

Since each architecture school is unique, equations derived from one school cannot be simply adopted to analyse the potential of students applying for admission to any other school. Any school that wishes to maximize the quality and diversity of its student body should conduct its own inquiry. (Domer 1981:25)

CHAPTER 5 SELECTION PRACTICES FOR ADMISSION TO STUDIES IN ARCHITECTURE AT THE UNIVERSITY OF PRETORIA: 1971-2006

5.1. SUBPROBLEM 3

In order to understand the context of the main problem we need to critically examine the trajectory of historical selection practices for the admission of beginner students in architecture at the University of Pretoria from 1971 until 2006.

5.2. SUPPOSITIONS TO SUBPROBLEM 3

The first supposition to subproblem three is that the trajectory of historical selection practices for the admission of beginner students in architecture at the University of Pretoria between 1971 and 1994 were based on research findings and were compatible with and analogous to teaching and learning in the programme for which students were selected.

The second supposition to subproblem three is that the trajectory of historical selection practices for the admission of beginner students in architecture at the University of Pretoria between 1995 and 2006 was informed by managerial policies and were general and not specifically aligned with teaching and learning in the programme for which students were selected.

5.3. OUTLINE OF CHAPTER 5

In the previous chapters it was established how, and in some instances why, schools of architecture, including those in South Africa, at some time selected, or continue to select, beginner students for

admission to studies in architecture. The major case study undertaken for this thesis is introduced in this chapter. The focus turns to the selection praxes for the admission of beginner students in architecture at UP, where, as a rule, students have been admitted by selection for over forty-five years. The case study is introduced by an overview of the early years of the School when no selection for admission was done. The case study is subsequently divided into three chronological episodes according to the concerns that directed selection and the procedures employed for its implementation and operation. While these episodes form part of a continuous and cumulative, albeit not always linear, narrative, they are in many ways incongruous.

Selection praxes for the first two episodes, covering the years between 1971 and 2006, are discussed in this chapter. The episodes are contextualised in terms of the pertinent structural and regulatory frameworks and the academic concerns that, directly or indirectly, impacted the approach, procedures followed for and outcomes of the selection processes.

5.4. OVERVIEW OF THE RELATED LITERATURE

A number of pertinent informants were identified for this case study of the trajectory of the selection of beginner students in architecture for admission to UP between 1971 and 2006. These include general aspects such as the academic context at the Department, the regulatory framework in which guidelines for the professional and educational outcomes were defined and the requirements that an applicant had to meet in order that they be admitted to the programme in architecture. The normative position of the School at a specific time and an outline of the core curriculum render the context in which selection was practiced. Ultimately the outcomes of the selection procedure are relevant as an indicator of its successes and failures.

The research presented in this chapter benefits hugely from a limited number of primary sources that specifically deal with architectural education at UP. The dissertation by Sandrock (1960), entitled *Architectural education with special reference to the University of Pretoria*, provides insight into the academic activities of the Department of Architecture at UP (hereafter the Department) in the post-war period. Paradigms and the resultant shifts in the educational landscape are equally dependent on the personalities of those who lead, teach and learn in the School. The reflections of Gerneke (1994), Britz (2011) and the reminiscences of early graduates of the School presented in Steenkamp (2003) paint backdrops for the early years of the School in Pretoria. Of equal importance are the essays by Fisher (1998) on the third vernacular and Gerneke (1998) on the Brazilian influence, both published in the festschrift that marked the golden jubilee of the Department. This milestone also saw a special edition of *Architecture South Africa* with essays by Bakker (1994) and Le Roux (1994). The recollections of lecturers who penned articles about the subjects they taught capture nuances that can easily escape an archive of official documents. The writings and musings of especially Wegelin (2005) on Construction,

Bakker (1997) on the History of the Environment and Fisher and Clarke (2011) on Earth Studies and Resource Efficient Design are therefore much-valued.

Some published documents and unpublished archival material shed light on the Department's normative position and track changes in the pedagogic approach over time. These include statements by Heads of the Department (Burger 1983), reports prepared for and following accreditation or validation visits (CAA 1994; Department of Architecture and Landscape Architecture 1999; Department of Architecture 2003) and insightful narratives that outline the position of the School (Fisher & Le Roux 1993).

