Institutionalising Design Education and Design Promotion in Australia: From early British influences to wider international engagement

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Abstract
Industrial design has grown in Australia from a series of unnamed activities clustered about an emerging 19th century manufacturing industry into a recognised profession. This transformation largely occurred because of the emergence of specific design education and the support offered by professional design associations.

Designers working for the early Australian manufacturing industry were given technical education in the areas of engineering, draughtsmanship and foundry work from 1827 onwards in Mechanics' Institutes. It was from this technical base that the early 'designers' working for industry sprang. Technical Schools, Schools of Art and Schools of Mines and Industries all offered training for the designer before industrial design was finally offered as a course of study at tertiary level after WWII. Concurrent with this, professional associations arose to support the emerging industrial design industry in Australia. Nineteenth-century precursors to "modern" design education - Mechanics' Institutes, Technical Schools, Schools of Art, Schools of Mines and Industries, Junior Technical Schools, Apprenticeships and Secondary School design education - will be surveyed. As with many countries, WWII was a catalysing time for Australian industry as the country geared up production. At the conclusion of hostilities, Australia's first specific Industrial Design course at tertiary level was born.

The purpose of this paper is to show how industrial design activity in Australia has become a profession. An early British lead in both design education and professional design associations was soon broadened to include other international models, as the Australian design industry and Australian society generally, looked to countries other than the 'mother land'. This paper argues industrial design activity was expanded in every way by the experience of mass-production of goods for the war effort, by new immigrants arriving in this country who often had skills lacking locally, and by the new opportunities offered by the post-war reconstruction programmes. Industrial design was formalised as a profession by industrial design education at tertiary level and the assistance offered to industrial designers by professional associations.

Key words
Australia, Bauhaus, Carnegie Corporation, Design Education, Imperialism, Industrial Design, Ludwig Hirschfeld-Mack, Ulm

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Early training in Mechanics' Institutes

Australian designer Gordon Andrews has recently reflected on his father's experience of designing for industry in the 1920s, and his own industrial design work undertaken in the 1940s-1960s: "...in the days when my father was carefully and efficiently designing his products, the discipline had no name" (Andrews, 1993: 53). As Andrews suggests, the industrial design discipline arguably had neither a professional identity nor enjoyed public recognition until around WWII. Supporting this contention is the fact that the first Australian industrial design course was offered at tertiary level in 1945 (Mein, 1946:57). Despite this rather recent history, manufacturing had long been a strong part of the Australian economy, and early 'designers for industry' were part of its success. For example, the Foy & Gibson company's trade catalogue of 1923 reveals the diversity of pre-WWII Australian manufacturing: furniture, cooking utensils, laundry equipment, sporting equipment and musical instruments were all made locally.

Many decades before the largest Australian cities established universities (Sydney in 1850 and Melbourne in 1853), Mechanics' Institutes provided libraries and courses of lectures on science, literature, history, music and art. Large towns and cities in all Australian States had Mechanics' Institutes. Formed originally in Scotland to instruct workingmen in their various trades they were later to include general education. Britain's first Mechanics' Institute was opened in 1800 by George Birbeck who established a class for journeymen mechanics in Glasgow. He went on to establish the first Institute in London in 1823. (McCalum, 1983:4). Only four years later a Van Diemen's Land Mechanic's Institute was established in Hobart. Other Australian Institutes sprang up: Sydney gained one in 1833; one was formed in Newcastle two years later, in Adelaide in 1838 and Melbourne in 1839. By 1880, Australia's most populous state, New South Wales, had 70 Mechanics' Institutes. All had libraries and presented lectures on myriad topics for the betterment of the workingman.

