

DESIGNING LEARNING SPACES THAT WORK: A CASE FOR THE IMPORTANCE OF HISTORY

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This article explores the little understood practice of school interior design and the manner in which school interiors give form to ideas about what the work of children and teachers could and should look like. Its focus is a perceived link between the concepts of school work made material in the design of new twenty-first century learning environments and those expressed in the design of Modernist progressive schools such as Richard Neutra's Corona Ave. Elementary School, California. The article's impetus comes from current interest in the inter-relationship between the design of physical learning environments and pedagogy reform as governments in Australia and internationally, work to transform teaching and learning practices through innovative school building and refurbishment projects. Government campaigns, for example the UK's Schools for the Future Program and Australia's Victorian Schools Plan, use a promotional rhetoric that calls for the final dismantling of the cellular classroom with its industrial model of work so that 'different pedagogical approaches and the different ways that children learn [can]... be represented in the design of new learning environments'¹, in buildings and interiors designed to support contemporary constructivist-inspired pedagogies.²

In this article we want to test the hypothesis that, despite the promotional rhetoric of the schools for the future campaigns, current manifestations of transformative school design are not new. Rather they have historical precedents in the design of pedagogically progressive schools, such as Neutra's Corona Avenue Elementary School, 1935, (Los Angeles, California, USA), the Saarinen's and Lawrence Perkin's Crow Island School, 1940, (Winnetka, Illinois, USA), and David and Mary Medd's Eveline Lowe Primary School, 1966, (Camberwell, London, UK). By comparing these schools we intend to identify the historical existence of school interior design as a practice pivotal to the construction of the material and aesthetic language of schools that is informing developments today, and to suggest the development of an interior design pattern language that supports and gives form to ideals of child-centred education.

School interior design is used to construct and shape experiences and relationships, environments and ambience, flow and movement, notions of time and place, and group identities through spatial organisation, furniture design and selection, choice of furnishings and fittings, incorporation of technology, access to tools and resources, and the use of colour, texture, materials and light – both natural and artificial. As a cultural language it gives material expression to ideas about the work of students and teachers and to ideological narratives such as the nature and value of childhood, children's development and place within society, the nexus of nature, technology and progress, modernity, function and comfort. It also supports school architecture in shaping the work culture identities of schools and their communities.

1 Infrastructure Division Office for Resources and Infrastructure Victorian Department of Education and Early Childhood Development, Victorian School Design, Victorian Department of Education and Early Childhood Development, <http://www.education.vic.gov.au/management/infrastructure/schooldesign.htm> 2008, 6. (accessed July 10, 2008)

2 George Betts, *Autonomous Learner Model for the Gifted and Talented* (Cheltenham, Vic: Hawker Brownlow Education, 1992); Howard Gardner, *Multiple Intelligences: The Theory in Practice* (New York: Basic Books, 1993); Carolyn Edwards, Lella Gandini and George Forman, *The Hundred Languages of Children: The Reggio Emilia Approach Advanced Reflections* (Greenwich, Connecticut: Ablex Publishing Corporation, 1998); Lev Semenovich Vygotsky, *Mind in Society: The Development of Higher Psychological Processes* (Cambridge: Harvard University Press, 1978).

All designed by Modernist architect-designers our chosen schools enable us to consider the mediating role of the designer and the links between the pedagogical ideals of Modernist design education and those of progressive child-centred schools. The important factor here is a collaborative design process between designers and educators involving a shared vision of child development and creative inquiry that drives the identification and production of appropriate learning spaces. Within this article, Design is understood as a discipline and profession and school interior design as a sub-discipline. As Adrian Forty argues Design is a mode of cultural production which 'can cast ideas about who we are and how we should behave into permanent tangible forms'.³ And it has, as the research of Catherine Burke, Ian Grosvenor and Martin Lawn reveals, contributed to building the material culture of education.⁴ While our focus is the professional designer we acknowledge that until recently mainstream school interiors have been primarily the work of non-designers—principals and teachers.⁵ Accordingly we are critically aware that what we are dealing with here is the ideal rather than the norm.

This article is cross-disciplinary with its content involving the histories of both education and design. It uses visual analysis methods from design history to identify and categorise design languages and how they communicate. Photography, central to both disciplines, provides the primary source material together with the journals and publications in which the photographs were published. Like Susie McKellar and Penny Sparke, Tim Benton notes considerable difference exists between the ideal Modernist interior and the lived-in reality that is constantly mutating.⁶ Photographic representations of Modernist interiors, including homes, were usually uninhabited to emphasise that architecture's primary purpose was the conceptualisation of space. Children and their furniture Benton notes are rarely represented.⁷ This raises questions about the intention and use of the photographic representations our selected schools which are distinctive in their quality, attention to child specific interior design and their depiction of children and teachers at work. While pointing to the significant role of the photographic media in the rapid international spread of Modernist ideas about architecture and interiors, they also raise question about the transmission of progressive education ideals and how these ideals were disseminated, popularised and translated into the mainstream.⁸

Schools for the future: designing pedagogical change

As our aim is to use history to understand the present, this article begins with an example of twenty-first century, school interior design at Wooranna Park Primary School, Dandenong, Victoria, Australia. Here the concept that design can assist in driving pedagogical change has been given material form through a five year government-funded action research refurbishment project, the 'Inside-Out' Project⁹, which has resulted in a new model for school interiors comprising complex, diverse and purposeful spaces intended to facilitate a move to a democratic, child-centred working environment.¹⁰ The school had developed a progressive, social constructivist pedagogy inspired by Betts, Vygotsky and Reggio Emilia to meet the developmental needs of its socially and culturally diverse student body. Recognising the need for different learning spaces to support this change, it decided to collaborate with

3 Adrian Forty, *Objects of Desire* (London: Thames and Hudson, 1986), 6.

4 Catherine Burke and Ian Grosvenor, *School* (London: Reaktion Books, 2008); Martin Lawn and Ian Grosvenor, *Materialities of Schooling* (Oxford: Symposium Books, 2005).