Some sources pertinently address the selection of students for studies in architecture at the institution. The thesis by Herholdt (1972), commissioned by the Department in the late 1960s, proved to be an invaluable source rich in qualitative and quantitative data for the years before selection was formally introduced. Moreover, this study unpacks the intentions, trials and procedures that formed the basis for the introduction of selection in the Department. An in-house report by Prof. Johan Kemp (1991) reviewed the first two decades of selection at the Department and thus ensures that the research initiated in the late 1960s can be tracked until the early 1990s. This continuity is, in no small way, possible because of the extensive archive of the Department where Kemp's report is held. Several other archival documents from the collections of the Department contextualise the selection project. They include the files kept by Prof. Burger that record procedural material for selection, including regulations, instructions, schedules and assessment sheets from 1971 and later (Departement Argitektuur 1971) and his data files that track the selection results and academic progress of students (Departement Argitektuur 1983a, 1983b). The archived correspondence of subsequent Heads of the Department attest not only to meticulous administration, but also reveal the strategic goals and practical details of selection procedures (Departement Argitektuur 1991a, 1991b, 1994a, 1994b, 1996; Departement Argitektuur en Landskapargitektuur 1998, 1999, 2000).

The institution's official history, documented and serialised as *Ad Destinatum* (UP 1960a, 1987a, 1996a, 2002), is a helpful general reference for matters pertaining to UP. The university's yearbooks, accessed in the University of Pretoria's archives, were of more value as an annual record of regulations and with summaries of the institution's curricula. On both counts they allow the researcher to track any changes, dramatic or discreet, over time (TUC 1930; UP 1940, 1944, 1971, 1973, 1976, 1983, 1985, 1987b, 1990, 1995, 1997, 1999, 2001, 2002, 2003, 2004, 2011d, 2016b).

5.5. BEFORE SELECTION (1929-1970)

5.5.1. The founding of a school of architecture in Pretoria

Studies in architecture were initiated at UP in 1929, when the institution was still known as the TUC, following a decision by the Secretary of Education that the education of architects and quantity surveyors

would in future be a function of universities and not technical colleges (ISAA 1941:14). The programme in architecture for a part-time diploma was listed for the first time in the TUC's yearbook for 1930 (TUC 1930:87-89) and Herbert (1975:14-15) explains that the students of the Pretoria Technical College took the diploma course offered by Wits, which the Minister of Education only formally approved in 1929. From 1932 a formal agreement existed between Wits and UP according to which Wits prescribed the syllabi and conducted the examinations in architecture and UP did the same for quantity surveying, as "[...] it was considered doubtful whether sufficient justification existed for the establishment of two schools of Architecture and of Quantity Surveying in centres so near to each other" (ISAA 1941:14).

Towards the end of the second five-year cycle of the agreement UP announced that it desired to establish a Chair of Architecture and thus, in future, be able to present its own courses in architecture. A delegation that included architect Gerard Moerdyk (1890-1958) – who served as Chairman of the UP Council from 1935 until 1942 (UP 1960a:102) – presented UP's position to the ISAA in November 1941 (ISAA 1941:1-13). Following negotiations the decision to establish a school of architecture independent from Wits was subsequently ratified by the UP Council on 28 May 1942 (UP 1960a:142-143).

The architect A.L. (Att) Meiring (1904-1979), a practicing architect (see Appendix 3 for biographical information), was appointed to the new Chair of Architecture and as Head of the Department of Architecture and Quantity Surveying, an entity in the Faculty of Science, from 1 March 1943 (UP 1960a:142-143).

5.5.2. Regulatory framework (1929-1970)

The promulgation of The Architects and Quantity Surveyors Act (No. 18 of 1927) set in motion the regulation of the education of architects and quantity surveyors in the Union of South Africa. Two years later, in 1929, Dr S.F.N. Gie, the Secretary of Education, motivated in a memorandum that the education of architects and quantity surveyors would in future be a function of universities, as opposed to the that of technical colleges (UP 1960a:142), which served as impetus to initiate studies in architecture at the TUC.

In 1932 UP was appointed as an examining authority in both architecture and quantity surveying by the Minister of Education (ISAA 1941:2), although it only exercised, in accordance with the agreement with Wits, its obligations to the latter for about a decade. The fact that it already had been appointed as an examining body in both fields of study bolstered the institution's case when wishing to establish an independent school of architecture in the early 1940s.

The promulgation of the Architects' Act (No. 35 of 1970) determined, along with revisions to the regulation of the profession, a prescribed minimum duration of five years of study for graduates wishing to register as architects-in-training, with an additional two years of practice experience (Theron 1985:65). The regulatory framework changes would especially affect the duration of the courses presented by UP.

