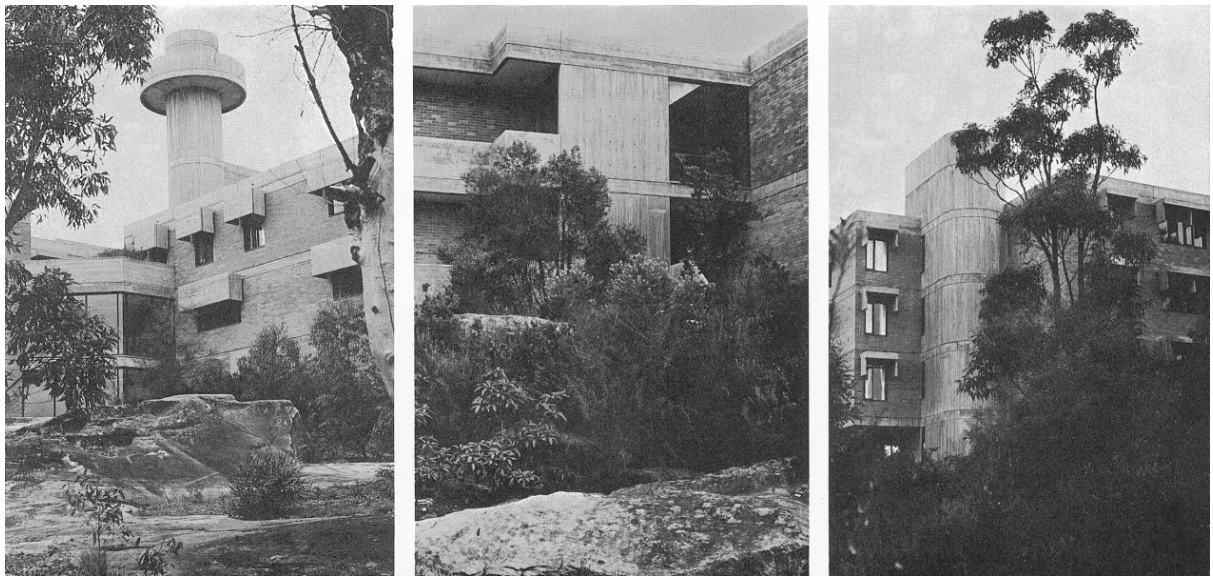
A second important consideration is the divergent modes of professional practice that often have a bearing on the production of the campus landscape. This gives rise to: symbiotic professional relationships, complex bureaucracies, and variations in consultancies including landscape architects acting as external consultants, sub-consultant to architects, employed directly by the university within property and grounds departments and as members of university grounds committees. All these things tend to make the establishment of authorship difficult, and correspondingly, the designed landscape difficult to define and to value. For example, architect and landscape architect Richard Clough completed site planning consultancies with forester and botanist Lindsay Pryor for developing universities like Flinders University and Macquarie University. They did so more in terms of 'on the ground' advice, than the preparation of designs on plan, thus requiring a great deal of pragmatism in getting the job done. At Macquarie University, the original 600m long avenue of plane trees made up the University's main East-West pathway. The trees were sourced from Canberra and were descended from trees brought from Cyprus by Lindsay Pryor in the 1950s. Pragmatism in planting also extended to selecting the right plant for the particular job. This often resulted in a liberal mixing of plant species.

Macquarie University, North Ryde, NSW by Architect-Planner's Office and Richard Clough (landscape consultant); and, an oblique aerial view toward the city of Perth showing the University of Western Australia in context. Source: [both images] 'Landscape Australia: An Exhibition', School of Environmental Planning (1982), The University of Melbourne Archives.

A third consideration of Australian campus design lies in an important shift in philosophy which occurred in the 1960s, when pragmatism gave way to a more explorative application of an Australian design ethos. In many of the new campuses developed from the 1970s, the emphasis in design was squarely on native plants, and importantly, on the regeneration of a site's pre-existing vegetation and/or the reconstruction of nature-like landscapes so as to appear as if the new campus had risen from an undisturbed site. This is well illustrated with landscape architect Bruce Mackenzie and his consultancy for the William Balmain Teachers College (now UTS) in Sydney dating from 1970. Mackenzie worked with architect David Turner to try and achieve minimal impact to a site that was reputedly high in environmental value; the buildings appeared as if they had descended into the site. The emphasis on native plants captured the spirit of the time, a period in which environmental consciousness was on the rise and ideals and ambitions were inculcated in campus planning and design across the country, some examples of which I briefly profiled in this presentation.

One of the most extreme cases of the fight for Australian-native planting themes occurred in the early years of the campus of Monash University, Clayton Campus, the master planning for which commenced in December 1958. In the early establishment of Monash University, a campus which at that stage was on the active suburban fringe of Melbourne, the promotion of the exclusive use of Australian native plants within the campus landscape brought great controversy. The conflict was essentially between ideologically driven aesthetics over practical considerations of design and an extraordinary number of notable pioneers of landscape architecture were found defending their professional expertise at a time when the profession of landscape architecture in Australia was in a relatively fragile state.

The saga of Monash came about largely because of Alan John (Jock) Marshall, Foundation Dean of Science (1961) and later Professor of Zoology and Comparative Physiology. Also significant was university's first VC, Louis Matheson, for his strong views and the resultant discourse over campus design that eventuated. Marshall was an interesting character. He grew up on the outskirts of Sydney and lost an arm in a shooting accident at age 16. This did not deter him from fighting in the Weewak campaign in New Guinea. He worked for nearly two decades in academic institutions abroad and wrote publications such as *Australia Limited* (1949) among



A landscape designed in 1970 by Bruce Mackenzie for the William Balmain Teachers College (now University of Technology Sydney), Lindfield. By 1975 the buildings looked as if they had descended into the site (Source: G Wilson, Landscaping with Australian Plants, p 51).

others. When he returned to Australia he was known to have developed a deep affinity for homeland, particularly its special landscape qualities, claiming he wanted to 'retribalise his children'. Promoting the special qualities of the Australian landscape were an important part of his ambitions from a conservation point of view, but also in terms of manufacturing aesthetic qualities that could represent native landscapes in the city.

In December 1958, architects Bates Smart and McCutcheon were appointed to design the 250 acre site, with Osborne McCutcheon as lead consultant and John Stevens as landscape consultant. Landscape was to be a key part of the master plan. An 'English Park Character' formed a part of their aesthetic vocabulary and led to the proposed central lake (which never eventuated) and the idea of arranging the buildings so as to take advantage of the view to the Dandenong Ranges, in much the same way as the English rural landscape might contribute to the picturesque garden. The exclusive use of Australian native plants on the boundaries and in the broad open spaces was proof that Australian native plants were important, but BSM and Stevens were also pushing for non-Australian plantings. For example, Stevens and Fraser planted poplars in an area that had sewerage problems so as to soak up the excess water. The story goes that Jock Marshall and Tim Ealey (part of 'Jock's Brigade') tore out the offending poplars, threw them in the back of a Kombi, and drove them up the Hume Highway to a farm somewhere. Such was the intensity of the dispute that ultimately led to formulating a lasting policy on planting design.

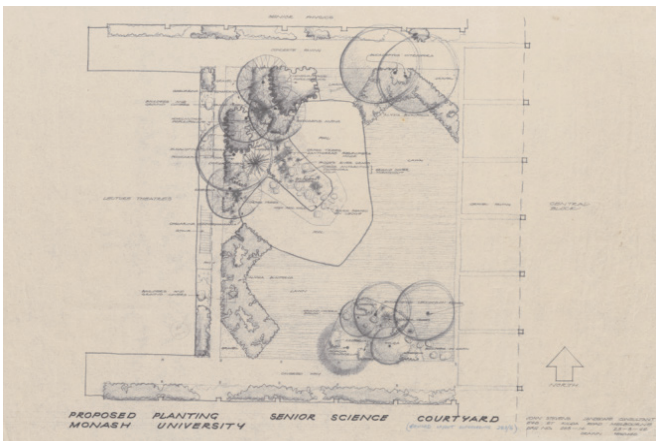
In debating a policy for planting external consultants such as botanist Prof John Turner, Lindsay Pryor and Richard Clough were all brought in at various stages, not to mention an array of other landscape consultants after Stevens had resigned. A compromise was struck early on whereby native plants would be used in the open areas and generally across the campus. The planting theme only to internal courtyards could be left to the discretion of the Dean of the faculty involved. This frustrated the consultants because it worked against accepted design principles for solar access and other planting design considerations to do with the scale of the spaces involved. In pushing their design ethos, Jock Marshall and Tim Ealey, and the Planting Sub-Committee ('Jock's Brigade') infiltrated the campus landscape with Australian natives

Australian native plants forced into small garden bed spaces in close proximity to buildings. South end of Science Block, Monash University, November 2012. Photograph: Saniga

sourced from various individuals and organisations from around Australia. The legacy of their activities persists today – the extraordinary range of Australian native plants from across Australia can still be observed jammed into tiny garden beds next to academic offices and teaching spaces.