Technical Schools, Schools of Art, Schools of Mines and Industries

There was a strong linkage between the education provided for adults in the Mechanics' Institutes and the development of technical training for adolescents through the early Schools of Mines, Technical Schools and Junior Technical Schools (Murray-Smith, 1966). In the State of Victoria, where much of the nation's manufacturing and

therefore industrial design training and jobs were soon to be located, Technical Education began in 1868. By 1885 there were 36 of these Schools in the State. All taught freehand drawing and painting, while some taught geometrical, mechanical and architectural drawing. Recognition of the importance of early Technical Education was summed up in an exhibition held in 1934:

> The efforts being made to establish Australia as a manufacturing country in the face of keen and well-organised competition from highly industrialised countries, should be sufficient to emphasise the need for providing the skilled craftsman and the foreman of the future with every opportunity of obtaining the highest degree of proficiency in their work. A knowledge of the fundamental principles of his trade, the ability to understand drawings, and some definite experience in those allied sections of his work which cannot at present be taught in the employer's workshop, are some of the attributes which technical education brings to the craftsman. (Education Department of Victoria, 1934:5).

The array of full-time Diploma courses (30 hours a week) offered in the 27 Victorian Technical Schools suggests how Australia was responding to the perceived need to industrialise more fully. These included: Applied Chemistry, Applied Science, Applied Art, Architecture, Building and Contracting, Commerce, Agricultural Engineering, Automotive Engineering, Chemical Engineering, Civil Engineering, Electrical Engineering, Municipal Engineering, Mechanical Engineering, Marine Engineering, Mining Engineering, Refrigerating Engineering, Metallurgy, Institutional Management and Needlecraft.

Many of these Diploma and Expert Certificate courses taught skills that enabled students to go on to design for the local manufacturing industries. Further, a wide range of trade subjects were available to train Australian workers for factories. These included: Armature Winding, Blacksmithing, Boilermaking, Brass Finishing, Cabinet Making, Coach and Motor Body Building, Coach and Motor Body Trimming, Coach and Motor Body Panel Beating, Instrument Making, Machine Knitting, Machine Shop Practice, Metal Founding, Milling and Gear Cutting, Motor Mechanics, Oxy-acetylene Welding, Process Engraving, Sheet Metal Work, Toolmaking, Toy Making, Wireless Mechanics and Wood Machining. (Education Department of Victoria, 1934:18). A wide array of technical training needed for an emerging industrialised nation. It should be remembered that, despite the strength of Australia's rural mythology, more Australians since Federation in 1901 have lived in cities and worked in factories than on the land.

Junior Technical Schools

Junior Technical Schools were developed as an alternative to Secondary Schools, offering 'general and cultural education' and specifically, 'pre-vocational training in Science, Art and Trades' for children aged over 12. The first Junior Technical School for boys in Victoria was opened in West Melbourne in 1912 where boys already holding a Merit Certificate were offered a one year course in 'general educational subjects and manual work.' The course of study was increased from one to two and then to three years, and the criteria for entry was brought down to satisfactory completion of Elementary School (now called Primary School). In 1916, 4 years after their inception, a girls' Junior Technical School was established at Swinburne Technical College in Melbourne (Education Department of Victoria, 1934:9).

The aim of the Junior Technical School was 'To assist students, by means of this training, to determine the class of industrial and technical work for which they are best suited.' At these Schools, one half of students' time was spent studying the general subjects, which their contemporaries at Secondary Schools also undertook: English, History, Geography and Mathematics. The remaining half of Junior Technical School students' time was spent equally studying technical and freehand drawing. For boys, 'practical work' was comprised of woodwork, sheetmetal work and machine-shop engineering, while girls studied cookery, dressmaking, millinery and decorative needlework (Education Department of Victoria, 1934:8-10).

Apprenticeships

The attempts to train young men in various trades (some of which - cabinet making, boiler making and fitting and turning are relevant to the history of industrial design and manufacturing in Australia) has been a 'hands on', experiential, method of technical training and an alternative to institutional training. These were based on British models, and there were no Australian apprenticeship programmes for girls at this time. The quality of these programmes across the nation was variable. The Sydney apprenticeship system seems to have been beset by ongoing criticisms. From as early as 1904 the Knibbs Report found conditions were unsuitable for apprentices, as did a later survey by the Board of Trade in 1922. Many attempts were made to remedy the situation. 1937 saw the establishment of full-time day pre-apprenticeship classes for pupils with at least two years of Secondary Schooling. Even this was not enough to satisfy critics. The American Carnegie Corporation-funded report found the apprenticeship system in New South Wales (like that of Britain on which it was modelled) was poor. The

programmes in all other Australian States were judged adequate. Western Australia was the first State to include theoretical studies into otherwise practical apprenticeship training. The 1925 Arbitration Act was amended to provide half a day of instruction each week for apprentices. Victoria's system followed this lead. In 1927 the Apprenticeship Commission (under the Department of Labour in Victoria) was set up by an Act of Parliament and day classes for apprentices were established. Two years later, amendments to the Queensland Apprentices and Minors Act resulted in similar day classes for apprentices (Cunningham, in Spencer, 1939: Appendix, VI).