5.5.3. Academic context (1929-1970)

A number of factors, apart from the significant influence of Meiring, contributed to the forming of the character of the new school in Pretoria. As the school was established two years before the end of the Second World War, the economic realities of the War years, and their aftermath, was evident, if not formative (Barker 2012:138). Steenkamp (2003:5-6) explains that the character of the school, “[...] was greatly influenced by a relief from stress following World War II and a tremendous optimism and excitement about the future among students”. It partly fuelled an approach of simplicity and economy to architectural education that resulted in an emphasis on pragmatic design (Barker 2012:100).

The notion of an independent school of architecture, at least in the early years, prevailed over dogmas. Despite some students’ expectations that the new school would offer them the opportunity to study architecture in Afrikaans, most of the lectures in the early years were presented in English (TUC 1930:98) by a largely English-speaking teaching corps (Fisher 1998:129; Steenkamp 2003:4), this despite the institution’s official policy to firstly serve the needs of the Afrikaans speaking community (UP 1940:37-38). The school, in later decades, became known as the ‘first’ Afrikaans school of architecture; this became more pronounced during the 1950s (Steenkamp 2003:5, 8) and when a ‘second’ Afrikaans school of architecture was established in Bloemfontein in 1955 (Joubert 1997:50). This label undoubtedly influenced the view that the School served Afrikaner hegemony and thereby contributed to the ideals of the regime of the day.

Before 1943 the Department was housed in the Student Union Club Hall, designed by Moerdyk, on the Hatfield campus. Between 1943 and 1957 the School was moved to Vermeulen Street (now Madiba Street) in the inner city of Pretoria, and initially housed in the University’s old Extramural Building and later in the Kerry Building across the street (UP 1960a:283). Gerneke (1994:24) asserts that this locale – “right in the centre of town” – was a great advantage to teaching and learning and that its accessibility had a positive influence on the School and its spirit. This benefit was lost when the School moved back to the campus in Hatfield in 1957. After sojourns in a variety of locales on the campus the Department finally moved into their new home – a Modernist curtain walled building on the Hatfield campus designed in 1960 by Meiring and his staff (Meiring 1961).

Archival records indicate that it was in 1944 that the first students to qualify were awarded the Diploma in Architecture by UP; all three (O.G. Verhoef, F.L. Papendorf and H.P.F. Meyer) were recorded as having commenced their studies in the 1930s when the agreement with Wits was still in place. The first woman to complete her studies was Irma Vermeulen (née Moerdyk) (1923-2013), who was awarded the Diploma in Architecture in April 1948. The first Bachelor of Architecture degree was awarded to H.J. Kok in April 1949. In the following years notable graduates were J.C. (Jan) van Wijk (1926-2005), Johan de Ridder (1927-2013) and G.T. (Gabriël/Gawie) Fagan in 1952 (Departement Argitektuur 1983b).

Men clearly dominated the profession, the School and the university. An overtly patriarchal attitude is reflected in regulations that were explicitly written with only male gender descriptors (TUC 1930:87; UP 1990:87) and is supported by the experiences of female students and architects. The recollections of Shelagh Nation, who graduated with a BArch in 1958, as recorded in Karusseit (2017), serve to illustrate examples of blatant chauvinism during her studies and in her professional life.

5.5.4. Academic intentions (1929-1970)

Chipkin (1993:278), in his review of Johannesburg's architecture, provides an introductory glance at the early graduates of the Pretoria School:

The Pretoria architects, more cohesive and better disciplined than their Johannesburg confreres, were also imbued, like the architects of Finland, with greater regional sensitivity. [...] They were an unquestioning professional elite, many of whom came out of the new School of Architecture at Pretoria University, imbued with the ethos of modernity and renewal under the observant eyes of the new political patronage that emerged after 1948 when the National Party came to power.

The School's early leaning towards a regionalist adaptation of Modern Movement ideals was also the result of the physical attributes of the city itself. Pretoria is located in a long valley of the Magaliesberg mountain range and has a remarkably moderate and pleasant climate (Fisher 1998:135). These conditions enabled the School to develop a distinct identity that embraced elements of Brazilian modernism. Gerneke (1998:215-216) speculates why Pretoria became the locus of the Brazilian influence and concludes:

It is perhaps too easy to read political overtones in design. Most likely the young Pretoria architects simply rejected the traditionalists – they were primed for a fresh approach by their admiration of Le Corbusier, Gropius, Mies van der Rohe and other Modern masters and, later, the Brazilians. What is more, the Transvaal Group had broken fallow land a decade earlier, creating a seedbed for new design, which later led to a Transvaal mutation of the Modern Movement via an affinity with the bold Brazilian school.