5 Thomas David, 'Functional Dimensions of Classroom Environments' in *Mind Child Architecture*, eds John Baird and Anthony Lutkus, (London: University Press of New England, 1982), 193.

6 Susie McKellar and Penny Sparke, *Interior Design and Identity* (Manchester: Manchester University Press, 2004), 1.

7 Tim Benton, 'The Twentieth-Century Architectural Interior: Representing Modernity', in *Imagined Interiors: Representing the Domestic Interior Since the Renaissance*, eds Jeremy Aynsley and Charlotte Grant (London: V&A Publishing, 2006), 222.

8 Benton, 'The Twentieth-Century Architectural Interior', 225-234; Jeremy Aynsley, 'Introduction', in *Imagined Interiors*, 10-19.

9 Mary Featherston, "'Inside-Out' Project", Featherston Design, <http://www.featherston.com.au/inside-out.html>

10 Esme Capp, 'Wooranna Park Primary La Raison D'Etre', Wooranna Park Primary School, www.woorannaparkps.vic.edu.au/pdf/learning.pdf

interior designer Mary Featherston because of her extensive career designing learning environments informed by progressive pedagogical ideas, particularly Reggio Emilia.

Mary's design for children and learning dates back to the early 1970s when she and husband Grant Featherston won a Commonwealth Education Grant to research community children's centres in order to make them more responsive to changing theories of childhood, creativity and social development. 'Revolutionaries at heart',¹¹ the Featherstons believed in the social responsibility of design and were influenced by Modernist theorists, including D'Arcy Thompson, Walter Gropius, Laszlo Moholy-Nagy, Gyorgy Kepes and Richard Neutra, who argued for the biological origin and necessity of design.¹² Within this theory of 'design for life' Moholy-Nagy theorised; 'Function is not only a demand for a limited mechanical task; "function" also includes the fulfilment of biological, psychological and sociological requirements'.¹³ Similarly, the Featherstons believed human need and experience—social, cultural, psychological, physiological, economic, material and technological, was the starting point of design, and explained 'functionalism' in biological terms 'as a concrete expression of the life force—explicit in the beauty of our bones. What is a bone?—Function which has become form—form which has become matter'.¹⁴ Implicit in this biological theory are the Modernist concepts of a 'total work of art' and 'holistic' design in which every detail is considered within the organic whole.¹⁵

The human experience was pivotal to the Featherstons' furniture and interior design work that involved research, and observation of people's fundamental needs and patterns of behaviour. Their children's centres research, for example, began with the questions 'what do children need, what do parents need?' with answers sought in sociology, psychology, physiology and education as well as international design developments especially in America, Scandinavia and Italy.¹⁶ This laid the foundation for Mary's career and the 'Inside-Out' Project design process where she lead students and teachers in collaboratively questioning the fundamentals of how children learn, how children and teachers behave, think and work, where learning occurs and how to design settings that support progressive, social constructivist pedagogy.¹⁷

The result is a holistic environment that supports children individually and collaboratively during experiential learning that is self-directed and investigation-based. The child at the centre of work and the environment is made evident in the proportions of the spaces and furniture, and the detailing of work settings including the drama space, lounge, games area, studio/laboratory, classroom workshop, quiet study areas, multi-media hub, areas for group discussion and targeted teaching as well as carpeted floor areas for construction, play and socialising. Within these diverse yet integrated settings teachers operate as fluid teams guiding children's journeys of inquiry and discovery. The aesthetic language of materials, colour, texture, form, space and light is stylishly

11 Grant Featherston, 'How I Became a Furniture Designer', (Unpublished notes for a lecture, c late 1950s. Featherston Archives, Ivanhoe, Victoria, Australia); 'Mary Featherston in Conversation with Denise Whitehouse', (public forum presented at Heide Museum of Modern Art, Victoria, Australia, 2009).

12 D'Arcy Wentworth Thompson, *On Growth and Form* (Cambridge: Cambridge University Press, 1961); Walter Gropius, *Apollo in the Democracy: The Cultural Obligation of the Architect* (New York: McGraw-Hill, 1968); Laszlo Moholy-Nagy, *Vision in Motion* (Chicago, Illinois: Paul Theobald, 1947); Gyorgy Kepes, *The New Landscape in Art and Science* (Chicago, Illinois: Paul Theobald, 1956); Richard Neutra, *Survival Through Design* (New York: Oxford University Press, 1954); Richard Neutra *On Building: Mysteries and Realities of the Site* (New York: Morgan & Morgan, 1951).

13 Moholy-Nagy, *Vision in Motion*, 44.

14 Grant Featherston, 'Muscles on Their Chairs', (unpublished notes for a lecture c. mid 1970s, Featherston Archives, Ivanhoe, Victoria, Australia).

15 Paul Greenhalgh, 'Introduction', in *Modernism in Design*, ed. Paul Greenhalgh (London: Reaktion, 1990).

16 Interview with Mary Featherston, Ivanhoe, Victoria, Australia, April 29, 2007.

17 Mary began to involve children directly in the research process during the development and design of several interactive exhibitions for the Children's Museum at Museum Victoria, 1985-1993. She also developed and designed the Children's Museum itself, 1982-1985.

contemporary. While, clean lines, integrated flowing spaces, lack of ornamentation, diverse furniture typologies and combination of natural and industrial materials privilege Modernist ideals of the nature and technology, function and comfortable living—ideas inspired by Featherston's study of Scandinavian and Italian learning environments. Striking in their functional simplicity and purposefulness these environments respond to the children's expressed desire for their school to be pleasant, homely and welcoming.

Wooranna Park's refurbishment is attracting local and international interest having been promoted by government as a model for innovative, child-centred, learning environments and the mainstream exploration of progressive pedagogies. Importantly it provides a model for mainstream school interior design practice, where the designer worked with the school community to give form to its pedagogical vision and needs through design—melding functional, material, aesthetic, technological, social and cultural languages.

