1960s

CHAPTER 4 ‘A VERY TURBULENT SCHOOL’

Remembered as a period of enormous social upheaval, the late ’60s saw a clash of generational cultures, youth versus the Establishment, and political activism on a range of fronts: student, women, blacks, anti-war etc; a movement for change defining itself through extravagant fashions, street protests and, above all, a flourishing of popular music. Did any of this fantastical and enlivening uproar touch the inner world of the ambitious School of Civil Engineering with its ethos of order, usefulness, and hard work?
The ever-industrious School certainly appeared to remain focused and intent on its own ambitions and pursuits. As UNSW historian Patrick O’Farrell has noted, throughout the ‘60s the School of Civil Engineering ‘preserved its own distinctive ethos of making do, and of pushing for practicality and high standards. Other schools feared they might appear inferior’.

Students and staff were still involved in the adventure of world building. There were changes, but hardly revolutionary. In 1961 a common first year was introduced for all Faculty of Engineering students, now collectively studying physics, chemistry, maths, engineering 1, and humanities. The academic year was also reduced from 3 x 12 week terms, to 3 x 10 week terms, and the old Sydney Technical College Diploma was finally replaced by the 3 year full-time, 6 year part-time BSc (Tech).

In 1960 the School offered the brand new degree, the Master of Technology in Public Health Engineering, covering ‘water supply, sewerage, hydraulics and hydrology, industrial hygiene, atmospheric pollution and control of diseases, and includes instruction in microbiology and statistics’. The program had been initiated in conjunction with the World Health Organisation and consisted mainly of international students. In 1960 the School of Electrical Engineering offered its first MTech, and Mechanical Engineering joined in two years later. By 1967 all six Schools within the Faculty offered postgraduate coursework degrees, and all ‘had experienced enormous growth in this area’.

In May 1962 the School produced its first surveying graduates: John Allman, Ronald Benjamin, Brian Kent, Tony Robinson and David (Jim) Sheaves. They had been prime movers in the forming of a separate student Surveying Society, ‘better known as the Grand Order of the Jigger Gentry’ as the Engineering Year Book of 1962 claimed. In December 1962 the young talented South African, Peter Angus-Leppan, was appointed senior lecturer in surveying. Two years later he would become the Foundation Professor in Surveying. Still an overwhelmingly masculine world, the School was however open to international influences, numbering students from Hong Kong, Singapore, Sri Lanka, Pakistan, Malaysia, and even Japan in its undergraduate and postgraduate populations.

In 1960 Professor F S (Stan) Shaw had been appointed on the advice of the Vice-Chancellor as the School’s second Professor. His expertise was in the area of structural engineering, and he would ‘publish seminally about relaxation methods, the systematic relaxation of constraints in building’.

Shaw’s appointment was made while Munro was away overseas. His career had included time as a lecturer in surveying. Two years later he would become the Foundation Professor in Surveying. Still an overwhelmingly masculine world, the School was however open to international influences, numbering students from Hong Kong, Singapore, Sri Lanka, Pakistan, Malaysia, and even Japan in its undergraduate and postgraduate populations.

In 1960 Professor F S (Stan) Shaw had been appointed on the advice of the Vice-Chancellor as the School’s second Professor. His expertise was in the area of structural engineering, and he would ‘publish seminally about relaxation methods, the systematic relaxation of constraints in building’. His coming certainly strengthened the academic qualifications and research
ethos of the emerging School, but it also meant there were now two Professors in one School – a rare occurrence in those days – and, according to one staff member of the time, ‘a recipe for disaster’.7

Some things did not change. The Murray Committee Report of 1957 had led to joint Federal-State funding, which initially meant a massive increase in finance available and to three-year budgets, allowing for some long term planning. But as O’Farrell notes, ‘the money was never enough to match the ambition’.8 In March 1960 UNSW tuition fees were raised to the same level as the University of Sydney, an unfortunate equality, and then went up again, by 20% in 1963.