John Stevens and Grace Fraser were particularly strong as planting designers. Despite having their planting advice severely compromised, they came up with schemes for the Science Courtyard and the Engineering Courtyard. Marshall compromised their extensive exposed aggregate paving reflective of designs of South American Roberto Burle Marx but the biomorphic pool edge alignment still gives this courtyard a distinctly modern appearance. In the Engineering Courtyard, the Dean of Engineering, Professor Hunt was keen to have exotic plants in 'his' courtyard. This ended up being a somewhat contradictory arrangement because in terms of size, the Engineering courtyard was actually more suitable to an Australian native planting palette. Unfortunately, their design has been demolished in a recent makeover. This is unfortunate because the two courtyards, experienced sequentially, once symbolised the historic battle over plants and an Australian design ethos which was significant for both Monash University and the profession of landscape architecture in Australia.

A series of other landscape architects came and went in the first decade or so of Monash's development. Their plight I have documented extensively in *Making Landscape Architecture in Australia* (2012). The narrative of Monash demonstrates well the array of different practitioners who make up the founders and pioneers of landscape architecture in Australia. In terms of landscape architecture and heritage significance, it is the diverse nature of the profession in the post WWII years that needs to be understood in order for the project of assessing heritage significance (comparative analysis) to be more successfully achieved.



The proposed Science Courtyard, Monash University, John Stevens, August 1961. Source: State Library of Victoria and Andrew Saniga; The Science Courtyard, Monash University in November 2012. Photograph: Saniga

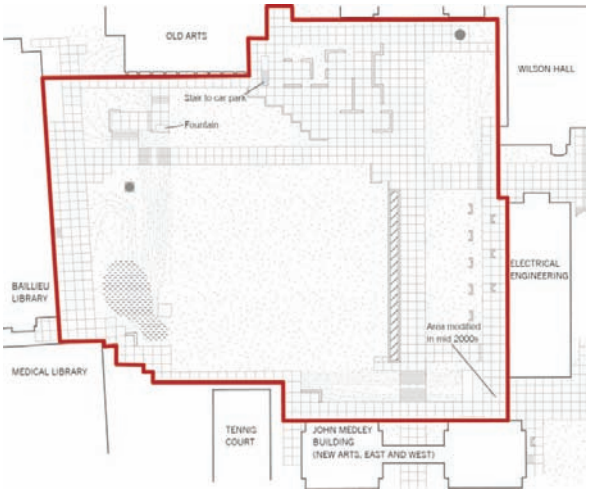
SOUTH LAWN: CONSERVING A PIONEER LANDSCAPE

ADAM MORNEMENT, LOVELL CHEN

Lovell Chen was recently engaged to prepare a Conservation Management Plan (CMP) for the South Lawn and Underground Car Park at the University of Melbourne. The South Lawn is a large open space at the physical and historic heart of the Parkville campus. It is a mature and fully accessible landscape located on top of the single-level Underground Car Park. The two elements were conceived as a combined solution to two long-standing problems, a lack of on-campus car parking and the poor quality of the existing South Lawn. Completed in the early-1970s, they were the first built outcomes of the 1970 Master Plan for the University prepared by Bryce Mortlock.

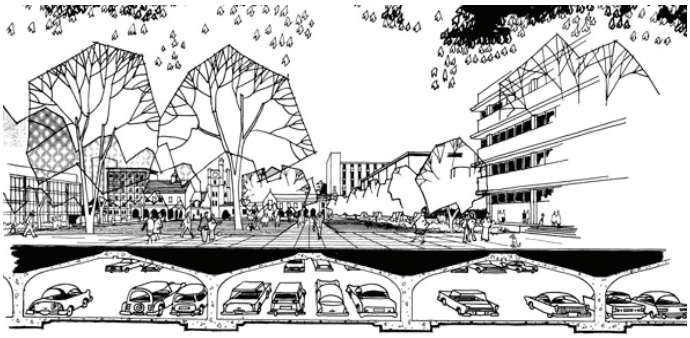
The design for the car park is ingenious. Its roof is formed by 102 structural concrete columns surmounted by hollow saucer-shaped concrete shells. The base of the shells is circular; their upper sections are rectangular. Beams at the edges interlock to form a platform. The shells are 1.5m deep, to maximise root spread, and drainage is provided through the concrete columns. The internal experience of the car park has been likened to a Gothic crypt.

Landscaping was required to conceal the car park, and to knit together the buildings of varying age and style to all sides. The design was developed by Rayment and Stones Landscape Architects, a short-lived collaboration between Ronald Rayment, who in 1968 become the first graduate of a post graduate landscape design course in Victoria, and Ellis Stones, a septugenarian purveyor of the 'bush landscape' style then nearing the end of his distinguished career. Stones designed the landscape treatment for the



CMP Study Area. Source: Lovell Chen

Construction c.1971. Source: Property and Campus Services

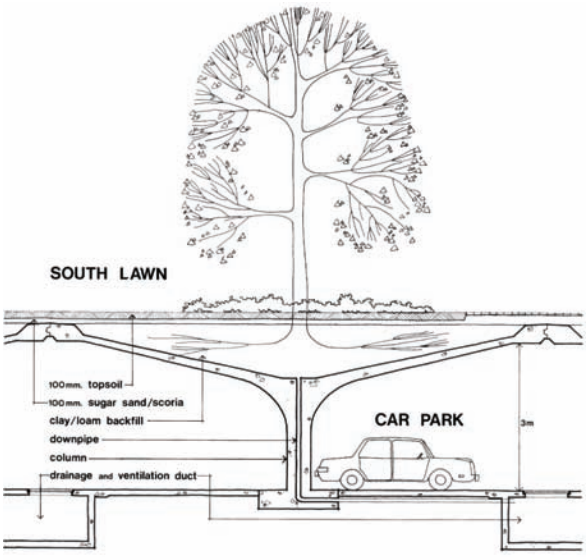


Schematic Drawing. Source: Property and Campus Services

Western Embankment (comprising no more than 20 per cent of the study area). Rayment was responsible for the 'on structure' landscape. Design development was overseen by Bryce Mortlock. Today the composition of the South Lawn, its balance of hard and soft landscaped areas, its dignified, ceremonial character and horizontal emphasis are largely unaltered. Ellis Stones' hand is immediately apparent in the Western Embankment.

The Underground Car Park is included in the Victorian Heritage Register (VHR). Its values are well known and well understood. The South Lawn is not in the VHR and the process of assessing its significance was not straightforward.

It is of historical significance as a designed landscape conceived at a formative period in the establishment of landscape design as a profession in a contemporary sense, and soon after the establishment of Australian Institute of Landscape Architects (1967). It is an interesting juxtaposition of two key trends in mid-20th century Victorian landscape design: Ellis Stones' bush landscape style and a formal institutional landscape. Aesthetically, the landscape treatment mediates successfully between the diverse buildings to all sides; the arrangement of plantings, and the hard landscape to the north responds to the regular geometry of the car park; and the landscape is largely intact. But while significance at a local level is not in question, is the South Lawn of State significance? To answer this required contextual and comparative analysis.



