Adaptive Master Planning
Making and Remaking the UNSW Campus 1949-1959

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The University of New South Wales was, along with the Australian National University, one of the first post-war greenfield campuses. Located in the south-east Sydney suburb of Kensington, a stable long-term vision for site planning was hampered by a constrained site which expanded incrementally. Design concepts were made and remade through City Beautiful, Beaux-Arts and Modernist styles through a succession of design plans calibrated to an expanding site. A key figure seeking to bring coherence to the early campus was Harry Rembert, Chief Designing Architect for the NSW Government Architect’s Office for twenty years and head of its innovative Design Room. Rembert understood the inherent design problems for an institution on a restricted but expanding site challenged by a difficult topography. He sought solutions to retaining human scale in an unavoidably dense setting through incorporating courtyards, under-crofts, wall and garden art, and links between building interiors and landscape, elements which he had observed on an overseas study tour. Despite modifications over the years, Rembert’s interventions are still evident today within a more stable and holistic master planning environment.

Keywords — campus planning; University of New South Wales; Harry Rembert; city beautiful; modernism.

INTRODUCTION

The design of university campuses as a strand of planning history connects local stories to broader narratives of higher education development and architectural, landscape and planning trends and innovation. In the post-world war two environment, what Coulson et al (2015) dub the “search for perfection” intersects with both a massive expansion of tertiary systems nationally and globally, and the triumph of modernism as a design movement (Muthesius 2000). The University of New South Wales had the distinction of being the first technological university in the British Commonwealth as well as the first “second” university in any Australian city. It was also one of Australia’s first post-war greenfield campuses. But unlike the two other institutions in this category – the Australian National University (1949, hereafter ANU) and Monash University (1958) – the University of New South Wales had a constricted site which grew incrementally and confounded preparation of an initial long-range master plan. Its foundation in an environment of functionality and austerity hampered a stable guiding vision of “perfection”. Its first decade is more a story of master planning on the run.

This paper follows the initial design phases of the new University campus, from the original layout prepared in 1949 for what was seen as an interim site, through replanning, re-orientation and modification as the site expanded, until the final portion of land was acquired a decade later. It commences with a discussion of the historical context which set parameters for the first layout, and then details the design responses to additional land allocations which permitted expansion of...
the university layout and the application of an alternate design philosophy. The influence of Harry Rembert, Chief Designing Architect and head of the Design Room of the NSW Government Architect’s Office, is then considered. The proposition explored is that Rembert’s insistence on considering the “human-scale” when planning for an unavoidably dense university setting encouraged design interventions which brought coherence to a restricted site with a difficult topography - interventions which are still evident within the more stable and holistic master planning environment today.

The official history of UNSW makes only passing reference to the spatial evolution of the campus (O’Farrell 1999), a built environment audit concentrates on contemporary architecture (Luscombe 2001), and one major published design narrative concentrates on the 1989 masterplan (Chesterman 2005). Disentangling the complex and previously untold approach to early site planning, this paper draws extensively on primary sources including minutes of committees, unpublished reports, plans, monographs and interviews held in university and state archives as well as accessible secondary sources.

**Foundation and Site**

Under discussion from early 1946, the university came into being as the New South Wales Institute of Technology on 27 August 1947 with the appointment of a “Developmental Council” by the state government. Designated the University of Technology on formal establishment in 1949 and later the University of New South Wales (hereafter UNSW), the primary objective of the new institution was to advance the training of technologists and scientists to world standard (Madden 31/10/46).

In 1947, the Buildings and Grounds Committee of the Council was given responsibility for the physical planning of the proposed Institute. This entailed assessing and arranging acquisition of a site available for an immediate start to construction, determining the nature and layout of the buildings and grounds, and ensuring these were equipped for immediate and long-range needs (Heffron 1947; NSW University of Technology 1950). The Developmental Council considered the minimum amount of land necessary for a full university was 40ha (100acres) and, after assessing possible locations, the Committee chose a 32ha (80ac) site in Darlington, adjacent to the University of Sydney. Acquisition of this site was postponed as the requisite resumptions were expensive and could not be concluded rapidly enough for immediate development. With limited vacant land in south-east Sydney, the area with highest population growth, the Committee was forced to accept a portion of a disused racecourse located on Crown land in Kensington (Madden 31/10/46; Developmental Council, 8/10/47). This site was judged to be inadequate for a full university and only accepted as a short-term measure until the Darling site became available; however, it ultimately became the permanent home for the new University.