American-funded reviews of Australian technical education

In 1939, the American Carnegie Corporation funded a report entitled *Technical Education in Australia and New Zealand*, the first review of technical education in Australia to be undertaken. The report was written by an Australian, F. H. Spencer, but like so many others in cultural activities in Australia at this time, he measured local accomplishment against that of Britain.

In its review of the Technical Colleges of Australia's largest city, Sydney, the report found both the buildings of the main Technical College and the East Sydney Technical College were inadequate and recommended new buildings be erected. The report also found the standard of the staff at the College was good although it found 'the surface impression carried away was that they were somewhat below the general British level.' In summary the report found that, in comparison with Melbourne, Sydney's technical education system was poor. Given that Sydney's population was 25% larger and its manufacturing base almost as large, it was wondered why Sydney had only five branch technical colleges, while Melbourne had twelve. Educational institutions in other capital cities were also assessed by the *Technical Education in Australia and New Zealand* report. It concluded that the Adelaide Technical College (founded in 1927) alone of all the States had buildings suitable for the educational purposes to which they were put. Worst were the buildings of the Perth Technical School and the Hobart Technical School which were pronounced to be on a level of 'disgraceful inefficiency' (Spencer, 1939:73 – 76).

Secondary School education

Some consideration of industrial design 'issues' was made at State Secondary Schools for children aged over 12. When British educator Joseph Burke first arrived in Australia in 1939, he observed that art teaching in Australia was very conservative. In his opinion, the method employed by the Royal College of Art, South Kensington, seemed the dominant influence in schools with Australian children being taught to draw 'correctly' (realistically). Burke believed this type of teaching did much to prejudice young minds against modern art.

In contrast to this perceived conservatism, a remarkable example of enlightened art and design teaching was developing at Geelong Grammar School. A past student of the Bauhaus, Ludwig Hirschfeld-Mack, taught at the school from 1946 - 1957. According to Burke, the Bauhaus-inspired teaching of Hirschfeld-Mack was unique: '...these experiments have not, to my knowledge, been continued in any other country, and I believe them to be of international importance' (Burke, in Smith, 1958:6). This is possibly an exaggeration for Hirschfeld-Mack himself acknowledged the Hochschule für Gestaltung in Ulm, and the Institute of Design in Chicago continued a range of Bauhaus teaching methods (Hirschfeld-Mack, 1963:17). It should be added, however, that these two international courses were conducted for tertiary students - the Geelong Grammar experiment might well have been unique amongst Secondary Schools where students are typically aged between 12-17 years.

Hirschfeld-Mack's approach to materials was very open and he urged his students to fold paper and make collages at a time when experimentation in Australian Secondary School art was unheard of - most schools encouraged painting and drawing only. Reade reflected the teaching was concerned with the 'formal' values of art - colour, balance, line, proportion, texture - and Hirschfeld-Mack encouraged analytical discussion of artworks along these themes. Hirschfeld-Mack stressed the belief that art was part of everyday life.

But this was an anomaly and there was no specific industrial design teaching on the syllabus of Australian Secondary Schools until 1958. At this time, films about the nature of the design activity made by Australian professional associations such as the Society of Designers for Industry were being screened at schools. A decade later, Secondary Schools included some consideration of industrial design issues within the English and Social Science courses. One text used in the 1970s was *Australia and the Seventies* (Fowler, 1970). In this publication, 32 condensed writings from key Australian texts in a variety of fields were reprinted amongst which was a condensed version of Colin Barrie's *Design*. Barrie's small book, published in 1962, was the first Australian publication specifically devoted to the local industrial design industry.