Planting Drainage Section – Source: Property and Campus Services

For us, critical analysis of the South Lawn revealed limitations with the assessment of designed landscapes generally, and post-WWII landscapes in particular – the first comprehensive history of 20th century Australian landscape design was published at the end of 2012, more than a year after the CMP was complete. Historic designed landscapes, such as set piece 19th century public gardens, are accepted as significant as defined in the Burra Charter, even if their stylistic qualities and precedents are often addressed in passing or overlooked entirely, and undue emphasis given to particular specimens. This is in contrast to assessments of buildings. The sources and influences for the built contemporaries of the South Lawn are well known and understood – the work of Roy Grounds, Robin Boyd and Merchant Builders for example. It made us wonder, has there been a resistance in the landscape profession to the Burra Charter principles of assessing designed landscapes, and is this something that could, or should, change?

Reflecting Pool (2010). Source: Lovell Chen

South Lawn Car Park (C.1970s). Source: Property and Campus Services

HOST CAMPUS + HOST ARCHITECTURE

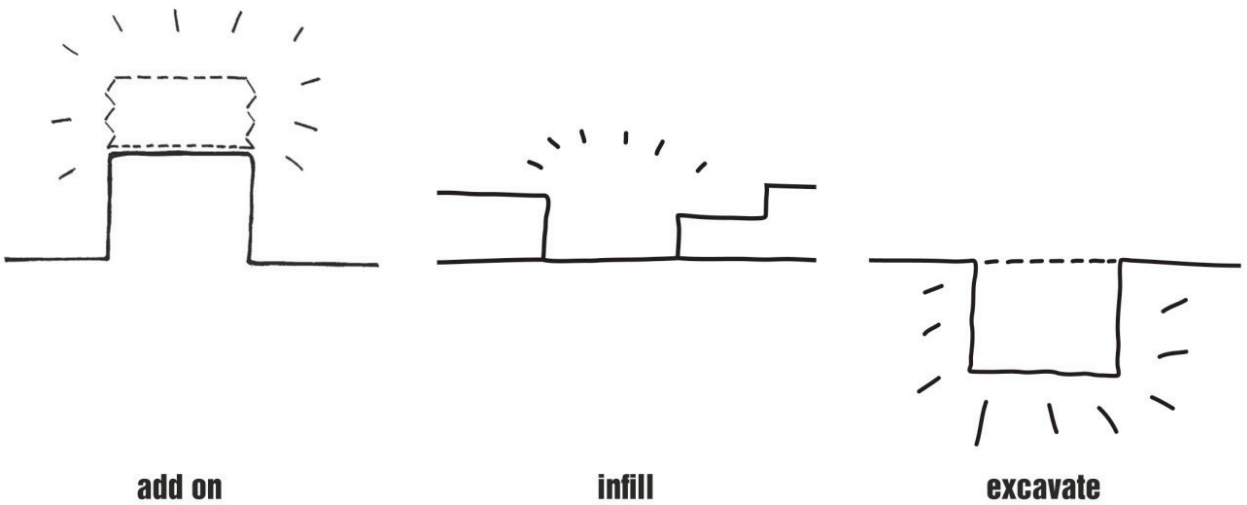
PETER ELLIOTT , PETER ELLIOTT ARCHITECTURE AND URBAN DESIGN

Introduction

Over the last decade schools and universities have adopted a much more outward looking perspective as they try harder to connect to the wider community. Campuses are no longer seen as isolated citadels but engaging places that are more open and inviting. This idea has transformed the way architects work. Most of our educational campuses are already built so the question is how best to adapt and renew them to suit a new generation. Most cities survive through adaption and renewal. They become richer and more meaningful because they absorb and retain prior histories as well as generate new ventures. Educational campuses can be viewed as micro pieces of the city and, as such, the same transformational urban design techniques apply one to the other. The established campus can therefore be considered as a "host" capable of accepting new architectural components or graftings along with selected removal. Typical architectural interventions might include excavating, adding on and infilling and all the creative variations they imply. Several recently completed educational projects demonstrate this approach.

Refer to the Practice website for more information and images – **www.peterelliott.com.au**

Traffic Office University of Melbourne (1994) – "add-on grafting"



HOST CAMPUS + HOST ARCHITECTURE

Victoria University Law School (2003)
– “adapt & add-on”

La Trobe University Visual Arts Building Bendigo (2005)
– “in-fill”

Building 9 Rooftop Extension RMIT University (2009)
– “add-on”

RMIT University Frances Ormond Building and University Lawn (2010)
– “adapt, add-on, in-fill, new”

Melbourne Grammar Memorial Hall & Music Centre (2005) – “excavate & add-on

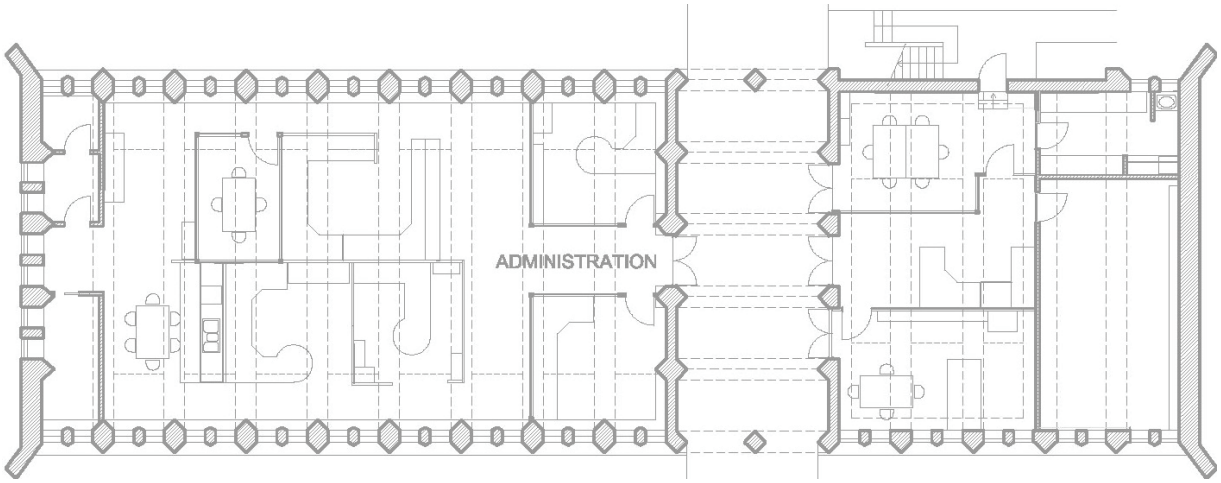
Melbourne Grammar School Upper Primary Precinct (2010)
– “adapt & add-on”, Mockridge Stahle & Mitchell buildings”