The biggest change was in sheer numbers, as in the mid ‘60s the School – and the University – met with the first wave of the baby boomers. Numbers of undergraduates at the School doubled between 1961 and 1966. The university had agreed in 1964 to the government’s Universities Commission to accept all qualified students.9 Vice-Chancellor Philip Baxter certainly had an extraordinary building program in place to find room for them all, but the real burden of such a population explosion fell on staff. Timetabling became more difficult, not to mention the workload staff faced with ever increasing class sizes.

More teaching hours, larger classes, more marking. A familiar story. UNSW had never been a place for the faint hearted or work shy and it certainly did not relax its demands on staff now. Staff groaned, but not to the point of rebellion. It was still an exciting place, ‘Dynamism attracted the dynamic’.10 In 1961 Stan Hall and Ron Woodhead’s book Frame Analysis was published by John Wiley & Sons. This was the first book to apply modern matrix methods to the analysis of structures and was a ground breaking contribution to the discipline of structural engineering internationally.
By 1966, 13,336 students were enrolled at UNSW, 10% of them from overseas, mainly from Malaysia and Hong Kong. Women’s participation was still only 17%, but even that represented unimaginable heights for the engineers. The Faculty counted four women undergraduate students in 1966, out of 2,343. Mechanical Engineering did have the honour of providing the Faculty’s first woman graduate engineer, in 1966, but Civil Engineering’s numbers of female graduates remained a steady zero. This did not prevent the holding of a series of Miss Civil Engineering contests, with young women drawn from Sydney Technical College secretarial courses, and later the Kensington campus Faculty of Arts, or perhaps they were simply just wandering past. The Civil Engineering Society reported in 1966 that the Traditions Day luncheon for fourth-year students and lecturers was the time when they ‘elect a Miss Civil Engineering from the birds in the Roundhouse’. The lucky girl might even get a hug from Crawford Munro. Not everyone considered this cloistered world to be the natural or right order of things. Rupert Vallentine addressed a women’s club in Newcastle in 1967, when he was Foundation Dean of Engineering at the new university there, lamenting ‘the loss to the nation of half its intellectual brilliance and its artistic, business and manual skills, through the neglect of the potential of women’.

Women did of course support the School, in particular through the efforts and actions of the wives. Shirley Brettle, like many wives of School researchers after her, had been the one to type up Joe’s PhD – and in the days before word processing computers, it was done laboriously, with carbon papers and retyped three times. Devona Pilgrim accompanied David out on his flood runoff research trips on many a dark and wet morning, while Grace Munro and Joan Vallentine were stalwarts in regularly attending openings, open days, prize givings, graduations and other
functions. Grace Munro was a foundation member of the University Wives Group, and was recognised in 1986 for her long and active association with them. She was especially concerned with supporting the wives and families of new staff members, and hosted afternoon teas for them at the Munro home at Hunters Hill. The hats and gloves of the period can be misleading – these were talented, energetic and clever women. Formidable, many of them, and their support essential to a husband’s progress and success in the world.

Meanwhile, back at Ultimo, the time honoured School policy of beg, borrow and otherwise continued. Emeritus Professor Russell Bridge (BE ‘63) recalled the dynamic teaching of Joe Brettle. ‘He was always full of stories and the stories would take you outside the bounds of what you were studying’. But Brettle was good for more than teaching, he was a problem solver of masterful capacity. Bridge recalls, ‘I did a thesis topic [on] shear and prestressed concrete members using light-weight concrete, and we needed to get some light-weight aggregate to mix-up this concrete and [it wasn’t easy to get], but Joe said “I know a guy. We’ll get a truck, you go out and we’ll shovel it on the back and bring it back to uni and it won’t cost us anything!”’

Although surveying students enjoyed astronomy evening classes on the roof of the Old Main Building at Kensington, for the first half of the decade the expanding School was still wedged into ‘the dingy confines’ of Ultimo. The delays in shifting to Kensington had begun to seem like a period of exile, even punishment. An annual Traditions Day was established in 1961, initiated by fourth-year students led by Tom Crow and including Malcolm Dennett and John Moran who wanted some ceremonial sign that they really were students of a real University. Everyone dressed up on the day; the senior staff attended lunch, made speeches and joined in the procession to afternoon drinks at the Clare Hotel. Munro pleased the undergraduate crowd with a stirring speech of how the ‘pass men will be the real backbone of our Army’. In the first ever newsletter of the Civil
Munro wrote: ‘It may seem heresy from the lips of a Professor, but I would rather see my students participate fully in all phases of university life and obtain a pass degree than devote themselves exclusively to study and obtain an honours degree – the leaders in the forefront of our attack on Australia’s developmental problems must be well balanced civil engineers, capable of managing men as well as materials.’