Seeking a critical framework to evaluate Wooranna Park and trends in new learning environments we discovered there is little published research either in education, architecture or interior design literature that interrogates the interior design of schools or the role of the designer in assisting a school community to identify its needs.¹⁸ Architectural research into school interiors tends to be quantitative, focusing on issues such as the economics of space, ventilation, health, heating and abstract ideas about space and comfort.¹⁹ Notable exceptions are Burke's and Mark Dudek's work defining school design as a distinctive historically and theoretical practice. Dudek's careful discussion of the architecture of schools is of particular interest, however he provides little detailed information about the interior design of schools.²⁰ The reasons for this lack of information are multiple including interior design's 'ambiguous relationship with architecture, which has both 'owned' it and 'disowned' it at different historical moments'.²¹ The role of architecture at a philosophical level being, as Forty explains, dedicated to the production of space.²² On a pragmatic level, funding allocations seldom include the interior fit-out and thus interior design sits outside the architect's brief with the choice of furniture, tools and technologies being left to facilities managers and equipment suppliers; a situation eluded to in architectural drawings where details are given about the built form but not about furniture typologies and spatial organisation nor their relationship to pedagogy.²³ Accordingly it is unusual to find integrated and holistic school designs, such as those under analysis, where the interior design is given equal consideration to the built form.

Burke and Grosvenor pointed us to the existence of historical precedents to current developments within progressive education movements in which Modernist designers played active roles in designing environments linked to pedagogical ideals. Burke's study of Eveline Lowe revealed a relationship between progressive pedagogy and interior design innovation, and highlighted the complex link between Modernist design thinking and progressive pedagogy theory.²⁴ Grosvenor's exploration of Modernist designers' involvement in driving change through exhibitions of school

18 Steve Higgins et al., *The Impact of School Environments: A Literature Review* (London: University of Newcastle, 2005).

19 David, 'Functional Dimensions', 175-194; John Baird, 'Aesthetic Factors in Adult and Child Evaluation of Space', in *Mind Child Architecture*, 89-109.

20 Mark Dudek, *Architecture of Schools: The New Learning Environments* (Oxford: Architectural Press, 2000); Mark Dudek, *Children's Spaces* (Amsterdam, San Diego, Calif: Elsevier/Architectural Press, 2005); Mark Dudek, *Schools and Kindergartens: A Design Manual* (Basel: Birkhauser, 2008).

21 McKellar and Sparke, *Interior Design and Identity*, 2.

22 Adrian Forty, *Words and Buildings: A Vocabulary of Modern Architecture* (London: Thames and Hudson, 2000), 256-275.

23 Prakash Nair and Randall Fielding, *The Language of School Design: Design Patterns for 21st Century Schools*, (Minneapolis, Minnesota, 2005), 29; Plan for Harbor City International School, Duluth, USA.

24 Catherine Burke, 'Inside Out: a collaborative approach to designing schools in England, 1945-1972', *Paedagogica Historica: International Journal of the History of Education* 45 (2009): 421-433. Burke and Grosvenor, *School*, 140-143.

interior design²⁵ lead us to question how aspects of the design language of progressive schools have, through a process of representation and dissemination, come to be used at moments of school building reform to signify 'new' and 'transformative'.

Progressive school design

Progressive schools draw on constructivist education ideologies which place the child at the centre of learning and emphasise the importance of the environment—spaces, teachers and technologies, to experiential learning, often termed 'learning by doing'.²⁶ The term 'progressive' situates these schools counter to mainstream education pedagogy with its traditions of teacher-dominated instruction, rote learning, order and discipline.²⁷ Burke and Grosvenor also use 'progressive' to imply links between constructivist education and Modernist theories about children, creativity, design and society; links which inspired Modernist architects including Walter Gropius, the Saarinens and Neutra to become engaged with school design.²⁸

Historical evidence indicates interest in progressive school design has peaked during the modern schools or schools for the future movements that recurred throughout the twentieth century. A feature of these movements, as Dudek, Burke and Grosvenor note, is the linking of design innovation and progressive pedagogies, and education reform.²⁹ Our selected schools reflect the time and circumstance of their development. Neutra's Corona Avenue and Saarinens' and Perkins' Crow Island were promoted as models for the 1930s modern school movement that accompanied the international spread of Modernism. The Medds' Eveline Lowe reflects the 1960/70s cultural and social revolutions and education reform movements when alternative pedagogies took on a new currency.³⁰ Common to all is the central idea of 'work' expressed in their interior design as learning through doing, where doing includes construction, experience, exploration and play. This signals a relationship between child and teacher that is fundamentally different to that of master and pupil. Instead, guided by the teacher, the learning journey is one that child and teacher share.³¹

The distinguishing feature of progressive school design is the holistic development of democratic child-centred environments through the detailed consideration of the interior design. Designed by Modernist architects with strong ideas about education, our three schools are exemplars of organic functionalism with every aspect down to the door handles, light fittings and toilets designed with consideration to child development. They are examples of designing from 'the inside out', whereby the design process begins with the identification of the community's needs before working outwards to shape the architectural form. With their ideological roots in Rousseauian ideas about the child and environment, and the subsequent theories of Froebel, Pestalozzi, Montessori, Steiner, Dewey and others, they privilege the importance of the environment, natural and designed, to children, education and creativity.³²

Significantly, these reforming pedagogical theories underpinned the formation of the Bauhaus and the development of architecture and design education. J. Abbot Miller and Marty

25 Ian Grosvenor, 'The Art of Seeing: Promoting Design Education in 1930s England', *Paedagoica Historica: International Journal of the History of Education* 41 (2005): 507-534.