NEWMAN COLLEGE REFURBISHMENT

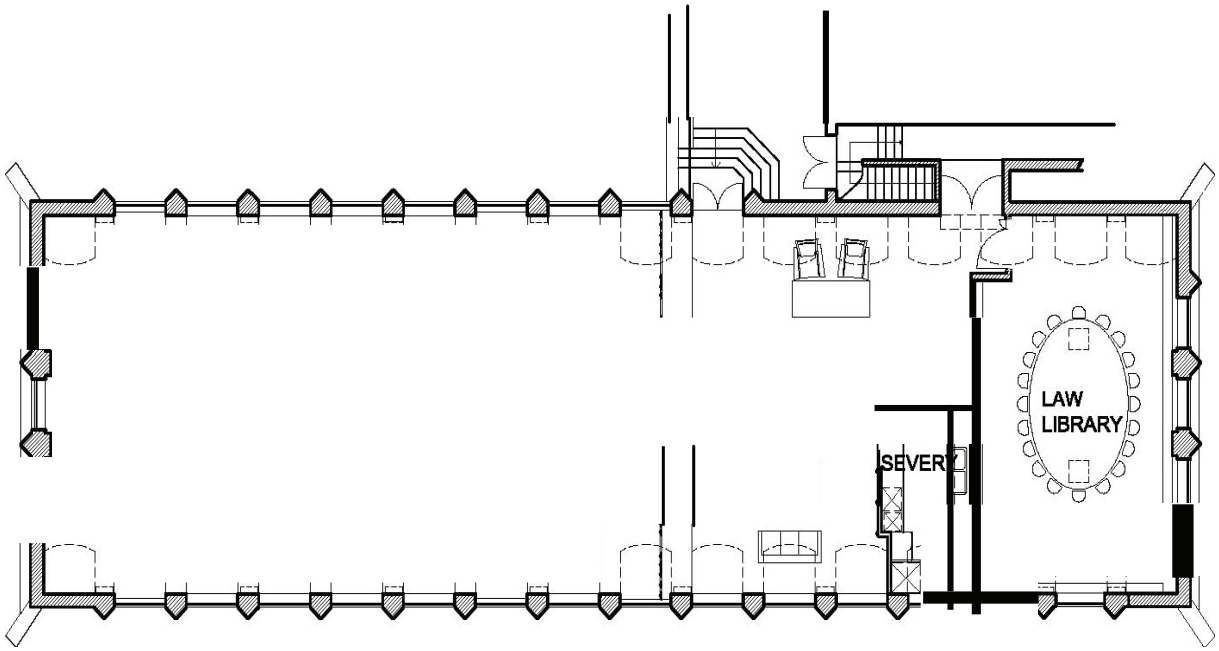
PAUL MORGAN, PAUL MORGAN ARCHITECTS

This paper discusses the design approach of Paul Morgan Architects to the refurbishment of part of Walter Burley Griffin and Marion Mahony Griffin's masterpiece at Newman College. It will consider how the practice negotiated the difficult challenge of respecting the original design whilst building on the original architects' design intent without being slavishly historicist. Morgan also discusses PMA's design process through the framework of the Griffin's oeuvre of work and PMA's interpretative techniques of mise-en-scène and memory, as well as touching on the Griffin's significant influence on Melbourne architects.

It is a slightly daunting experience, refurbishing Walter Burley Griffin and Marion Mahony Griffin's masterpiece at Newman College. Back in 2004 the brief was in three parts: to convert a general purpose room in the Kenny (south) wing (designed by Nichols); to refurbish the cramped executive and administration spaces on the ground floor of the H Wing; and to refurbish the Oratory on the first floor.



Newman College, H Wing, Ground Floor

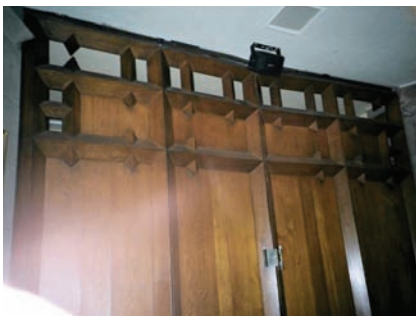


Newman College, H Wing, First Floor

The first part was reasonably straightforward. In the second, our practice took the approach of, as much as possible, locating partitioned open plan office areas in the centre and freeing up the external walls which included chamfered pilasters.

The third part – refurbishing the Oratory – was the most challenging since it was the most beautiful and most public space in the brief. The Oratory was originally designed to be a double height void. This was amended to two levels, giving the Oratory a flattened proportion. The brief was to refurbish the space from a library to a public space suitable for lectures, conferences, and poetry readings as well as providing an ante-room along with a servery whilst retaining the Law Library in the east end.

We stripped back the room, further revealing the deep window rebates. The effect of the vaulted ceiling was highlighted with uplighting. The major new design element was the joinery units enclosing bookshelves as well as the servery, which introduced the question of how to design the joinery units. We did some research on the precedents that influenced Walter Burley Griffin's design for Newman College – and Jeff Turnbull and Peter Navaretti's book *The Griffin's in Australia and India* was critical here. These influences were eclectic, from American-Indian and Meso-American precedents, the ziggurat and the pueblo adobe, the Buddhist stuppa, Japanese architecture and landscape design, the Gothic, Spanish ecclesiastical and Moorish architecture.



H Wing, Oratory before and after refurbishment

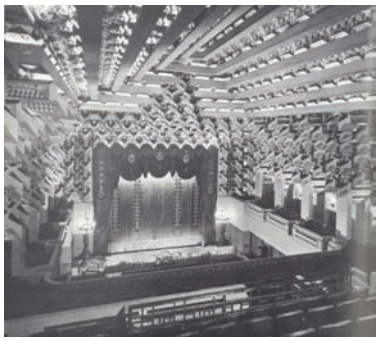
Completed new joinery units

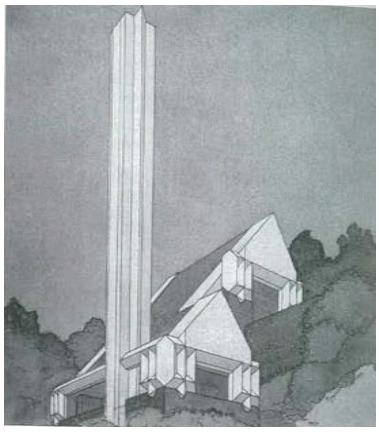
Turnbull writes ‘themes of metamorphosis change and natural new growth – as can be seen in the dome’s finials – are present in a number of the building elements’.

A recent conversation with Conrad Hamann revealed his student’s thesis that the Newman College design represents a conflation of all the world’s religions: a sobering thought a century later.

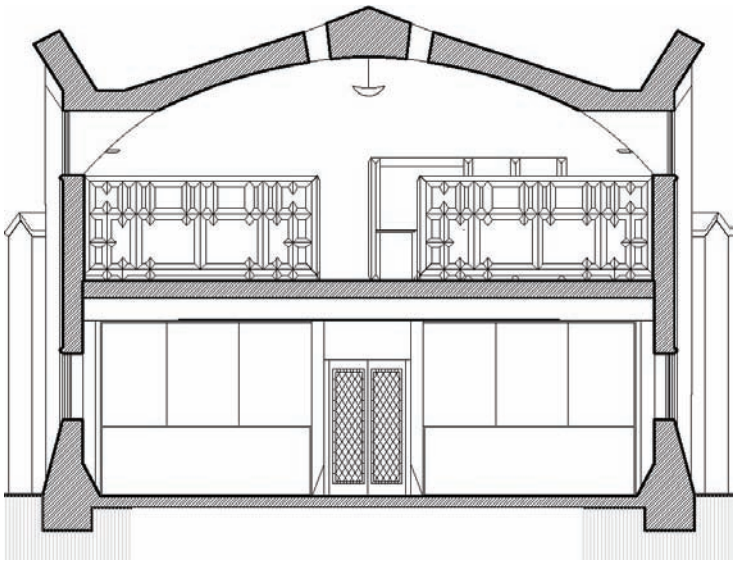
Griffin’s ideas include telescoping (Newman College finials and Capitol Theatre ceiling), exaggeration and multiplication. It is this spirit that influences the design for the joinery in the oratory. The technical problem addressed by the joinery design is acoustics. The chamfered elements on the panels are exaggerated forms of similar elements utilised on timber panels designed by the Griffins in the dining room. Elements are composed as a mise-en-scène – the creation of an environment where every part contributes to the whole.

The Griffins influence on Melbourne architects was significant. The eclecticism of their work based on a transcendental philosophical posture resonates in the work of such influential Melbourne practices as Greg Burgess and Edmond & Corrigan. Although the Griffins also worked in Sydney their ongoing influence is not as evident there.