The 24ha (60ac) former Kensington Racecourse was situated approximately 5 km (3 miles) by tram from Central Railway Station and was bounded by Anzac Parade to the west, High Street to the north, Randwick Park and a residential street to the east, and Barker Street to the south. It was primarily flat, sandy ground with a large sand-hill rising along the eastern boundary and a low badly-drained area in the south-west corner. The majority of the Racecourse, approximately 17ha (40ac) was reserved for the relocation of Sydney Hospital, while 9ha (24ac) Randwick Park on the high ground to the east comprised an oval and a nine-hole golf-course. The site offered to the Institute was an irregular-shaped 7.3ha (18ac.) portion fronting Barker Street (Figure 1), bounded on the north and east by hospital land and on the west by a reservation for the proposed elevated Eastern Suburbs Railway (Buildings and Equipment Committee 1947-77).

**The First Campus Layout, 1949-1950**

Looking inevitably to other Commonwealth nations for design inspiration produced little precedent for a technical university. However, the NSW Minister for Education, R.J. Heffron, noted that the technical universities of those countries which had challenged Britain’s industrial supremacy possessed “buildings of magnificence and beauty” and that a recent mission had returned from Europe impressed by new technical universities currently under construction (Heffron 10/6/48, 2). Heffron also acknowledged his particular indebtedness to the President of MIT, Dr Karl Compton, who visited Australia in 1946 and participated in discussions on the concept of a technical institute (O’Farrell 1999).

The design brief which eventually emerged was for an institution which would “bring… related processes under one roof… housed in such a way as to command community approval and pride, and to inspire confidence… [as] a first-rate institution” (CCC, 16 October 1946, 3).

The first site plan was designed by the Government Architect, Cobden Parkes, in conjunction with F.E.A (Tony) Towndrow, Head of the Architecture Department at Sydney Technical College and foundation Dean of Architecture, and presented to the Buildings and Grounds Committee of the University Council in March 1949 (Minutes 24/3/49). The accommodation comprised six over-sized buildings which surrounded a rectangular court with a major axis extending from the base of the sand-hill in the east past the low ground at the western end. A prominent podium and tower was planned for the high ground to the east, dominating the court and opposed by a terminal building at the western end whose curved façade framed a formal water basin at the lowest point of the site. The complex would be accessed from Barker Street through a ceremonial gateway.

Contrasting with the open park-like designs of both ANU and Monash, this first layout drew from the conservative City Beautiful paradigm, a popular American model influential on some Australian campuses before world war two (Coulson et al 2015, Freestone 2007). The City Beautiful-style is a structured and rectilinear refinement of the French Beaux Arts design concept, wherein the campus is conceived as a “static set piece” comprising a series of imposing and monumental buildings around major and minor axes which locate and define focal points, quadrangles and open space (Freestone 2007). The first plan satisfied all these criteria (Figure 2). In keeping with the City-Beautiful style, the layout emphasised...
Committee Minutes, 2/11/50). Still limited by the railway reservation to the west, the campus site now extended from Barker Street through the block to High Street (Figure 3).

A new layout encompassing the greatly expanded site was now required. The Director of Technical Education and first Director of the new university, Alfred Denning, arranged with Towndrow to prepare a tentative plan for consideration by professorial staff and the Government Architect. It was agreed that the plan should:

a) “be sufficiently flexible to allow for future alterations in the general conception of the development of the university site;

b) locate major buildings and building areas on the site, together with roads of access, leaving attention to detailed development until specific projects were more immediate;

c) relate to the general development of the area of 60 acres [24ha] comprising the whole of the old Kensington race course together with any adjoining areas, suitably defined, which it might be considered will be available to the University in the future.” (Exec Council Minutes 13/11/50).

Towndrow’s sketch plan informed the Government Architect’s Preliminary Diagrammatic Layout tabled at the Buildings and Equipment Committee meeting in May 1951 (Building and Equipment Committee Minutes 14/5/51). This layout (Figure 4) drew to some extent on the neo-classical Beaux-Arts design paradigm derived from Renaissance architect Andre Le Notre’s landscape designs and resembled the contemporaneous ANU design, incorporating long, straight, tree-lined vistas, rondels or rond-points inserted at intersections, and major buildings situated at the convergence of three radiating avenues (Barnett 2011).