26 Thomas Duffy and Donald Cunningham, 'Constructivism: Implications for the design and Delivery of Instruction', <http://iris.nyit.edu/~kkhoo/Spring2008/Topics/Cons/ConstructivismImplications.pdf> A Rousseauian idea often attributed to Dewey, 'perhaps its greatest proponent'. Burke and Grosvenor, *School*, 13. Dewey Laboratory School at the University of Chicago 1896, former residence (refurbishment). 'Furniture consisted of tables and chairs that could be arranged according to the activity'.

27 Mark Dudek, 'Origins and Significant Historical Developments' and 'The Educational Curriculum and its Implications' in *Architecture of Schools*, ed. Dudek, 1-71; Burke and Grosvenor, *School*, 35-37.

28 Burke, 'Inside Out'. Grosvenor, 'The Art of Seeing'.

29 Dudek, *Architecture of Schools*. Burke and Grosvenor, *School*.

30 Burke and Grosvenor, 'The 'Expanding School' and the 'Exploding Classroom' in *School*, 119-153.

31 Norman Brosterman, *Inventing Kindergarten* (New York: HN Abrams, 1997), 33.

32 M. Bax, Bauhaus lecture notes: 1930-1933, *Amsterdam* (Architectura & Natura Press), 14-15. Brosterman, *Inventing Kindergarten*.

Bax argue Froebel, Pestalozzi and Montessori had a considerable impact with Gropius using their theories about children and creativity to shape the individual-centred, experiential methods of Bauhaus education.³³ As a purpose built school of architecture and design, Gropius' Dessau Bauhaus building, 1926, set the principles for progressive education design by encouraging new relationships between inside and out and the development of new types of furniture and task-specific learning spaces using the latest materials and technologies. This Modernist nexus of progressive education and design for social reform was disseminated internationally through influential exhibitions and publications, including Moholy Nagy's *The New Vision*, 1938, and *Vision in Motion*, 1947, and the diaspora of Europeans to the UK and later America, including Gropius, Marcel Breuer, Moholy-Nagy, the Saarinens and Richard Neutra.³⁴



Child-centred school interior design

CORONA AVENUE SCHOOL 1935, CALIFORNIA, USA. Architect: Richard Neutra, Photographer: Julius Shulman. Title/Date: Corona Avenue School, 1953. © J. Paul Getty Trust. Used with permission. Julius Shulman Photography Archive, Research Library at the Getty Research Institute (2004.R.10)

Corona Avenue, public elementary school, gave expression to Neutra's Modernist-inspired belief that 'Education, particularly at an elementary level, could be the venue for reform based on sheer cause and effect: good architecture is the foundation for a good education'.³⁵ An émigré to west coast America, Neutra avidly promoted his belief in the power of design as an organic life force to create harmony and beauty in an increasingly artificial world, within publications such as *Survival Through Design*.³⁶ His architecture was characterised by an engagement with nature, landscape

33 J. Abbot Miller, 'Elementary School', in *The ABCs of [triangle, square, circle]: The Bauhaus and Design Theory*, eds Ellen Lupton and J. Abbot Miller (New York: Herb Lubalin Study Centre of Design and Typography, 1998), 4-21; Bax, *Bauhaus Lecture Notes*, 19-20.

34 Neutra, *On Building*.

35 Barbara Mac Lamprecht, *Richard Neutra: Complete Works* (New York: Taschen, 2000), 112.

36 Neutra, *Survival Through Design*.

and perception especially through the use of glass to bring the indoor out and the outdoor in. His ideas, which informed the plan for Corona Ave, struck a cord with several Los Angeles educators who saw it as 'the ideal setting for Dewey's 'learning by doing.'"³⁷

Neutra's design was innovative in its horizontal arrangement of five classrooms and two kindergarten rooms linked by a covered walkway, and the manner in which the L-shaped building was grounded in the landscape. An innovative use of modern materials, especially steel and plate glass introduced the language of modern technologies, including building, manufacturing, engineering and lighting that formed the basis of a new design language for schools. As Burke writes glass as a symbolic material language speaks of light, truth and transparency, each signifiers of a new education movement.³⁸ An expanse of glass on the building's west side in combination with smaller, clerestory windows on the east provided bi-lateral lighting and ventilation, allowed fresh air to be drawn into and through the space, giving children and teachers freedom to work anywhere within the classroom in good natural light. The large windows could be shaded with awnings, or exposed to maximise the effect of solar warmth within the classrooms.

Photographs show that the radical spatial organisation of Corona's interiors was designed to facilitate a culture of inquiry and discovery. Work settings were designed by purposeful arrangements of furniture to support various work modes in an active learning environment, as opposed to a conventional classroom's one work mode.

Neutra explained: The old time listening school where children were taught in an academic way could get along well with fixed seating arrangements and with desks screwed to the floor. The teacher faced the pupils and poured instruction into them. Now the teacher has become an active member of the group who works freely around the classroom, constructs, sews, dyes, handles all the material and tools with the children.³⁹

Thus chairs arranged in a semi circle facing the blackboard appear indicate conferencing, discussion or debate; tall benches against the western window suggest display, construction and experiment; and open shelves provide ready access to materials. Tables and chairs arranged in the centre of the room suggest individual work and quiet study while an arrangement of four tables with chairs facing one another indicate collaboration. The diversity and flexibility of work settings, both inside and out, was made possible by the selection of lightweight, movable, child-scale, timber furniture that unlike desks with fixed bench seats could be easily reconfigured to support different modes of work.

Neutra insisted that nature be accessible so each classroom opened onto its own outdoor space via a sliding glass door. The removal of walls and doors, both metaphorically and physically, permitted 'the potential flow and connectivity believed to be crucial to the learning experience'.⁴⁰ Photographs taken in the 1930s and 1950s highlight the indoor/outdoor connection in an expression of Neutra's drive to humanise an increasingly industrial world. They also reference the Open-Air Schools and American Playground movements and the concern with personal hygiene, fresh air, sunshine, rest and recreation for the wellbeing of children.⁴¹ While chairs arranged in a democratic circle straddling the threshold between inside and outside suggest a fluidity of movement between nature and culture and locate children's work as natural.