John Moran recalls Munro as an encouraging supportive force. ‘He wanted to include everybody in the School. He encouraged student contribution to sport, to student politics, to student publications. He gave the Civil Engineering Society (CIVSOC) their own office, and he encouraged his lecturers to mingle and associate with the students’.19

Stuart Armstrong, a surveying lecturer, objected, however, to the students’ attempt to plant ivy on Traditions Day to cover the bare Civil Engineering walls. Armstrong instead offered a symbolic redbrick to the CIVSOC chairman and then ‘half smothered the ivy in the pot of soil - mumbling something about what we could do with our ivy’.20 The point being made, the School of Civil Engineering did not need to try to be like the ivy-coated University ‘up the hill’ – whose denizens taunted the new University with jibes of ‘Kenso Tech’ or even ‘Kenso High’ – but instead should acknowledge and honour its own unashamed democratic modernity.

Traditions Day may have kept them entertained for a while but the impatience of the School at being excluded from Kensington was intensifying by 1964, when an anonymous article in Tharunka complained of the School’s ‘detention at Ultimo’ and even muttered darkly about the ‘Civil Engineering sacrifice’ on the altar of that old enemy, then as now, ‘the Administration’. Whatever about School resentment towards ‘the Administration’, even more serious tensions were building up within the School. These were tensions between very senior staff, in a long drawn out struggle for power which impacted on all staff, and which was watched with growing concern by the Faculty and by the University management. It certainly earned the School a reputation on campus as ‘being a very turbulent School in terms of personalities’.

The drama was almost Shakespearean in its depths, with a powerful but ageing King at its centre. Crawford Munro, hearty, bluff, outrageous at times, apparently impervious to criticism, a big picture man, a visionary, always wilful, so very often successful. He called himself an incurable idealist,22 but others, including his Vice-Chancellor, were less appreciative. As Stan Hall recalled, ‘there was no love lost between Baxter and Munro. On the University Council,
Crawford kept a sharp eye on the interests of staff and students, and sometimes attacked what he considered to be ruthlessness in Baxter’s policies. Munro was, at least in theory, a civil libertarian. He believed in the university as a ‘self-governing community of scholars’. Staff – and students – must have ‘complete freedom of thought and expression, with no fear of reprisals or punishments’. He spoke his own mind freely, and often, and in high places. Patrick O’Farrell noted that Munro ‘mixed being impossible with magnetic social skills’. He may have shouted for his colleagues from inside his chaotic paper strewn office (a system of filing on the floor which he said he understood and refused to let Mrs Brady clean up) but they didn’t appear to mind his military style. Ron Woodhead felt it was part of the ‘genius of the beginnings of the university’ that they had chosen Munro, ‘the most unlikely professor that I have ever met’.

Crawford Munro may never have scaled the heights of academic achievement but, according to Professor David Pilgrim, he was in fact ‘a very great professor, because he “professed” his faith brilliantly in civil engineering’. He also had faith in his staff, giving them challenges he expected them to grow into. His biographer, L Ross Humphreys, comments that Munro ‘was a good judge of character and potential ability, reflected in his successful recruitment of fine academics, whose pursuit of their enthusiasms fulfilled his aspirations for the School’. Ron Woodhead recalled being given the task of teaching critical path methods to practising engineers. Munro ‘called me to his office and said, “there is a new concept coming out, it is called CPM”’. Neither of them was too sure what CPM actually was but Munro was sure of one thing. ‘I want you to give the class and not somebody from Sydney [University]’. And that was that. In 1965, Ron Woodhead and Visiting Associate Professor Jim Antill’s innovative and enduring text, *Critical Path Methods in Construction Practice* was published.