Top: Detail, Newman College.
Middle: Capitol Theatre, Melbourne.
Bottom: Griffin’s design for a municipal incinerator



H Wing, Section

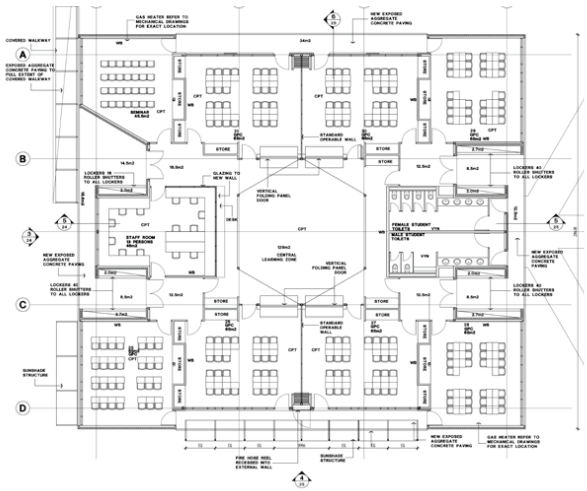
OLD BUILDINGS AND NEW TYPOLOGIES

STEPHEN TURNER, GRAY PUKSAND

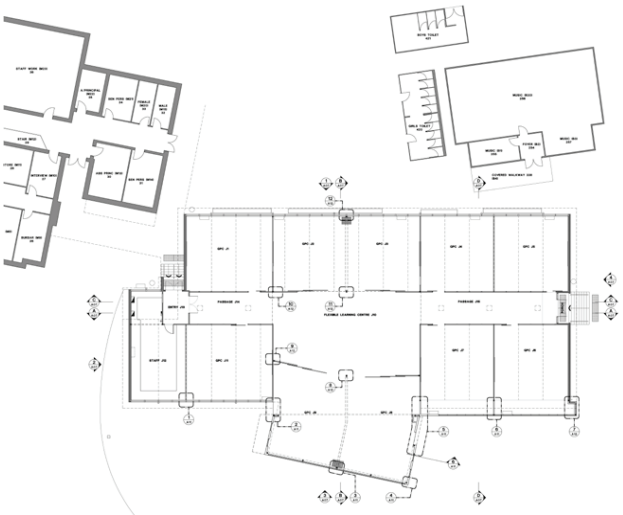
As architects and interior designers we are often challenged with the need to reuse education buildings from mid to late 20thC. Anecdotally, these structures, in many cases, appear to be the product of an egalitarian, 'one size fits all' model of education delivery, originally driven by the pragmatism of industrialization. The 'egg carton' model of planning—identical classrooms connected by long corridors—has required contemporary designers to apply innovative adaptations to existing layouts. An examination of three recent projects display some of the opportunities, limitations, quality, and, in some cases, enduring character of late 20thC educational architecture.

In an attempt to prolong the useful life of these buildings, some fundamental aspects need to be considered in order to facilitate modernisation and extended functionality. Our aim is to conserve the quality of modernist buildings where possible; this can often be achieved with consideration to the following:

- Generally improve the flexibility of internal spaces.
- Improve amenity, natural daylight, ventilation and accessibility.
- Examine sustainable/environmental characteristics and improve performance.
- Preserve the integrity of well designed elements.
- Reinstate or adapt existing elements that prove to be enduring and flexible.
- Consider spaces relevant for the freedom of movement and access to information provided by new and emerging developments in ICTs.



Patterson River Secondary College, Refurbishment
Completed 2006



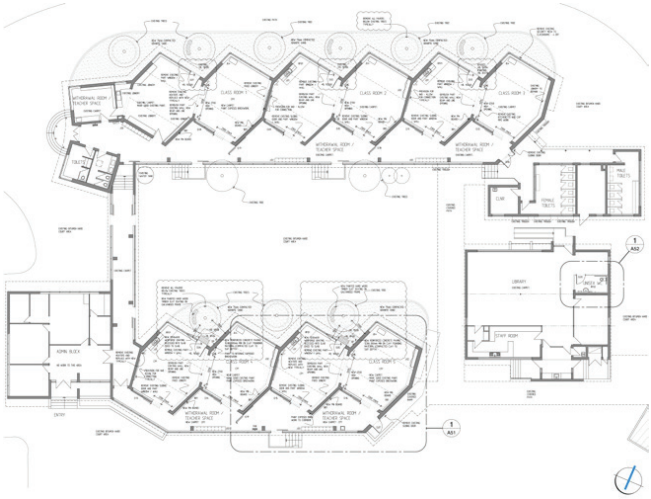
Ballarat High School, Junior School, Refurbishment
Completed 2007

It is in the *detail* that purposeful flexibility can be achieved. With restrictive budgets and limitations posed by the costly replacement of existing infrastructure, we look to incorporate a number of design revisions. The following features represent a snap shot of our methodology:

- Strategic removal of internal walls to create space for collaboration.
- The installation of a variety of operable wall types. These may be sliding, tilt up or pivoting panels.
- The introduction of large areas of glass where more acoustic enclosure is required, thus preserving transparency.
- Maximise existing building form and external glassing. Often buildings from this period have clerestory glazing; this can be useful in the creation of large internal shared spaces.
- Reduction of corridor space (and minor additions) to free up constricted planning arrangements.

Patterson River Secondary College

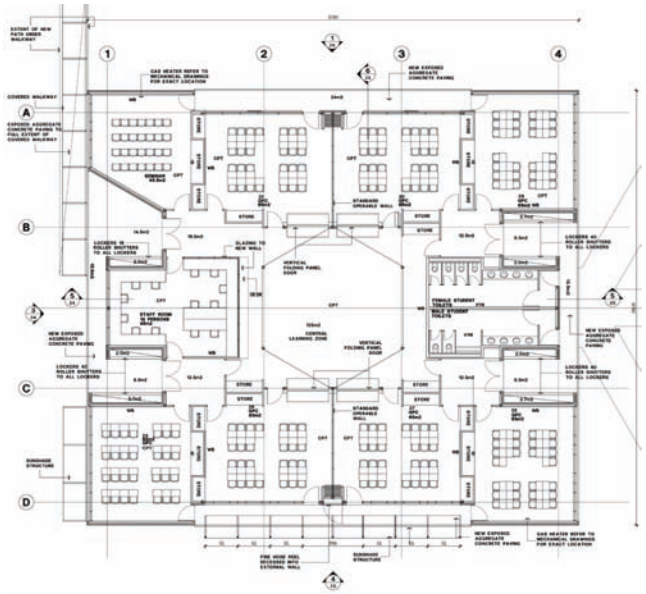
Ballarat High School



Newlands Primary School, Refurbishment Completed 2011

Newlands Primary School

The project for Patterson River Secondary College focussed on the preservation of an octagonal clerestory glazed building. The original building was planned with a plethora of small internal offices, store rooms, and dark corridors used primarily for administration. A new sense of flexible amenity and purpose was achieved by creating a large, central communal space directly beneath the existing clerestory. Importantly, the area was designed to be enlivened by the surrounding and interconnecting classrooms. By capturing the natural daylight via the lantern roof, and providing glassed operable walls (which fold up, providing transparency and connectivity) to the class rooms, natural daylight could be transferred throughout the space.



Patterson River Secondary College. Above: Central Space Below: floor plan

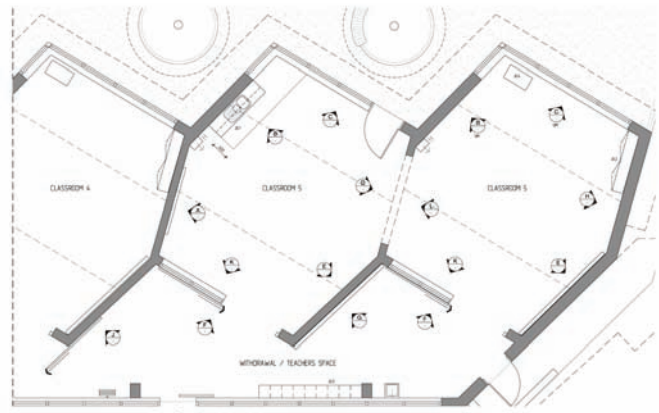
Ballarat Secondary College made the decision to retain one of their Light Timber Constructions (LTC) for adaptation into a Year Nine centre. Typically, these buildings were planned around a central corridor with classrooms on either side—otherwise known as 'double-loaded gun barrel' corridor planning. To provide a dynamic and flexible collaboration space, minor additional space was attached to the existing building as a pop out feature. Externally, this was designed to be in keeping with the conservative façade treatment, yet, at the same time, provide a new dynamic and accessible feature. Internally, the corridor disappeared into shared spaces surrounded by large sliding glass walls and high-level glassing, providing new freedom of movement.