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Tertiary industrial design education in Australia
The State of Victoria's Education Department's 1934 review of arts and crafts education in Victoria recognised that this training could also help manufacturing. This is surely a pivotal moment for the beginnings of specific industrial design education in Australia:

> Manufacturers rely upon technical schools to give that training which will enable the fullest use to be made of our clays, woods, wool, and other natural resources. It is therefore gratifying to see the interest and assistance given to art education by employers...The development of secondary industries depends to a large extent on the art education of designers. (Education Department of Victoria, 1934:22).

Melbourne Technical College (now RMIT University) offered the first tertiary industrial design course for adults in Australia in about 1945 (Mein, 1946: 57). As with Geelong Grammar, a Bauhaus spirit pervaded the syllabus at the Melbourne Technical College. An early lecturer of note, Gerhard Herbst had been assisting Laszlo Moholy-Nagy with publications at the Bauhaus until the school's closure. He came to Australia in 1939 and spent years serving in the Australian armed services. He later joined the local company Prestige Fabrics designing fabrics and illustrating, and in the late 1940s became a part-time lecturer at the College. Herbst played a leading role in setting up general design studies for both the Melbourne Technical College's Industrial Design and Graphic Design courses (Newman, 1992:9-10).

The syllabus of the early Industrial Design Associate Diploma, outlined in the 1955 *Handbook of Syllabuses*, stressed the 'urgent need for the fully trained artist-designer, with an engineering and production viewpoint' to design for industry. Subjects within the course reflect this emphasis: 'Manufacturing Processes', 'Pattern Making', 'Advertising Design', 'Methods of Production', 'Industrial Management' and 'Market Research'. General subjects included 'History of Subject', 'English' and 'Drawing' (Royal Melbourne Technical College, 1955:152-153).

Melbourne Technical College's importance as pioneer of Australian industrial design education was proudly asserted by the Head of the School of Art, V. E. Greenhalgh when he wrote 'We were the first school to institute a course of Industrial Design in Australia, indeed even before it was introduced at the Royal College of Art in England...' (Greenhalgh, 1963:n.p.). That the Australian college chose to measure itself against the British, and in so jingoistic a manner, suggests Australian's perceptions of themselves as 'provincial'. This relationship with Britain was further reflected in the title of the College. While the prefix 'Royal' had been mooted for the Melbourne Technical College as early as the 1930s, it was not until the coming visit of Queen Elizabeth II in 1954 that the honour was bestowed upon the College. By this time the College was also referring to itself as 'sister institution' to the Royal College of Art, South Kensington (Murray-Smith and Dare, 1987: 306). While the culture of the Australian academies of learning was mostly influenced by Britain, the German influence of the Weimar Bauhaus, disseminated by the first-hand experiences of Gerhard Herbst and Ludwig Hirschfeld-Mack in Australian institutions, was also strong.

In 1963, Australia's first Design Congress, organised by the Industrial Design Council of Australia, Melbourne, lamented that there was still 'no degree course in industrial design in this country' (Scott, in Design Congress, 1963:28). Only Diplomas were awarded at this time. In 1972 the Associate Diploma of Industrial Design was complemented by a Fellowship of Industrial Design.

Post-graduate industrial design education in Australia
The University of New South Wales announced in 1968 that they were setting up the 'first post-graduate course in industrial design in Australia'. The aims of the new course were laid out in the journal *Design Australia*:

> To provide a broad education in industrial design for those who already hold degrees or equivalent qualifications. Although it is expected that many people with such qualifications will come from the professions of engineering and architecture, provision should be made within the course for any graduate with the necessary talents or interests, or students with equivalent qualifications. ('Industrial Design at University Level', 1967:16.)