The teaching staff, carefully selected by Meiring, further promoted this emerging system of values (Barker 2012:102). Tutors, who were sympathetic to Modernist ideals and its local manifestations, contributed to the emergence of a Pretoria Regionalism. They included Norman Eaton, Gordon McIntosh, Hellmut Stauch (1910-1970), Robert Cole Bowen (1904-1976) and Basil South (1915-1952) (Fisher 1998:127-129).

Wegelin (2005:88), with reference to the course termed Building Construction offered 1943 and 1960, explains that lecturers conveyed their knowledge and experience autocratically. Students were expected to learn and copy construction details. Gerneke (1994:24) explains that Cole Bowen:

[...] taught us his type of economic courtyard house of which he had done a few excellent ones: suburban, corrugated iron monopitch, strictly on a 3'4" (standard window) grid. We were forced to work accurately, according to (his) detailed anthropomorphic data: furniture sizes, sanitary fittings,

even the size of folded sheets for linen cupboards, the minimum height to hang a long evening dress. One never needed to look up sizes again.

Influential figures like Stauch and Cole Bowen had left by the early 1950s and South passed away in 1952, leaving a void and, at least for a period, Meiring as the only full-time member of staff (Steenkamp 2003:8). Gerneke (1994:24) asserts that, “With hindsight it seems as if the creativity and fervor of the early days of the Pretoria school fizzled out, at least for a period, after the first decade”, to which Britz (2011) adds: “It came to a point where there was very little discipline and hardly any teaching took place”. According to Britz (2011) a group of disgruntled alumni in the early 1960s campaigned for the removal of the, by then, long serving head, who Gerneke (1994:24) criticises for “keeping a low profile at the school”.

On Meiring’s eventual retirement Prof. A.P. (Alewyn) Burger (see Appendix 3 for biographical information) was appointed to the Chair in 1967 (UP 1987a:68-69). As many of the old guard had left with Meiring, Burger had to rebuild the staff component and he devoted himself to reorganise and focus the Department in its academic offering as well as its administration (Wegelin 2005:89).

5.5.5. Curriculum (1929-1970)

Up to the early 1960s students could enrol for either the part-time diploma or full-time degree course – Table 5.1 provides an overview of the core curriculum for 1930, 1944 and 1964 respectively. It was required of students who studied towards the part-time diploma to be employed in the office of an architect (UP 1960b:204). Steenkamp (2003:3), who interviewed a number of people who had been students in the first decade of the School’s existence, explains that:

Because of financial difficulties being experienced during World War II (1939-1945), it was not uncommon for students to change courses from the degree to the part-time diploma course so as to be able to work and thereby sustain themselves. The diploma students had early morning lectures and could be in their offices by 9 o’clock in the morning. Lectures resumed at 5 o’clock in the afternoon. They followed the same curriculum and did the same projects as the students studying full-time.

The part-time diploma course in architecture was discontinued in 1961 (anecdotally, the year in which the Union became a Republic and left the Commonwealth) and replaced by an eight year, part-time degree course (UP 1963:210-212); this option was discontinued in 1966 (UP 1987a:68). The minimum duration of the full-time degree course was initially five years (TUC 1930:87), but it was extended to six years in 1961 to comply with a decision by the Board of Education of the ISAA (UP 1971:24-25; ISAA 1959:48).

5.5.6. Requirements for admission (1929-1970)

The yearbook of the TUC for 1930 states that the diploma studies in architecture had a minimum duration of five years. The prerequisites for admission obliged candidates to have matriculated, or, alternatively, that the approval of the Senate should have been obtained should the applicant have a certificate of exemption from the Federal Council on Architectural Education (TUC 1930:87).

TABLE 5.1: Core curriculum for architecture at UP in 1930, 1944 and 1964 (TUC 1930:88; UP 1944:94-96, 1963:208-209)