Major Munro was used to leading his men to glory. But not everyone wanted to be led. Particularly not the second Professor Stan Shaw. Shaw ‘had a first-rate mind and was very research oriented’ but even those who admired his intellect and academic rigour had to admit that he ‘lacked people skills’. If most staff could not warm to him, students appeared to have appreciated him more; some recalled him as inspiring. Others engaged in some cheerful teasing. Shaw had a penchant for flamboyant ties. One day all his students came to his lecture wearing similarly extravagant ties.

Shaw was a relative latecomer to the School, and this may also be an important aspect of the ensuing story. He was not part of the founding brotherhood, the team forged in the baptism of fire that the ‘40s and ‘50s had been. Moreover he arrived in Munro’s absence and – as had happened ten years earlier between Munro and Hall – Munro’s return may have been a shock to them both. At the end of 1959 Munro had left for sabbatical leave and planned to travel to England, Europe and North America. However, serious illness curtailed these plans and he remained in England to recuperate. During his lengthy absence, which lasted until May 1961, Stan Hall, now Associate Professor, was Acting Head of School.

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Munro returned to a staff and student Welcome Back party held at the Roundhouse on Kensington campus in June 1961.

Whatever about student fondness for Munro, he could not win the affections of the new Professor. Munro expected, as usual, to give orders and to be obeyed while, according to Rupert Vallentine, Shaw considered Munro to be his intellectual inferior, seeing him as ‘a gruff, semi-illiterate man’.32 Offence was taken and given on both sides, and strong feelings of hostility grew between the two professors. Munro complained to VC Baxter who, in his turn, felt annoyed that the School could not manage its own internal affairs. Shaw wanted ‘to be placed in overall charge of three Departments over those so-called Department Heads’.33 Munro’s counter-offer of Shaw being given his own department in ‘structures and structural mechanics’ but leaving Hall in charge of ‘concrete technology and engineering practice’ was not good enough. Shaw wrote a twelve page reply ‘with strong claims about his standing and achievements’.34 Bob Warner recalled returning to the School in early 1964 to find, not surprisingly, ‘structural engineering in the School in a state of turmoil’.35 Things did not improve, and as the hostilities grew, so did concerns of staff around and above them. At one time Munro proposed to the Dean, Al Willis, that the School of Civil Engineering could be broken up into three separate schools: Structural Engineering, Surveying, and Water Engineering. Another time he suggested a separate School of Water Engineering and Construction, directly responsible to the Dean.36 Keith Watson recalled the alarm of many staff at the possibility of breaking up the School and he organized a petition to the Vice-Chancellor expressing this concern. Most of the academic staff signed this document.37 How much did students know? One alumni simply but succinctly commented, ‘The two most memorable staff were Professor CH Munro and Professor Shaw. They were complete opposites’.

On the surface, conflicts of personalities, self-esteem and the inevitable egoisms of academic life, but in fact the battle between Munro and Shaw could be seen as reflective of a deeper struggle – over the very definition of civil engineering – a dramatic conflict which has left its mark on the School to this day. However much value was placed on modernity, America and breaking from tradition, the historical fact of structural engineering’s pre-eminence within civil engineering degrees, professional practice and identities, meant that structural engineers would perhaps always struggle with a certain sense of entitlement that conflicted with Munro’s vision, if not obsession, with water as the key engineering issue for Australia.

Finally, in 1964, an extraordinary action by an exasperated VC. Baxter established a School Advisory Committee to manage the School. It would be chaired by the Dean, Professor Al Willis, who in effect became the new Head of School, with the three professors reporting to him on behalf of three new departments: Stan Shaw for Structural Engineering, Peter Angus-Leppan for Surveying, and Munro for Water Engineering. Munro still held the biggest card, as his department also included the engineering
construction management and soils and materials staff, but in effect, he was being demoted. Yet he seems to have accepted the situation, apart from a dry comment in the 1964 Engineering Yearbook that ‘Caesar divided Gaul into three parts, and as of late, 1964 history is repeating itself in that the Imperial hierarchy is applying the same treatment to the School of Civil Engineering’.Dean Willis recalled that ‘the arrangement worked extraordinarily well. The teaching staff were energetic, well-qualified and full of enthusiasm for expansion of the School, so there were plenty of proposals for the committee to consider’. Moreover, ‘the frictions within the staff, never very serious at the working face, dissipated and the success of the School over the period 1964–68 is a matter of record’.39