Ballarat HS, Junior School Yr 9 Centre

Both PRSC and BHS required significant reworking to achieve the aims provided by the aforementioned methodologies. Newland's Primary School is one example of where, due to a planning arrangement of hexagonal classrooms encircling a courtyard, only subtle intervention was required. Due to the non-rectilinear nature of the planning a number of nooks of varying sizes exist; this enabled (with some minor changes) the planning of a variety of large and small spaces within the existing building. By removing one internal wall between interconnecting classrooms and introducing a glazed sliding door to each classroom, the adaptability of all spaces was improved. Careful consideration was given to designing any new framing so that it honoured the original design. This minimal and sympathetic approach resulted in new educational spaces that seamlessly fit within the authentic design aesthetic. Significantly, this was achieved using no additional area, with only slight modifications to the existing fabric. The new layout provides:

- Larger group settings and collaboration between classrooms.
- Activated and useful smaller space that were previously used only for circulation.
- Improved transparency between spaces and use of natural daylight.
- Freedom of movement and visual access.

Our experience shows that existing structures from this broad period can be maintained and improved; however, often the cost comes close to justifying demolition and a complete rebuild. Some buildings respond to adaptation better than others. In some cases additional area has to be added to the previous outline so as to improve planning arrangements. If properly executed, this should allow for fertile collaboration, which, in turn, will boost student engagement and facilitate cooperative teaching practices. One common design feature—the clerestory glazing—grants room for large, centrally-located and inter-connective spaces. Additionally, opening up constricted corridor space allows for improved flexibility and activity-friendly environments. Certainly, late 20thC education architecture can be conserved; nevertheless, these buildings must be adaptable for the new typologies required by contemporary pedagogies. As the classroom disappears, purposeful and flexible planning modalities are emerging. The new campus is achieved by breaking down physical barriers and providing transparent, radiant social spaces that encourage collaboration.



Newlands Primary School

SCHOOL LIFE IN EXHIBITIONS AT MUSEUM VICTORIA

DEBORAH TOUT-SMITH, MUSEUM VICTORIA

Museum Victoria holds a rich collection of documents and objects that record and interpret the history of childhood and the experiences of children. Its Australian Children's Folklore Collection (ACFC), documenting children's verbal folkloric traditions from the 1870s to the present, is of such significance that it is recognized on the UNESCO Australian Memory of the World register. In recent years the Museum has taken a range of approaches in its depiction of schools and childhood through exhibition. Three examples are indicative: the former playground display at Melbourne Museum between 2000 and 2007, the 'Little Lon' display within *The Melbourne Story* exhibition from 2008 and the Playground segment in *Identity: Yours, Mine, Ours* exhibition at the Immigration Museum from 2011.

The best-known and arguably the most effective of these was the playground display. It was a 60m2 'memory set' intended to evoke a playground in the recent past, including a shelter shed, bench seat and drinking fountain. Large photographs on the end walls extended the space and created a visual sense of place. Historic objects in cases, and recreated lunch boxes, augmented the display, although care was taken not to overwork and overfill it with props and dressing, allowing room for visitors' imagination to fill in the details. The space was made to appear worn and used. Arguably the most evocative element of the playground was the intermittent audio track of rhymes, games, taunts, jokes and verses of children, reflecting the diversity, challenges and joys of playground life. Recreated from the archives of the ACFC, these were augmented by files of cards containing much more of the same content, and an invitation for visitors to write down their own chants and rhymes for the Museum's collection.

The display was based on the idea that playgrounds have historically been the key environment in which children *'negotiate issues such as gender, socio-economic background, physical characteristics, ethnicity, cultural background and sectarian beliefs. Through language, action and play these issues are negotiated more explicitly in the playground than in any other theatre of everyday life'* (Exhibition Concept). Playgrounds can reveal much about Melbourne's cultural diversity across time.

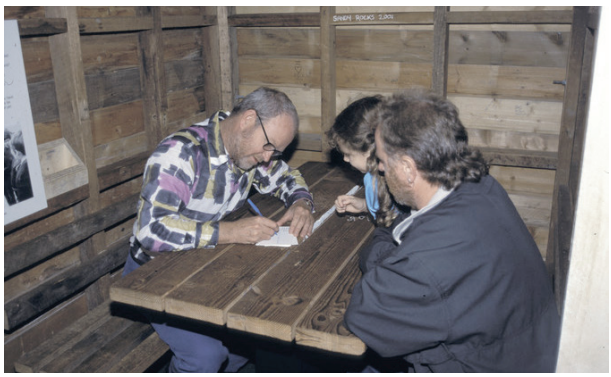
The display was hugely popular with visitors who attended school in Australia in the 1950s-70s, who found it deeply nostalgic and engaging, and an effective way of connecting across generations. The growth of graffiti on the shelter shed, as visitors left their marks, added to the effectiveness of the display until it threatened to overwhelm the walls! Some visitors commented that it brought back negative memories of school, but most found the experience positive. For non-local visitors, though, who could not relate to the content, it was a much less effective display: it relied strongly on shared memories and cultural understandings, which inevitably meant that some visitors were excluded from full engagement.

Shelter shed and yard in playground display

Inside shelter shed, lunch box recreations, graffiti

After the playground display was removed as part of a gallery redevelopment, childhood found a presence in the 'Little Lon' (the name by which an area of Little Lonsdale St was known) display, a walk-in re-creation of two cottages from the economically-marginal Little Lon district in inner Melbourne of the late 19thC. Children's beds and a few toys are crowded into the cottages; a few of their playthings from archaeological excavations are housed in adjacent cases; and the cobbled streetscape outside is flooded with their voices, chats and cries, again recreated from period-appropriate archival sources in the ACFC. An ice-cream seller's cart parked in a small adjacent 'shed' is used intermittently to demonstrate 19thC children's games. Together these elements create an effective children's presence, and the immersive set dressing of the cottages creates a strong sense of place. These are children about whom little is known historically, and we have used labels to indicate the sources of information we have used in our recreations. Unfortunately, as we found in the playground display, visitors in immersive environments don't tend to read labels, but instead focus on the sense of being transported to another place and time.

The *Identity* exhibition took a somewhat different approach in not using an immersive environment in its depiction of the experiences of children. The exhibition as a whole explores the formation and impact of identity, with a strong focus on behaviours experienced or adopted during childhood. One section, 'People Like Them', explores feeling different or being identified as different due to our inherited characteristics or personal choices. For some, identifying as different can be a positive experience; for others, being identified as different can result in isolation and prejudicial behaviors. The Playground segment within 'People Like Them' suggests that the environment we grow up and live in can subtly and overtly influence the way we perceive and cope with difference both within ourselves and with others. The segment features an ambient playground soundscape, again using oral content from the ACFC, light boxes illuminating insights into navigating through these issues with children and some amusing reflections from parents on the things children say. A text panel provides contextual questions to the visitor. These elements encourage visitors to consider how to respond to children's interactions with 'difference' and provide hints for parents and teachers. What this segment *doesn't* have, unlike my previous two examples, is a contextual environment that transports the listener to another place and time – but then its intent is somewhat different: to stimulate critical reflections and changing perspectives, with a friendly and engaging but authoritative voice.



Visitors recording own memories

'*Little Lon*' Melbourne Story.

Considered together, the texts used for each of the displays about children share common ideas about identity, diversity, difference, inclusion and exclusion. The nature of the content in the ACFC card files, on which the audio is based, lends itself to this approach. And what we know of the positive visitor responses the contextualizing of the audio within immersive environments – when done with sufficient authenticity – provides an even more effective way of communicating information about the history of children's experience. We hope to take the best from all of these approaches in our redevelopment of the children's gallery, for which planning is already underway.

Further reading:

Smith, Charlotte H.F. & Tout-Smith, Deborah. 2010. Recreating Place: Little Lon. *Museum Management and Curatorship*. Vol 25 (1).

Archaeological material in cases adjacent to cottages

Identity: Yours, Mine, Ours

THE HIDDEN HERITAGE OF THE SCHOOLYARD

JUDY MCKINTY, INDEPENDENT CULTURAL HERITAGE INTERPRETER AND CHILDREN'S PLAY RESEARCHER

In December 2010, a playground survey was carried out at Princes Hill Primary School in Carlton. The school had previously undertaken some major building works and the aim of the survey was to document the children's play activities and make recommendations to assist in the development of a school landscape plan. Talking with the children uncovered a rich culture of play with its own traditions, some of which had become fragmented because of the positioning of the new buildings and others that were invisible to anyone but the children. As a result of the survey, the school began a truly innovative project involving children in the design of their own adventure playground.