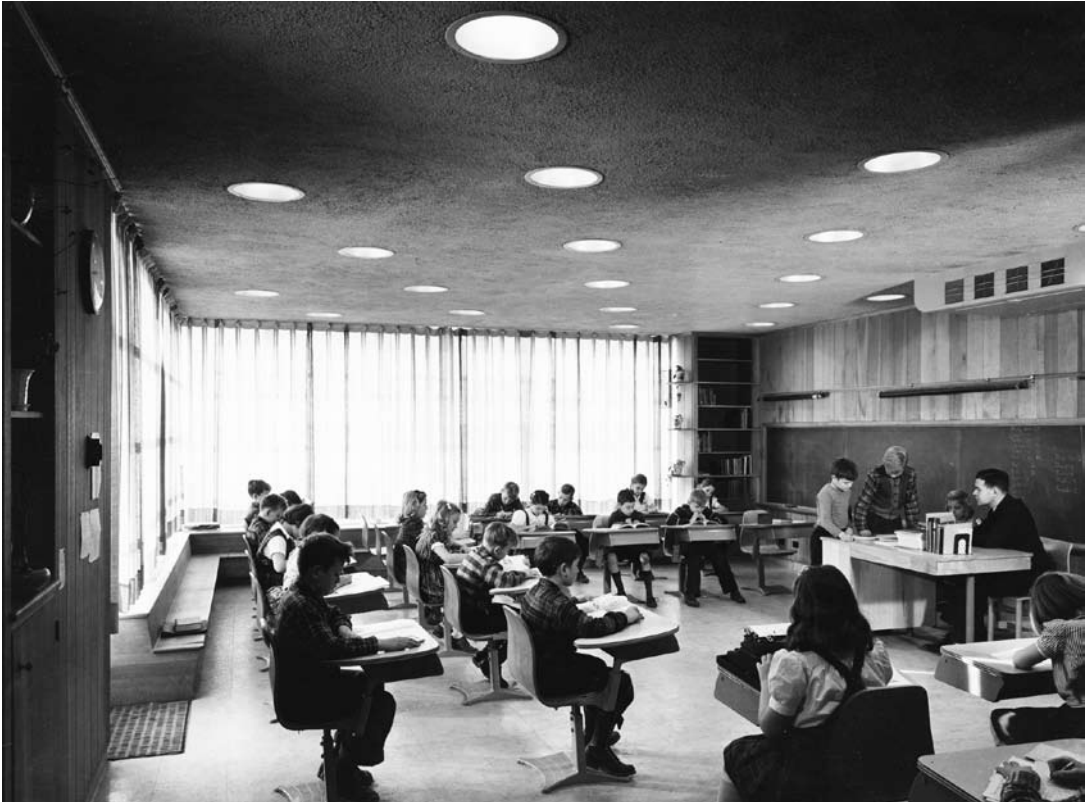
37 Thomas S. Hines, *Richard Neutra and The Search for Modern Architecture* (New York: Rizzoli, 2005), 181.

38 Catherine Burke, 'Light: Metaphor and Materiality in the History of Schooling', in *Materialities of Schooling*, eds Martin Lawn and Ian Grosvenor (Oxford: Symposium Books, 2005), 125-143.

39 Dudek, *Architecture of Schools*, 68.

40 Burke and Grosvenor, *School*, 128-129.

41 Burke and Grosvenor, *School*, 68, 71, 82-83; Dudek, *Architecture of Schools*, 27-28.



CROW ISLAND SCHOOL 1940, WINNETKA, USA. Architects: Lawrence Perkins with Eliel, Eero & Lily Saarinen, Photographer: Hendrich Blessing. Title/Date: Crow Island School, Winnetka, IL: Classroom, Date Unknown. © Unknown. Used with permission. Saarinen, Eero, Collection Manuscripts & Archives, Yale University (Box 58 folder 16 image 9910)

Crow Island designed by Perkins in collaboration with Finnish Modernists Eliel, Eero and Lily Saarinen, was influenced by Corona Avenue, and significantly photographic representations of it also include interiors and children and teachers at work. The Saarinens, having settled in California, were driving reform of American art and design education through Bauhaus-inspired pedagogy at the Cranbrook School of Art. Crow Island's design aesthetic, which was organic, natural and homely, was reflective of Scandinavian Modernism's combination of natural and industrial materials, and what Burke and Grosvenor describe as 'an architectural humanism characterised by an interest in the behaviours, feelings and aspirations of the people inhabiting the buildings'.⁴²

Perkins collaborated with educators and the school community to develop a child-centred environment that the superintendent of Winnetka Public Schools in 1941, described as '...the architectural expression of an educational philosophy...the philosophy of progressive education'.⁴³ Observing children and teachers at work for a year before commencing the design, Perkins identified six modes of work around which to develop diverse and purposeful classroom interiors: 'individual academics' for work defined by a child at a desk, 'group academics' for work done together such as, a story corner for young children or a committee for older children, 'individual activity' for work

⁴² Burke and Grosvenor, *School*, 129.

⁴³ Design Share 'Interview with Beth Herbert', DesignShare <http://www.designshare.com/index.php/articles/interview-beth-herbert/>

such as construction or experiment, 'group activity' such as role-play where a whole class works collaboratively, and provision for 'toilets' and 'storage of clothes'.

Forty's claim, that '...design has been used to represent ideas about the nature of work and about the behaviour expected of people doing it'⁴⁴ is manifested in Crow Island's distinctive furniture and spatial typologies and the working relationships they suggest. Eero Saarinen's ergonomic, moulded plywood tablet chair, for example, was designed to support students in upright concentration, their attention oriented towards the blackboard and teacher's desk. The chair's proportions reflect Montessorian ideas about children's physical development⁴⁵ and the angled tablet with storage provision expresses Modernist functionalism. Supported by a central stem anchored to contoured footplate the seat and tablet appear to float. The arrangement of chairs reads as a modernisation of the traditional academic classroom, which appears spacious rather than 'forested' with chair legs. Perkins also used lightweight, moveable furniture, which he explained, 'resulted in a lot of relationships other than the authoritarian teacher facing and glaring at the students'.⁴⁶ For example, students worked at tables facing one another for group academics, while tables were arranged in small groups, side-by-side for individual academics and activities.