The authority of the 'visiting expert' and 'deference to the overseas model', which pepper the history of industrial design activity in Australia, were again in evidence in this Design Australia article. The text began by stressing the trend overseas towards post-graduate education: 'An examination of design education throughout the world reveals a growing emphasis upon education for design at the post-graduate level.' Three key sources were cited as the inspiration for The University of New South Wales' proposed course: Professor Zagorski's post-graduate course at the University of Illinois' Design School (he had visited Australia in 1966); Misha Black, Professor at the Royal College of Art, London and frequent visitor to Australia; Professor Denis Harper, University of Manchester. Characteristically, the Australian University's course aims were similar to those expressed by the specific overseas

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models to which they deferred. For instance, the University of Manchester's Professor Harper was quoted as describing his course as:

> It is both a bridge between scientific and humanistic disciplines in technical and university education and a means of introducing the study of design at a level appropriate to its influences and importance in industrial society...it is aimed at students with graduate or equivalent qualifications in engineering, architecture, building, industrial design and human sciences. ('Industrial Design at University Level', 1967:16.)

This appears to have been similar to the aims of the University of New South Wales quoted above. There is no doubt that Australia's design education was based on overseas models, as was the country's industrial design culture and manufacturing culture generally. The article in *Design Australia* continued:

> Design education overseas is paying increasing attention to business management and industrial organisation. These matters will also be emphasised in this new course in which design will be linked with product development.

Further, the 'team teaching' initiated at the Chicago Institute by Jay Doblin was suggested as an example for Australia's proposed course. Under this approach, Institute lecturers were seconded from their various Schools to teach the industrial design students. The proposed lecturers for the University of New South Wales' post-graduate course came from the Schools of Mechanical Engineering, Business Administration, Architecture, Sociology, Metallurgy, Chemical Technology and Industrial Arts. This bold plan was postponed, however, and it was left to a Melbourne institution to develop the idea. The Royal Melbourne Technical College proposed offering post-graduate studies in 1968. The College administration suggested they should take an Australian lead and establish a Masters of Arts degree in Industrial Design in emulation of the programmes already offered at the Royal College of Art, London (Edwards, 1968:n.p.). In the event, nearly two decades were to pass before RMIT University (as it became known) offered such a post-graduate degree.

Australian industrial design professional associations

Australian industrial design practice was stimulated by the formation of an increasing number of professional associations to represent the industry. One of the earliest professional groups in Australia was the Women's Industrial Art Society in 1935. This was followed in 1939 by the Design and Industries Association. In 1940 the Australian Commercial and Industrial Artists' Association was founded. Eight years later The Society for Designers for Industry emerged as yet another professional body. While this body was primarily concerned with raising professional standards, Burke claimed it was also interested in public education through educational projects, exhibitions and publications. The Society of Interior Designers was established in 1951 and the Industrial Design Institute of Australia in 1958 (O'Callaghan, 1993:159-160). These associations played a public advocacy role creating films about design which were screened at various schools from the late 1950s. The Design Institute of Australia (DIA) is the current professional design body in this country representing industrial designers, interior designers and graphic designers and was re-named in 1983 following on from the amalgamation of earlier, smaller groups.

Conclusions

The transformation of Australian industrial design activity in Australia from a 'discipline [which] had no name' into a distinct profession occurred after WWII largely because of the development of specific tertiary education, and the support given to designer by the professional design associations. Education was largely shaped by British and, to a lesser extent, German and American models. The first industrial design diploma course in Australia was offered by the Melbourne Technical College in 1945, not long after comparable courses began abroad. The Bauhaus-inspired teaching of Ludwig Hirschfeld-Mack at Geelong Grammar School from 1946 to 1957 was considered by one leading educator to be unique in the world in that it was offered to Secondary School students as young as 12.

The array of different influences acting upon local industrial design suggest Australian industrial design has always been a response to international industrial design (Bogle, 1998:143). From 1827 onwards, local designers were trained in Mechanics' Institutes, then Technical Schools, Schools of Art, and Schools of Mines and Industries through to the Colleges of Technical and Further Education and Universities of today. From educational models developed in Glasgow and South Kensington through to the USA and Germany, Australian designers engaged with major Western design education trends.

Industrial design activity was expanded in every way by the experience of mass-production of goods for the war effort, by new immigrants arriving in this country who often had skills lacking locally, and by the new opportunities offered by the post-war reconstruction programmes. This paper has argued industrial design was formalised as a profession by industrial design education at tertiary level and the assistance offered to industrial designers by professional associations.

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The discipline which 'had no name' was finally transformed into the profession of industrial design.

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