- The purpose of the playground survey was to: document what the children were doing in the schoolyard
- explore their play traditions, and
- discover the relationship between play and place at the school.

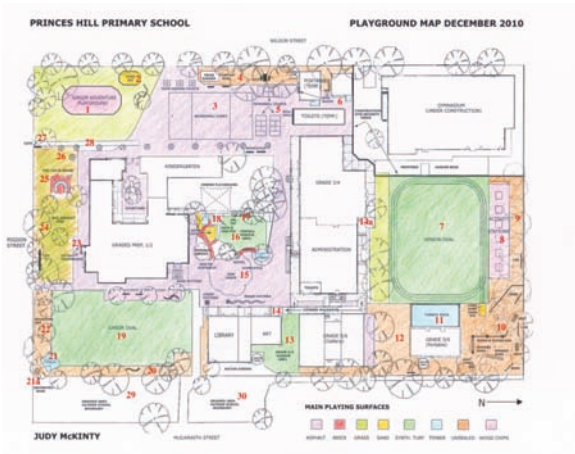
The last point is particularly significant, because there is always a close relationship between play and place to be found in school playgrounds. It is important to take this into account when planning new buildings or landscaping works, because changes to the school grounds can greatly affect the children's play and potentially unsettle the playground, leading to unexpected activity and behaviour.

The survey generated a detailed report about play at the school. It included a list of games documented during the survey period and a cultural map of the playground showing the location of the games, features important to play at the school and the different kinds of playing surfaces found in the schoolyard.

The 'cat and mouse'

There are many hidden traditions in a schoolyard. At this particular school, there was a very plain, unusual and utilitarian-looking structure made of metal and wood. None of the staff knew anything about it except that the younger children used it in their play. Talking with the children revealed that they called the structure the 'cat and mouse' after the game they played there. 'Cat and Mouse' is a game of tiggy, where the 'cat' chases the 'mice' and puts them in the corner 'dungeon'. It has a number of rules like any chasing game, but the really interesting thing is that the game, and its relationship to the structure, was completely unknown to the adults at the school because of the way it has been passed down from child to child over the years. At the beginning of each year, the new Prep children are given a 'buddy' from Grade 5. The buddies orientate the new children to the school – show them where the taps and toilets are, explain the school rules, show them where their playing areas are and so on. As part of this orientation, the buddies have been teaching the new Preps the rules of 'Cat and Mouse'.

Through talking with former pupils of the school, we traced the 'cat and mouse' back as far as the 1980s. This means it is possible that children have maintained this unique play tradition by oral transmission, without any adult involvement, for at least 30 years. Now that the cultural heritage of this structure is known the school is keen to preserve it, rather than have it removed and replaced with something more decorative.



Locations of places discussed in paper

The cat and mouse

The 'bug airport'

In another part of the school, a very large gymnasium occupies around one-third of the total senior playing area. Before the gymnasium was built there was a garden area with bushy shrubs and trees – a favourite place for children to go to make huts, cubbies and stick villages over the years. They were not creating huge structures – it was about place-making and the enjoyment of playing with natural materials. When the gymnasium was built, the trees and shrubs disappeared, along with that play tradition.

Across on the other side of the school, I discovered a remnant of the stick-building activity. Two boys from Grade One were constructing a 'bug airport' from sticks which had been carefully gathered from around the schoolyard. The roof of the 'bug airport' was made from pieces of bark and leaves. As there are no bushes growing in the area I looked around for the source of the materials and discovered that the boys had stripped the outer bark from a tree in another part of the yard. This is an indication that the urge to play with natural materials is so strong that if a place to play these types of games, and the loose materials required, are not provided, children will use their own initiative and obtain the resources wherever they can, sometimes with unwanted consequences.

In order to play, children will find a way around the 'bannings' and the lack of materials. This often leads to conflict with the teachers and the children get into trouble. Many of the problems that occur in school playgrounds can be avoided if the environment is there to support the type of play that the children need – the type of play that is fundamental to being a child.

The adventure playground

The last example of hidden play traditions involves a very large and much-loved senior adventure playground. This was a typical wooden, multi-level construction with bridges, decks, a sliding pole, a climbing net, large rocks and other elements to encourage physical, social and creative play. This playground had been removed and a portable classroom established on the site. There was a great sense of loss among the senior children, particularly as replacement pieces of equipment, installed beside the sports oval, were designed more for physical fitness activities than for encouraging the kind of free play that occurred on the wooden structure. When the adventure playground was removed a whole layer of rich play experiences and interaction between children of different ages was lost – social interaction as well as physical activity. The play traditions of the adventure playground had been removed along with the pieces of wood.

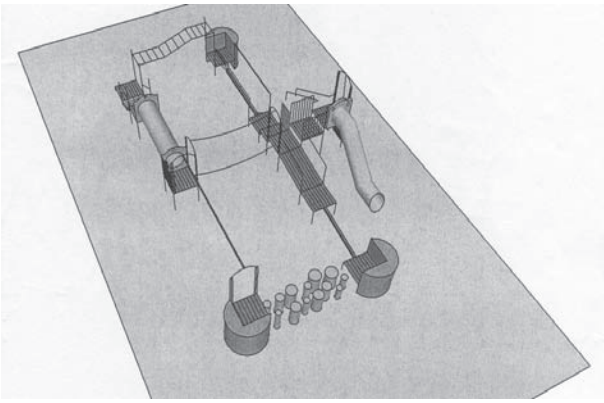
The 'bug airport'

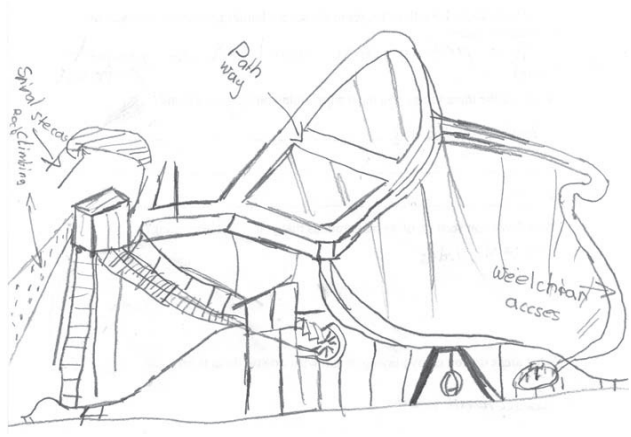
Site of new adventure playground

The playground redevelopment project

The playground survey identified a number of issues occurring in the schoolyard because of the removal of the adventure playground, and a recommendation was made for the construction of a new senior adventure playground. The school could see that this was really important for the children's wellbeing, so a playground redevelopment group was formed, consisting of six children from Grade Six with two teachers as facilitators and collaborators. Another student joined the group halfway through the project.

The long process of designing a new adventure playground involved a number of steps, including research and consultation with the other students through a whole-school survey. This required teachers' support, particularly in the younger classes where they had to set aside class time to listen to each of the children individually and write the descriptions carefully beside their drawings. This process gave every child in the school a voice and a part in the planning process.





Examples of children's responses to whole-school survey

The project was documented in detail by one of the teachers involved. The children's comments and discussions are particularly interesting and reveal the thinking and creative problem-solving that took place during the different stages of the project. In a discussion about safety, rules and fairness, one of the children makes this comment about the banning of card games:

> *Not allowed to use Pokemon or other trading games because we can't settle arguments. How can we learn to?*'

There is also another discussion where they are planning the strategy for their presentation to the School Council:

> Rafi: *We want a replacement, not a substitute for the old playground. That's what they've given us...a substitute.*
> Patrick: *We've got to not base it around criticism. Criticism is not going to persuade them...We need to talk more about what we have to offer.*
>
> Aidan: *We have to criticise them nicely.*

Anyone interested in reading about the playground redevelopment project can find it in *Play and Folklore* No. 58, October 2012, published online by Museum Victoria:

http://museumvictoria.com.au/pages/40803/issueno58october2012w.pdf

An article about the 'Cat and Mouse' can be found in *Play and Folklore* No 55, April 2011, pp 24-26

http://museumvictoria.com.au/pages/25926/playandfolkloreno55april2011.pdf

(The article was republished as 'The "Cat and Mouse" game' in *Teacher* no 221, August 2011, published by the Australian Council for Educational Research, Camberwell, pp 30-31)

Scale model of new adventure playground

'YOU KNOW THAT BUILDING UNDER THE KING'S WAY BRIDGE?': ORAL HISTORY AND THE JH BOYD GIRLS SCHOOL

DR NIKKI HENNINGHAM, ESCHOLARSHIP RESEARCH CENTRE, UNIVERSITY OF MELBOURNE

This paper discusses how a sense of place is central to the memories of people's school days. It refers to the case study presented by a small oral history project commissioned by the City of Melbourne to make sure that remembered sense of place was present in a redeveloped school site, the JH Boyd Girls' High School.