Certainly the great work continued. There were more students and also more staff. More PhD students were also being enrolled. Professor Al Willis had felt the School was holding itself back by directing its students towards MEs rather than PhDs. Munro’s visit to Imperial College London, in 1959 had convinced him that the Dean was right. Munro found he had grossly underestimated the standard of engineering research work at the School, that in fact many of his MEs were of the same standards as Imperial PhDs.40 It had been a case of ‘cultural cringe’, soon recovered from. Indeed when Arthur Askew arrived in 1966 from England, via Canada, to undertake his PhD, it was because the School was already ‘world famous in hydrology’.41 Michael Collins came from New Zealand in the mid-‘60s to undertake his PhD in the area of reinforced concrete, under the guidance of Fred Archer and Stan Hall. For him, ‘Ultimo, Kensington and all of Sydney were exciting places to be’. He affirms Hall’s memories of the happy Civil family. ‘There was great camaraderie between the graduate students
and the staff of Civil Engineering’. It wasn’t just the Friday nights at the pub together, or the dinner parties at staff homes. Collins, now Professor at the University of Toronto, recalled that ‘a good part of our education came from sitting around a big table in the common room at lunchtime with the staff discussing politics, sport and the essential principals of civil engineering! It was great fun and a great education’.42

In 1965 Surveying student enrolments reached an unprecedented 202, with 112 full-time and 90 part-time students. The Department began its first major revision of the Surveying undergraduate degree as a step towards making it ‘less of a Civil Engineering degree in disguise’. Amongst the BSurv curriculum changes rapidly implemented in 1966, Chemistry 1 was replaced by Surveying 1, a special new course, Engineering for Surveyors, was introduced, and more time was allowed for Geodesy, Photogrammetry and Astronomy.43

New staff who joined the School in the early ’60s included John Allman, Frank Clarke, Laurence Eckhout, Trevor Fietz, Jack Frieslich, Algis (Al) Kabaila, Arthur Manton-Hall, Laurie O’Neill, Vic Summersby and Bob Warner. The time was ripe for further research. In 1964 the Australian Universities Commission had allocated for the first time large amounts of money to universities specifically for research purposes.44 By the early 1960s the School’s academic research reputation was gaining momentum, and was attracting funds from the private sector and government departments. Research laboratories continued to expand and provide technical solutions to various projects, including subsidence assessments and roof tile adhesion tests for Sydney Opera House; lateral load modelling of Australia Square; cooling water requirements in power stations; measurements of stress and deflections in double-deck train systems; and the early development and application of computing technology in lieu of laborious manual calculations.45

Throughout the ’60s the innovative postgraduate coursework program was also a continuing success. Stan Hall noted that these once controversial programs now attracted that most sincerest form of flattery – imitation – inside and outside of UNSW. Throughout the ’60s the innovative postgraduate coursework program was also a continuing success. Stan Hall noted that these once controversial programs now attracted that most sincerest form of flattery – imitation – inside and outside of UNSW. Apparently ‘the established universities were not afraid of having their status tarnished by being up-to-date’, he commented wryly.46 From 1960 the School offered a full-time one session Graduate course in Hydrology, which attracted overseas students as well as interstate, and over the years was attended by employees of most major water authorities in the country.

Courses in engineering construction were added in 1965 to the School’s existing portfolio of Masters of Technology – now offered in four specialisations: engineering construction, structural engineering, public health engineering and water engineering. The name of the Master of Technology degree was changed to Master of Engineering Science (MEngSc) in 1967. Bob Warner recalled the pleasures, indeed ‘the greatest joy’ of teaching MEngSc courses to small classes with mature students, ‘interested and involved in the work. These postgraduate subjects gave lecturers the opportunity to deal with the cutting edge of their specialities’.47
One of the first engineering construction students was an ambitious, larrikin, clever boy from the bush, young Wallace Macarthur King, BE ‘66. King recalled that studying at the School had enabled ‘lifetime relationships to be established’. After his MEngSc graduation two years later, Wal joined a small but growing construction company, Leighton Contractors. Its ambitions matched his own. Ten years later he was managing director, ten years after that – CEO. Leighton Holdings now sponsor staff from their wide range of companies to study a School MEngSc specifically tailored for their needs.