1950-1952

Several years earlier, in July 1950, just as construction of the first building reached first floor level, the Building and Equipment Committee, “having been informed of the requirements of the University for the next five years and having considered the proposed buildings in relation to the present site” concluded that the restricted site made a “spacious and dignified” layout impossible to achieve, and recommended to the University Council that immediate steps be taken to acquire the remainder of Kensington racecourse (Council Minutes 10/7/50). W. C. Wurth, President of the University, entered into negotiations with the Hospitals Commission and the Public Buildings Committee under the Chairmanship of the Premier James McGirr and, by November 1950, both institutions had agreed that the 17ha (42ac.) allotted to Sydney Hospital should be added to the University portion, thereby making a campus of 24ha (60ac.) (Buildings and Equipment Committee Minutes, 2/11/50). Still limited by the railway reservation to the west, the campus site now extended from Barker Street through the block to High Street (Figure 3).

The Act founding the University of Technology was passed in April 1949 and construction of the first building commenced in the October. This building was Internationalist in style with a nod to Willem Dudok’s form of Dutch modernism, used nearly one million bricks to reach ground level, and was described as the “largest single block institutional building in Australia” (Council Minutes, 10/7/50). However, before its completion in late 1954, additional land was made available to the university and the original layout underwent major change.

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With access now possible from either street, the 1951 layout rotated the major axis of the campus through 90°. The earlier enclosed quadrangle became a wide landscaped axial vista through the centre of the campus and approached from a new entry from High Street on the north, with the Great Hall/library/administration building placed where the main vista and two radiating axes converged to form a grand piazza. A minor east/west axis formed a secondary piazza as it skirted the rear of the central building. The extended campus was thus divided into four quadrants focussed on and accessed via a central core. Buildings separated by courtyards in a formal grid-like layout were planned for the areas rising to the east, and the residue of the earlier plan configured around the original main building was included to the south-east. The north-west quadrant was designed to address the main approach to the site from the northwest with curved buildings kept “as low as is consistent with good architectural design so as to enhance the appearance of the ultimate building development in the background of the site from Anzac Parade” and the oval sited on the low ground to the south-west was also to be left open to the public view (Building and Equipment Committee, Minutes 18/10/51).

Although requested to draw up the concept, the Government Architect criticised the proposed aspect, arguing that High Street was “possibly too narrow to take the amount of traffic anticipated”, and suggested that any alternative design depended on acquiring the railway reservation thereby enabling an entrance from Anzac Parade together with a major east/west axis. In the interim, he proposed a new revised layout (Figure 5) where the main entrance reverted to Barker St and the main axis terminated at a proposed Chemical Engineering building (Building and Equipment Committee, Minutes 15/11/51; 24/1/52). A wider east/west pedestrian axis was introduced to form a grand vista from Anzac Parade together with a major east/west axis. In the interim, he proposed a new revised layout (Figure 5) where the main entrance reverted to Barker St and the main axis terminated at a proposed Chemical Engineering building (Building and Equipment Committee, Minutes 15/11/51; 24/1/52). A wider east/west pedestrian axis was introduced to form a grand vista from Anzac Parade, passing between the Great Hall and the library then continuing up the hill flanked by imposing facades to terminate at the centre-point of a range of buildings splayed across the eastern sky-line.

Discussions with the Minister for Transport confirmed the rail corridor and all agreed that a station serving the university would be situated where Anzac Parade met High St (Buildings and Equipment Committee Minutes 18/6/51). At the same time, the Committee re-affirmed the Developmental Council’s recommendation that 40ha (100ac.) was necessary for ultimate development and proposed that the University Council press for additional land to the south or east of the current site (Building and Equipment Committee, Minutes 18/10/51).

1952-1955

In March 1952 the University Council was informed the route for the railway had changed. (Council Minutes 10/3/52). Wurth approached Premier J.J. Cahill to have the railway corridor added to the university site and assent being given, the 1.4ha (3.5ac.) was vested in the University, although the need for resumption of Permissive Occupancies meant acquisition was not finalised until June 1954 (Cahill 15/2/54; Council Minute Paper 1/6/54). By this time, the Anzac Parade tram-yard located on a triangular portion of land opposite the University became redundant and the additional 2.7ha (6.6ac.) was also vested in the university (Figure 6). This was the last extension to the university site until 1959; the University now held 28ha (70ac.) (McLintock 1993). With unencumbered frontage to a major road, the campus layout duly evolved again.