In December 2007, the City of Melbourne purchased the former JH Boyd Girls' High School heritage site for $10.5 million, with plans to redevelop the site into a community facility. In 2010, the council announced that an important element of the site development was to sell a third of it to developers who would build a residential and commercial tower. Local residents were alarmed at the prospect of another high rise tower in the neighbourhood, but knew that the development of the community centre wouldn't happen without the funds injection provided by the sale. The commercial arrangements were finally agreed upon in March 2012 but the community hub redevelopment had been underway since late 2010, when the budget for the City of Melbourne Infrastructure plan was approved.

The Melbourne public were very interested in the project, even those who did not still live in the neighbourhood.

An old boy who attended the school in the 1920s called the City of Melbourne project manager to tell him how he hoped that whatever was being done to the redeveloped site would be sympathetic to his memories of it as a school. The project manager took Ken Smith's call to heart. Funding was allocated in the budget to support a project that would include an oral history project, with interviews of past students providing the raw material. The interviews were used to to create wall plaques displaying pull-quotes from interviews, but as the project developed things got more sophisticated. A twenty minute documentary was made, along with the pull quote plaques, for use at the opening of the redevelopment and to give to the people who had helped us.

The paper examined what the project meant to the people we interviewed; not just the redevelopment but the oral history project as well. Participants were very emotionally involved in the lead up to the launch and afterwards. Many participants attended the launch and talked about it for days with those who didn't. They used a specially created Facebook site, set up by and for old girls, for the purpose. Women in England, Ireland and Greece shared their LOLs, smiley faces and tears with ex-classmates who have never lived anywhere except Port Melbourne. The Boyd School history project facilitated a big, international, cross-generational school reunion. An unexpected consequence of the development of a much needed community hub in the heart of Southbank was the creation of a community of adolescent memory.

Boyd School Studios 2010. Photograph: Nikki Henningham

New Cultural Centre Sign. Photograph: Nikki Henningham

The Boyd School Building has both architectural and historical significance. Designed in Tudor Revival-style by the Department of Education's Chief Architect, Henry Bastow, and built in 1885, the school's location, visibility, style and size reflected the growing population and wealth of the city it served - 'Marvellous Melbourne' -basking in all its mining derived glory. The school's architectural significance is matched by its historical significance, as a reminder of previous philosophical approaches towards the education of girls. After 1930 the school became a single sex domestic arts college for girls, remaining one until it closed in 1985. In the 1930s it adopted a domestic science curriculum in line with pedagogical developments that promoted 'scientific' mothering education to equip girls to fulfill their roles in the private sphere as home managers. Over the next 50 years, the curriculum developed in accordance with changing expectations of women's place in the private and public spheres. In the 1940s, commercial subjects such as typing and shorthand were offered to girls to equip them for a career in office and secretarial work.

By the mid-1970s a full range of academic subject offerings were available to girls. Reflecting this evolution from a domestic college to a mainstream girls' school, JH Boyd Domestic College was renamed JH Boyd Girls High School in 1979. The most recently built wing of the school, opened in 1968, continued to reflect the school's heritage as one firmly rooted in the teaching of domestic science. Even when the school closed, its kitchen classrooms were seen to be state of the art. William Angliss College was happy to take advantage of them when it moved in after the schoolgirls moved out in 1985.

The paper then went on to talk about the interview recruitment process and surveyed the range of people we spoke to. There were women who attended in the 1960s. There were women who enrolled in the 1950s (one of whom now lives in the UK) who were 'ten pound poms' (assisted English migrants) and attended when they were living in the migrant hostel at Fishermen's Bend in Port Melbourne. There was an Indigenous woman who travelled from Croydon in the 1970s so she could go to the same school her older sisters went to. But by far and away, the predominant users of the site were the girls of Greek heritage who attended in the late-1960s and early-1970s.

Key themes emerged from the interviews. People wanted to talk mostly about (in the following order) friends, the local area, discipline issues, uniform, sports, meeting boys, and then where various things happened in the school building and grounds.

Girls in the school's "front yard" 1970s.

Plaque with school memory. Photograph: Nikki Henningham

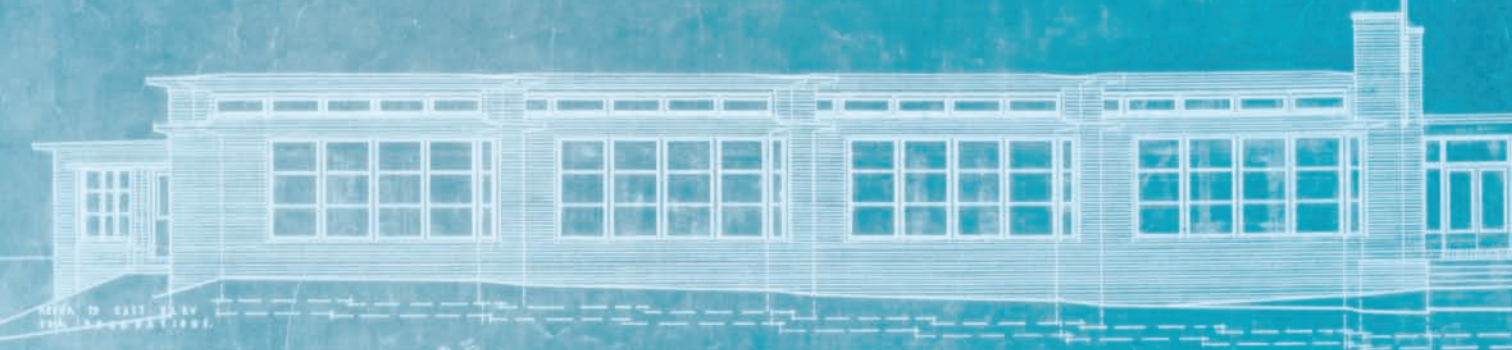
The physical space was important, as was the location – most of them loved being at school close to the city, although they did remind me that the local area was very different when they were there. But during interviews there was very little talk about the physical site. Memories of school days at Boyd were memories of friends, friendship and belonging (or not) as the case might be. It was almost as though the voices could have come out of any old wall, until the people who went to the opening of the redeveloped site reported back to those who couldn't. One woman took it upon herself to do this in amazing detail. Beside pictures, she posted long comments about what she was looking at and how it compared with her memory of the former use of that area. She tried to provide a then-and-now running commentary for those who couldn't attend. One woman broke into tears when she eventually saw them. The sight of the site, redeveloped, made her very emotional.

Many of the women involved could not thank me enough for placing their 'childish memories' into a broader, historical narrative that, in one woman's words 'allowed a Greek girl from Port Melbourne to be important'. Another woman who attended the school in the early 1970s summed it up perfectly. When asked what she thought about the meaning of the history project to her, she said:

'I think it's wonderful that you are including us. I think it's lovely that the building is being kept and I think it's lovely that we are not being forgotten. Because it's still a question that everyone asks in life. Where did you go to school? And I say, 'you know that building under the King's Way bridge?' And people say 'No..." But now, maybe they'll know it.'

And if there is one thing we know about growing up in Melbourne, it's that where you went to school places you more than anything else.

Boyd School Cultural Centre Opening. Photograph: Nikki Henningham



NORTH ELEVATION