Crow Island gave spatial and functional expression to the physical and psychological development of children by using 9ft ceilings to establish child-scale spatial proportions and introducing natural timber-panelled walls to create a homelike atmosphere. Books and resources were accessible on open shelves and pot plants humanised the architecture metaphorically suggesting that beauty and decoration in schools should be, as in nature, organic and living. Each classroom door was painted a primary colour to help children navigate without room numbers, details like doorhandles and toilet seats were positioned at child height, and blackboards, no longer the exclusive domain of teachers, were positioned low to encourage children to use them in self-directed learning. Built-in furniture was also designed to suit children of different ages and development; window seats, for example, formed the foundation of a reading corner for young children, a setting for committee meetings and a private place to read for older children, while Saarinen's plywood bench seats in the auditorium were scaled from small, front row seats for young children to larger seats for adults at the back.

Learning through doing: a completely new type of school?

Both Corona Avenue and Crow Island were unusual in their photographic representations of children and teachers at work in interior environments, and of inside outside settings with metaphorical references to design for life ideals. Given, the ideological commitment of the architects and their education collaborators, and that strategically directed photography was central to the Modernists' promotional system of publication and exhibitions, we can be confident that these photographs were ideologically intended to promote the link between progressive pedagogy and Modernism's ideal of design for life.⁴⁷ Technically excellent and innovative in their choreography these photos facilitated the promotion of the schools within the international architecture, design and education press as ideals for the modern school reform movements that accompanied the recovery periods after the Great Depression and World War 11. The artful photographs of Corona Avenue, for example, were extensively disseminated through significant journals and publications including *The New*

⁴⁴ Forty, *Objects of Desire*, 120.

⁴⁵ Dudek, *Architecture of Schools*, 18, 21.

⁴⁶ Betty Blum, *Oral History of Lawrence Bradford Perkins*, (Chicago: The Art Institute of Chicago, 1986), 64.

⁴⁷ Tim Benton, 'The Twentieth-Century Architectural Interior', 222. Neutra in particular was fastidious in ensuring that the photography of his work promoted his ideals, this included using the photographer Julius Shulman to photograph Corona Avenue.

Architecture 1940,⁴⁸ which brought the school to the attention of western audiences and helped establish its iconic status.

Viewed collectively the photos have a visual cohesiveness, a pattern language in the choice of viewpoints, lighting and the scenes depicted that presents a cogent narrative in which child-centred learning is conducted in a diverse learning environment which encompasses indoors and out. This narrative was repeated each time the photographs were reproduced helping to establish the link between progressive design and progressive pedagogy within the public imagination as occurred in post World War II Australia when the architect, Walter Bunning used images of Corona Avenue to propose that

Modern education, with its emphasis on 'learning through doing' and its concern with the physical and psychological well-being of the child demands a completely new type of school, designed not as a pompous public monument, but as a healthy, pleasantly encouraging background for children's activities.⁴⁹

The issue is how were these ideals translated into political rhetoric and used to promote a rhetoric of progress and social change within mainstream education in 1950s Australia. To what extent were these ideals of progressive pedagogy and progressive design able to be used for genuine change?

Bunning's *Homes in the Sun*, 1945, produced for the Ministry of Post-War Reconstruction was intended as a manifesto for the Modernist design-lead reconstruction of Australia. It promoted the modern school and community as symbols of the new, post-war Australia, at the heart of which was the child and the need for a new type of school which, through its concern with the physical and psychological well-being of the child, would support 'learning through doing'. Bunning used images of ideal schools of the future, including Corona Avenue and Impington Village College, Cambridgeshire UK, 1939, to illustrate his vision, in what is an instructive example of the dissemination of ideas about progressive school design and their integration into government reform programmes. Significantly the schools' architects, Neutra, Gropius and Maxwell Fry are not mentioned, thus reinforcing the mythic, ideal status of the schools.

The translation of the post-war ideal of the modernisation of education into the mainstream was captured in the *Woman's Day*, September 1956, article, 'Today's Pupils Learn in Luxury', which publicised the multi-million dollar, 'new' schools building program comprising over 1000 new buildings. The article's images show students working informally with their teacher in front of a curved blackboard, working independently in the drama hall, and playing outdoors in a garden setting in front of their new school with its extensive windows opened outwards in a metaphor of connectedness that gives emphasis to the progressive rhetoric of indoors and outdoors and of 'modern environment[s] of light, colour and freedom'.⁵⁰ Drawing on the government's press release the text describes the new school design with references to Modernist principles by stating that, 'From basic construction to the last detail of fitting, the emphasis is on function, efficiency and harmony'. It also expounds a belief in the transformative power of design in a manner that echoes today's rhetoric'.⁵¹

The article reveals the politics of school reform by conflating the rhetoric of progressive schools with those of economic and industrial efficiency. Emphasising the importance of schools as expressions of national prosperity and progress, it draws attention to the efficiencies of building

48 Dudek, *Architecture of Schools*, 68.

49 Walter Bunning, *Homes in the Sun: the Past, Present and Future of Australian Housing* (Sydney: WJ Nesbit, 1945), 80.

50 Rosalie Stephenson, 'Today's Pupils Learn in Luxury', *Woman's Day* September 3 (1956): 14-15.

51 Stephenson, *Woman's Day*.

standardisation required to meet the needs of 'a thousand new schools or major school extensions... being built in Australia'.⁵² It stresses the health, efficiency and safety benefits of the schools' advanced heating, lighting, ventilation and sound absorption, placing emphasis on special design features such as the concave 'Cinema-scope' chalk-boards that eliminated light sheen, and the extensive windows and Venetian blinds that facilitated the adjustment of natural light levels. 'Modern' materials, furnishing and fittings also signified change as blonde wood single or double desks and light chairs replaced the old long form desks, heavy duty linoleum replaced unsealed floorboards and new, washable paints replaced the 'muddy colours' of the past with contemporary colour schemes.⁵³