It was during the inter-regnum period of being ruled by the School Advisory Committee that Civil Engineering finally made its long-awaited transition to Kensington. Students had long complained of the time – and money – wasted travelling between the split campuses of Ultimo and Kensington. Now at last, in 1966 the School moved into its new, eight-level, purpose-built building on Kensington campus. The photogrammetry laboratories were on the lower ground floor, the ground floor housed the materials and concrete testing laboratories, the second floor contained the Soils laboratory. Public Health Engineering labs and offices were on the third floor, while the fifth floor held the Structural Models and Experimental Stress Analysis Laboratories. The Head of School and the administrative team were allocated the fourth floor. The expansive new Laboratory Annex contained hard testing, creep, and fatigue testing labs, as well as materials, cement and aggregate testing laboratories, timber and machine workshops, a welding bay, a chemical laboratory, and stores. But it had problems from the beginning. School staff complained of insufficient teaching space, and workshop staff found themselves unprotected from the ‘noise and dust nuisance in these laboratories’.

The School of course had further territorial ambitions, envisaging the new building and laboratory annex as simply the first stage of expansion, but these hopes were never realised on Kensington campus. Ambitions continued to outstrip resources. Indeed, by 1969 the whole University had once more outrun itself and had an accumulated deficit of
$1.1 million, ‘megabucks for those days’\textsuperscript{52}, and was back to deferring all appointments, not filling vacancies, imposing cutbacks on purchase of all materials, even books. Staff who managed to be squeezed in by the canny School in the late ‘60s included Ken Faulkes, Don Fraser, Harry Taylor, Rupert Traill-Nash, and Somasundaram (Val) Valliappan. Bernie Gould, a leader in public health engineering, who had been at the School from 1954 but had left a decade later, also returned in 1969. New staff for the growing surveying department included Ron Mather – who would be awarded the first DSc in the Faculty, in 1976 – Maurice Maugham, Basil Ostoja, Tony Robinson and John Trinder.

The School’s facilities at Kensington were also supplemented by a new Heavy Structures Laboratory established at the Randwick sub-campus in the old – now historic – Tram Shed building. This Laboratory proved ideal for accommodating large-scale experimental research in structural engineering and was soon recognised as a unique facility for testing prototype civil engineering structures.\textsuperscript{53}

And of course, despite the difficulties, the work and the achievements continued. In 1967 Penguin published Rupert Vallentine’s internationally renowned text \textit{Water in the Service of Man}. Stan Hall’s second classic text, \textit{An Introduction to the Mechanics of Solids} was published by John Wiley & Sons in 1969. Reforms to the BE civil degree also began in 1967, implemented over a three-year period. The aim was to provide more choices for students, with more electives in fourth year and the School hoped, ‘a greatly improved preparation for the practice of Civil Engineering’.\textsuperscript{54} Changes included the reduction by half of hours devoted to chemistry, expanding Engineering 1A to include more work on dynamics, less on ‘descriptive geometry’ and containing new material of the often neglected bigger picture, ‘the nature of engineering and the approach to the solution of engineering problems’.\textsuperscript{55}

In a delightful moment of institutional honesty, the anonymous School staff writer in the \textit{Engineering Yearbook} of 1967 noted that students and staff do not necessarily see things the same way. ‘Indeed our second year students, those lucky fellows who are getting the benefit of our new course this year, do not seem to be entirely enthusiastic about it’. In fact students felt they were being overworked, a not unusual perception – and reality – of engineering students. What was different, as the staff writer acknowledged, was the fact that this student cohort presented a petition...
about it, to the astonishment of the School, so used to its own quiet authority and its agreed upon masculine hierarchies. Another ‘60s alumni recalled his class once signing a petition about ‘the teaching ability of a certain lecturer’. Signs indeed of changing times!