The 1951 Layout was amended in 1954 to take advantage of the new frontage but the overall design philosophy continued to emphasise buildings which would enhance the academic status of the institution and provide greater floor-space within limited footprints. Elements from the Government Architect’s 1952 revised Preliminary Diagrammatic Layout were re-employed in the 1954 plan but now leavened by the introduction of a number of contemporary design features (Figure 7).
The minor east-west axis from Anzac Parade was widened and transformed into a major ceremonial tree-lined vista bordered by a series of multi-storey buildings as it stepped up the eastern hill to terminate at a central piazza flanked by the four schools of engineering now placed squarely into the steep slope. A relocated grand piazza was reserved for the Great Hall/library/administration block, and axial symmetry was still discernible in the retention of major and minor vistas, division into quadrants, and mirroring the oval in the south-west with a circular building to the north-west.

However, a Modernist design philosophy was brought to the campus with a new plan for the Applied Science precinct inserted behind the Main Building. This Second Stage group was formed by disarticulating the monolithic 1951 Applied Sciences building, giving five separate buildings placed seemingly at random in the space (Craig 1967). The introduction of Modernist concepts to the long-established neo-classical layout of UNSW signalled a major change in the campus design and was led by Harry Rembert, Chief Designing Architect of the NSW Government Architect’s Office (hereafter GAO).

**Harry Rembert and the GAO Design Room**

Edward Henry (Harry) Rembert qualified as an architect in 1924 and joined the “remarkably entrenched and conservative” GAO in 1926 (Webber 1982, 10). Although trained in a fairly traditional practice, his stylistic approach appears to have been influenced by the “modern movement” emerging in Europe during the early years of his career, initially the Bauhaus and later the work of Dudok (Webber, 1982). Reported to be unimpressed by the stark appearance of early modernist buildings, he chose to create functional buildings which used new techniques and materials but were simple, direct and designed with the user in mind. Among a large number of projects for the Department of Technical Education, Rembert prepared the Development Plan for the Newcastle Technical College in 1934. The plan was formal and symmetrical, but included “delightful” and “pleasant” courtyard spaces inserted between the buildings, a design element which featured strongly in his later work (Webber, 1982, 29-35).

In 1949, Rembert initiated a new section within the GAO. Known as the “Design Room”, established to recruit and develop talented architecture students and graduates (Saunders and Burke, 1976). Rembert’s goal was to build a team which could work to improve the quality of major projects and become the base from which overall design standards of the GAO could be revived (Webber, 1982). Peter Webber, a graduate recruit and later Government Architect, remembers Rembert as a good mentor, a “quiet, steadying influence” ready to pull the young generation into line if their ideas “got a little bit too outrageous” (Webber 2017). Included in the upcoming program of work from the mid-1950s were chemistry buildings for the University of Sydney and the UNSW Applied Science precinct, so in 1955 Rembert undertook a study tour of the US, UK and Europe to investigate and report on laboratory design and on innovations in international educational architecture generally (Rembert, 1955).

On his return, Rembert reported on the design quality of the various institutions visited. He recorded that he was overwhelmed by the vitality, “sureness, versatility and imagination” displayed by the Italian architects, and was impressed by the “sophisticated and elegant” designs of the Swiss and their techniques to provide needed accommodation on confined sites. Throughout Switzerland, he appreciated “the universal regard for human scale… the intimate relationships between buildings… blending of architecture, sculpture, painted and glass mosaics and murals… the splendid indoor and outdoor planting… which created an atmosphere of informal friendliness and fitness for purpose, both restrained and beautiful” (Rembert 1955, 5). Rembert particularly admired the Administration and Lecture Hall Block, Basel University and Congress Hall and University Hospital in Zurich, noted the designers’ deliberate avoidance of the monumental and its replacement with buildings of an intimate scale and small courtyards. He remarked on the visual reduction in building mass that was achieved through the introduction of walkways, under-crofts, wall mosaics, and landscape designs which integrated with the buildings and incorporated garden sculpture, street furniture, and detailed planting (Rembert 1955). These discoveries validated and extended his desire to include similar design features on the UNSW campus.
Consequently, the design of the new Applied Science precinct differed markedly from previous layouts and heralded a change in perception of the campus. The plan introduced stand-alone buildings of contrasting heights placed asymmetrically on the site, separated by landscaped courtyards and linked by covered walkways, cantilevered awnings and under-crofts (Figure 8). The precinct included open space extending in front of the main hall to form a paved apron merging into the main east-west axis and, although lacking defined borders, still respected the margins of the east-west and north-south axes. The design of the main hall was particularly challenging, needing to be a multi-functional space suitable for student balls and graduation ceremonies as well as the home for the National Institute of Dramatic Art (NIDA). ‘Design Room’ architects Ken Woolley and Peter Webber were involved in planning the precinct. Testimony to the continually shifting site and design parameters of the early years, Webber has “no recollection of being constrained in any way by an existing master plan” (Webber 2017).