A major feature of Victoria's new schools was their 'colour schemes which... [took] full account of natural light and utility', and were designed by the new design professional the 'colour consultant'.⁵⁴ The introduction of colour in the 1950s school interior may have pointed to an interest in child psychology and the emotional effects of colour on children's behaviour. But what is significant in design terms is the employment of the colour consultant and the article's rhetoric around the school as an aesthetic environment. This coincides with the emergence of Interior Design as an accredited profession in Australia in response to the post-war consumer boom and its stimulus of a public enthusiasm for design, lifestyle and commodity culture that was celebrated in McKinnon High School's domestic science 'practice flat' which the *Woman's Day* featured in full colour.⁵⁵

An exercise in fashionable interior design, the practice flat was a work setting where girls learned 'through doing' how to be modern housewives and how to use a fashionable, interior design language to style a home. The increasing importance of interior design as a mode of cultural expression is evident in the interior of the flat which echoed that of the 1950s small home with its characteristic open plan, rationalised kitchen design, casual lightweight furniture and integrated 'modern' materials including plastics and laminates. In this 'real' environment, female students' work ironically involved the development of traditional skills like sewing—their aprons and hats for example. These traditional skills, however, were now augmented by skills in designing, managing and maintaining a light filled home interior, and the art of making it contemporary by mixing and matching fashionable colours, patterns and fabrics. Students also learned how to organise space and arrange contemporary timber furniture to create domestic settings that each supported a different mode of work—cooking and cleaning in the kitchen, dusting and polishing in the lounge and dining areas.

This image of work, at once contemporary and traditional, encapsulates dilemmas within Victoria's public education values and intent and the manner in which progressive design was used to suggest rather than drive real change. On one hand the contemporary design suggests education for a free and democratic world, while on the other hand the servant girl's hat and apron indicates social control. Despite the rhetoric of the new, here learning through doing is not about inquiry or discovery, rather it is traditional vocational education in designer apparel. Implicit in the image and its publication in a conservative women's magazine is the 1950s concern about the emergence of school truancy, the 'juvenile delinquent' and the role of schooling in social control. This is evident in an accompanying article on the perennial problem of juvenile delinquency, especially teenage girl shoplifters with 'time on their hands and not enough to occupy their minds'.⁵⁶ For all the rhetoric

52 Stephenson, *Woman's Day*.

53 Stephenson, *Woman's Day*.

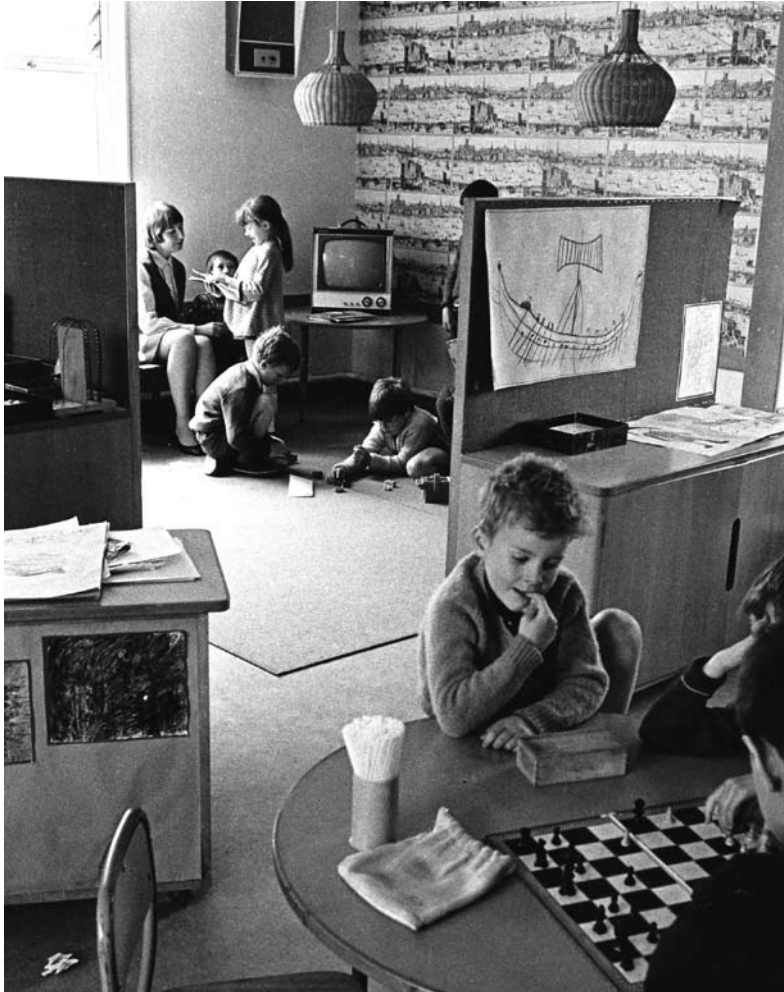
54 Stephenson, *Woman's Day*.

55 John Murphy and Judith Smart eds, 'The Forgotten Fifties: Aspects of Australian Society and Culture in the 1950s', *Australian Historical Studies* 109 (1997).