Another changing aspect was the new war on cigarettes. By the late ‘60s, attempts were being made to ban smoking inside classrooms, but not everyone took them seriously. In fact an internal School staff newsletter of 1967 warned of new campus-wide ‘No Smoking and Eating signs’ about to be put up in room 711, and noted that ‘members of staff need not feel inhibited by these stern directions’. John Hodgkinson (BE ’68) recalled Stan Shaw always lecturing ‘from neat prepared notes. He spoke in monosyllabic clipped tones. He smoked ghastly smelling small cigars and would go through about two of them during an hour lecture. He would neatly place the cigars alongside the notes and commence the lecture. His lectures were so precisely delivered that as he turned the last page of his notes, he would have the last puff on the cigar and the hour would be up.’

Running a School through an Advisory Committee could only be a temporary solution. Rupert Vallentine had left the School in 1964 to take up a position as Foundation Professor in Civil Engineering at the newly independent University of Newcastle. In 1967 he was approached by VC Baxter and asked to come back home. He accepted, returning in 1968 to take up the position of Professor of Water Engineering, and with the trusted Vallentine in place, Munro ‘readily stepped down,’ to busy himself with the joys of research and writing.

The Advisory Committee was at last disbanded at the end of 1968, and normal transmission resumed when Rupert Vallentine was appointed Head of School. Normal, but never again the same. Split, some have considered, not just by personal power politics but by the very structure of the new building, with its separation of academics on floors, grouped in their departmental teams. Or perhaps it was simply an inevitable stage of development: from creative chaotic beginnings to more structured maturities. Perhaps the early close collegial bonds, Stan Hall’s ‘happy family’, would have been weakened anyway by sheer volume of numbers, in both staff and students, just as later decades would see staff workloads overwhelm almost any chance at the simple pleasures – and important uses – of collegial conversation.

Right from the beginning of the struggle between Shaw and Munro, Peter Angus-Leppan had kept himself out of the battle, attempting to forge an independent line. In October 1968 he wrote to the Dean of Engineering, arguing that the Department of Surveying should be allowed now to become an autonomous School. His complaint, that Surveying was a ‘lusty youth, forcibly closeted with the ailing giant of Civil Engineering’; may have been an unconscious reference to himself (young, handsome) and Crawford Munro. Munro himself had suggested at the end of the Advisory Committee that the School become its own Faculty, with a new Dean presiding over separate Schools. ‘Civil Engineering,’ Munro argued,
‘has no close links with Mechanical or Electrical Engineering, and in fact has more in common with Architecture, Geology and Geography’.60

Still, by the end of the 60s the School of Civil Engineering was ensconced in its new impressive and autonomous buildings, and was proudly the largest School in the Faculty, with 40% of Faculty enrolments. It was in fact the largest School in the University. In 1969 it had a total undergraduate population of 1007, made up of 458 BE students, 338 BSc Tech, and 211 B Surveying. Postgraduate coursework students numbered 210, and PhDs numbered 25. Overseas students formed 21% of higher degrees, and 14% of the BE, higher than the UNSW undergraduate average of 9%.61

The School’s first female student had appeared on the radar, enrolled in 1969 in the MEngSc studying ‘Engineering construction’ part-time, but there is no record of her graduating. There were still no women enrolled in the undergraduate courses, although electrical engineering now boasted ten, and even mechanical engineering had one woman student. How much encouragement could be given to women to participate in a world where undergraduate student Balls had ‘themes’ such as ‘Engineers have the biggest Balls’.62

In 1969 the School employed 51 academic and 11 other teaching staff, as well as 7 Professional Officers and the Administrative Officer, F K Hughes.63 There were now four departments: Rupert Vallentine’s Department of Water Engineering had 23 academic, teaching and research staff; the Department of Structural Engineering led by Stan Hall consisted of 21; Peter Angus-Leppan’s Surveying employed 13; while Stan Shaw’s Department of Structural Mechanics had 5.64 Apart from the Professional Officers, there are no figures for other administrative and technical staff, of whom there may have been at least 40 employed at the School and the Water Research Laboratory.65 ‘General’ staff did not get listed in the University Calendar of the time. The ‘60s revolution in social equality had not yet fully permeated the organisation.