In November 1959, the adjoining Randwick Park was vested in the university. The campus now comprised 38.5ha (95ac.) and consisted of an “upper campus” situated on the top of the sand-hill and the original “lower campus” sited on the race-course below. Fresh planning challenges that now lay ahead were in devising methods of amalgamating a campus that had not only grown piecemeal but was divided by topography.

In 1969, each of these projects was judged by the new University Architect as being particularly appropriate in scale and design for their university setting (Wright 1982).

The contemporary turn in precinct design and promotion of the “human-scale” instigated by Rembert and, through him, by the Design Room of the GAO resulted not just in the construction of the Applied Sciences precinct but also an innovative Student Union Round House and the residential Basser College, both of which were completed in 1959 and are still standing. In 1973, each of these projects was judged by the new University Architect as being particularly appropriate in scale and design for their university setting (Wright 1982).

The early planning of UNSW was far from the classic master planning exercise endorsed by contemporary best practice. Our archival research uncovers a stop-start process dictated by incremental land acquisitions which rewrote the planning script several times through the 1950s. Various designers were involved, not necessarily sharing the same vision. Each plan left a legacy shaping later interventions and creating a complex timeline of development decisions driven by different circumstances and spatial visions. UNSW was the odd one out amongst the first post-war universities and the larger suburban campuses of the 1960s and 1970s, all of which enjoyed generous sites and ambitious long-range blueprints.

The GAO was responsible for the planning and construction of the university until 1958. With no British precedent to follow in designing a technical university and faced with a site which was too small for purpose with additional area gained piecemeal over a number of years, early designers drew on a succession of international models, specifically those from the US and Europe (Heffron 17/6/48; O’Farrell 1999). During this ten-year period, design concepts for the site were made and remade, successively reflecting City Beautiful, Beaux Arts and Modernist planning styles. Towndrow’s vision which framed the siting of the first major building and the idea of an east-west axis stood for a classical if compact City Beautiful campus with roots in the Beaux Arts. But the architecture was decidedly modernist and, with Rembert centrally involved, inspiration had shifted to European campus precedents and a philosophy of designing to accommodate users, rather than concentrating on achieving imposing architectonic solutions. Despite modifications over the years, both sets of interventions are still evident today within a more stable and holistic master planning environment.

But that was a long time coming. Sitting atop the university bureaucracy until 1969 was Denning’s successor as Director and first Vice-Chancellor, Philip Baxter. John Niland (2017) remembers Baxter not as a master planner but a campus tactician whose main challenge from the early 1950s was to secure more land and build on it quickly to claim it for the university – hence a main building here, a student union there. Peter Spooner (1981) recalls the same modus operandi.

Discussion and Conclusion

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Professor Baxter was not a believer in the production of a master plan. As a result, this campus just grew like Topsy. Buildings were sited as and when they became necessary, on whatever piece of land was available. There was no attempt either to follow any particular style of architecture. Frequently buildings would follow one another, designed by different architects outside the University and expressing very different approaches to architectural design. So we have ended up with a complex that tends to lack unity. This was one of my great concerns while I’ve been here. Any landscaping I’ve done has endeavoured to reintroduce some unity into the campus. I feel this is desperately needed.

Ambitious development in the early years was also impeded by a lack of finance; “The money available for buildings from year to year was very small and very variable and the Council could not at any stage embark upon a major planning and construction operation” (Baxter 1966). This changed with the formation of Australian Universities Commission in 1959 which ushered in larger streams of federal money into campus development. Integrated planning still seemed to be beyond the university, which set its directions more by a succession of little plans until the first genuine master plan appeared in 1976. The results at UNSW – “the austerity campus” - remained uneven and as late as 1987 The Australian declared that UNSW “is generally agreed to have Australia’s ugliest campus” (Nimmo, 2001, 52). This wake-up call precipitated a more committed and better resourced effort to urban, architectural and landscape design from 1989 (Chesterman 2005).

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