56 Nan Hutton, 'First Bulwarks Against Delinquency', *Woman's Day* September 3 (1956): 16.

of design-driven educational transformation, at McKinnon High the work of teachers was to ensure girls were being developed as 'decent well-adjusted citizens'.⁵⁷

While the Victorian Education Department had idealistic postwar aspirations to introduce progressive pedagogy throughout the 1950s the indications are that the changes were underpinned by traditional ideas. Furthermore, as with today's economic crisis, political and economic pragmatism counteracted visions of transformative school design as the postwar baby boom, increased migration and lowering of the school entry age, created enormous pressure for fast and efficient methods to house a burgeoning school population resulting in the use of imported prefabricated Bristol classrooms.⁵⁸



A well established practice: child-centred interiors

EVELINE LOWE PRIMARY SCHOOL 1966, LONDON, UK Architects: David And Mary Medd, Photographer: UnknownTitle/Date: Interior Image of Eveline Lowe School, 1960s. © Crown copyright. Used with permission. Institute of Education Archives, University of London (ABB Box 28 file 30).

⁵⁷ Hutton, 'First Bulwarks'.

⁵⁸ Email interview with Carla Pascoe, 24 November, 2008, on her PhD research into children in physical environments in the 1950s.

As mentioned, progressive school design seems to come to mainstream attention during moments of contest and shift in education theory and policy. The 1960s was such a moment and inspired the Medds' design of Eveline Lowe, whose child-centred interior design patterns echo those of Corona Avenue and Crow Island. In a continuance of the Modernist practice of designing from the inside out, Medds began by working with the school community to identify its needs which they then mediated through a collaborative process with local authorities.⁵⁹ Influenced by Ralph Crowley's theories about the physical and psychological wellbeing of children, their process and role as mediators were driven by the fundamental needs of children and teachers.

Needing to furnish the school, the Medds discovered that conventional school furniture for children was grossly inadequate so David undertook some crude anthropometric research from which he developed linoleum-topped tables in four heights to cater for the developmental needs of children across different age groups.⁶⁰ Their design was driven by functional needs; hollow steel frames made them light and easy to move, the material language of the new linoleum tops spoke of function, technology and progress and they were easy to clean. Trolleys were designed to provide ready access to children's personal belongings stored in plastic tubs. These could be fitted with a blackboard or a display board, making them both freestanding work settings and flexible, movable screens that could be easily reconfigured into larger work settings,⁶¹ often in concert with round 'domestic' tables.⁶² This furniture was subsequently available to mainstream schools.

The Medd's interior design language engaged with the 1960s concern for the social, psychological and cultural dynamics of spatial environments,⁶³ which they explored through the selection of colour, texture, materials, furnishings and lighting. They introduced the language of home, comfort and security to school design through choice of paint colours and use of fashionable wallpaper, woven cane light fittings and floor rugs. Similarly social relationships, that were more like those of siblings than classroom peers, were fostered by the interconnectedness of the open plan spaces that encouraged children of different ages to socialise and collaborate through games and play.

Conclusion

Historically progressive schools that privilege children's work and the value of learning through doing have stimulated innovative school design from Modernists designers committed to social change. Collectively, Neutra's Corona Avenue, the Saarinen's and Perkins' Crow Island, Bunning's ideal modern schools, the Medds' Eveline Lowe and, more recently, Featherston's Wooranna Park, point to the existence of an interior design pattern language that gives material form to social constructivist theories of childhood, education and environment. In each case, a genuine concern for the needs of children and collaboration between pedagogically aware architects, innovative educators and willing school communities was critical to the development of democratic, child-centred learning environments. While individually distinctive, these schools' interior design is characterised by a holistic concern with developmental stages, child proportions and details, flexible, lightweight, child-scale furniture for different modes of work, diverse and purposeful settings, spatial transparency, and the integration of the latest technologies, tools and materials with the organic as in natural light and inside and outside settings.

59 Burke, 'Inside Out'.

60 Gillian Naylor, 'Furniture for the Primary School', *Design* 222 (1967): 30-32.

61 Naylor, 'Furniture', 28-37.

62 Burke and Grosvenor, *School*, 143.

63 Edward T Hall, *The Hidden Dimension* (New York: Doubleday, 1966); Rob Walker, Ron Lewis, Peter Lane and Caroline Coles, *Changing Classrooms, Text, video and Audio* (Victoria: Deakin University Press, 1993)

The notion that innovative school design can drive pedagogical change has been partially fostered by the photographic and print media's promotion of ideal schools of the future and the dissemination of progressive ideas into mainstream political and educational rhetoric. However, as the new schools rhetoric of 1950s Australia indicates, the extent to which the ideals of progressive education were genuinely embraced varied considerably as illustrated by the stylish 'practice flat' with its a superficial engagement with design and subtext of social control. Given the gap between the photographic ideal and the mainstream reality, it is difficult not to question whether the legacy of the progressive school design lies not in meaningful educational reform, but in the continuing rhetorical claim that 'transformative' design can 'drive' pedagogical change.

Concluding with Eveline Lowe we returned to 1960s and 1970s when Mary Featherston began designing learning environments for children, stimulated by the same international excitement about ideas in progressive education as the Medds. In Australia, this excitement was reflected in the establishment of alternative schools including Steiner, Preshill, Montessori, Reggio Emilia and community schools, all privileging the centrality of the environment to learning. Like the Meeds, Featherston's work is grounded in Modernist philosophical, functional and aesthetic ideals including the importance of children and creativity to social wellbeing. Her holistic, interior design language similarly draws on the Modernist ideal of designing from the inside out in order to identify the fundamental needs of children and their educators and ensure that pedagogical practices are supported by the designed environment.

As researchers we are particularly interested in the current adoption of social constructivist pedagogies by mainstream education and the implications for the design of new school interiors. Featherston's collaboration with mainstream school communities in designing child-centred learning environments suggests the possibility of genuine change. With government support in the experimental context at Wooranna Park, she has developed a contemporary interior design language, furniture range and design process to assist mainstream schools, with Wooranna becoming a model for the future. Our concern is, that given pressing political and economic demands, and the lack of knowledge about school interior design, whether the current rhetoric of transformative design will bring real change. Rather design may be used as window dressing to create an impression of change and we will see a retreat back to conventional classroom practice and the one work mode it promotes.

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