TYPE	Part-time diploma	Full-time degree, part-time diploma	Full-time degree
YEAR	1930	1944	1964
1	Building Design Elementary Building Construction Freehand Drawing Graphic Presentation History of Architecture	Studio Work And Design Building Construction Geometric Drawings Applied Mathematics History of Architecture Freehand Drawing Theory of Architecture Colour History of the Fine Arts Mathematics*	Design Building Construction History of Architecture Applied Mathematics Mathematics or Physics
2	Building Construction Building Design Building Theory Freehand Drawing or Model Making History of Architecture	Design Building Construction Building Theory History of Architecture Site Surveying Theory of Architecture Colour Geology*	Design Building Construction History of Architecture Building Theory Sewerage and Water Supply Philosophy or Mathematics or Geology
3	Building Construction Building Design Building Theory History of Architecture Sanitation and Hygiene	Design Building Construction Building Theory History of Architecture Applied Hygiene Building Equipment Theory of Architecture Colour	Design Building Construction History of Architecture Building Theory Quantities Building Finance Electrotechnology and Air Conditioning
4	Building Construction Building Design Estimates and Quantities Properties of Building Materials Specifications	Design Building Theory Acoustics Specifications Building Law City Planning	Design Building Construction Applied Building Theory Acoustics Specifications Site Surveying City Planning
5	Building Construction Building Design Professional Practice Structural Design Layout of Grounds and Towns	Design Building Construction Building Theory Professional Practice Estimates and Building Finance City Planning	Design Building Construction Professional Practice City Planning Estimates and Building Finance Two of the following: Industrial Phycology, Preparatory Accounting, Preparatory Business Economics, Arbitration and Reporting
6	[not applicable]	[not applicable]	Practical year with a dissertation

* Indicates subjects only applicable to the 1944-degree course; the remainder applied to both the degree and diploma.

By 1944, after the agreement with Wits was cancelled, a pass in matric Mathematics was added to the pre-existing admission requirements (UP 1944:94). In addition, prospective students were subsequently advised that a science subject in the matriculation year was recommended (UP 1960b:204). These requirements would only next be amended by the mid 1970s, after selection for admission was introduced.

5.5.7. Student numbers and indicators (1929-1970)

The size of the average cohort between 1930 and 1940 was around 25 students (ISAA 1941:14); this increased to above 30 between 1953 and 1959 and dropped to a low of eight in 1962 (Herholdt 1972:5). Only a sixth of the number of students who started their studies in 1947 eventually graduated (Barker 2012:138)

Sandrock (1960:11-12) recorded an average rate of attrition of 43.5% among students who first registered for the degree course between 1949 and 1951, while only 6.5% of students completed their studies in the minimum period of five years. Herholdt (1972:5) provides an overview of student numbers and rates of attrition for the period 1955 to 1968; he lists marked dropout rates for the cohorts of the late 1950s and a subsequent peak in this rate at 72.8% in 1961. On average just more than 40% of first year students did not complete the first year of study between 1955 and 1968. He shows that a decline in the number of students who registered for the course compounded the issue during the economic slump from 1960 to 1964. Student numbers in the first year of study almost doubled in the late 1960s, prompting the Department to review the procedures for admission.

5.6. EPISODE 1: SELECTION (1971-1994)

The first episode of selection at the Department of Architecture at UP was based largely on the research for a doctoral thesis (Herholdt 1972) in psychology. While this research served as the major informant of selection practices from its introduction until 1994, a process of rationalisation was implemented in the mid-1980s that gave cause for revisions and omissions from the original selection procedure. For the sake of clarity the first episode is therefore divided into two parts, namely from 1971 until 1984 in Episode 1a, followed by Episode 1b that covers the years between 1985 and 1994. Although these time-frames have specific cut-off points between academic years, there is also a strong sense that they are part of a continuous argument and timeline in the establishment of a culture of selection at the Department.

5.7. EPISODE 1a: THE INTRODUCTION OF SELECTION (1971-1984)

5.7.1. Regulatory framework (1971-1984)

The promulgation of the Architects' Act 1970 (No. 35 of 1970) set the requirement for the minimum duration of study prescribed for students wanting to register as architects-in-training to five years of full-time study, with the requirement for an additional two years of practice experience (Theron 1985:65). UP thus, in 1974, once again reduced the number of years back from six to five by doing away with the year of practical work experience as Work Integrated Learning and moving the design dissertation (previously required in the sixth year of study) to the fifth year of study. Students were in future required to work in practices during university recesses (UP 1976:36).

5.7.2. Academic context (1971-1984)

In 1971 the name of the Department changed to the Department of Architecture when the Department of Quantity Surveying was established as a separate entity. Meiring's glass-box building from 1960 on the Hatfield campus outgrew the needs of the users and major additions and alterations were commissioned and completed in 1973. Burger's academic reforms had a positive effect on the academic ethos of the Department. Within the first years of his tenure two new academic programmes, in landscape architecture and building sciences (Afrikaans: *boukunde*), were initiated and selection was introduced for the first time (UP 1987a:67-70).

5.7.3. Academic intentions (1971-1984)

An economic boom from the late 1960s to the mid-1980s saw double-digit growth rates in the economic reporting of the local building industry (Wegelin 2005:88). At UP the academic approach during this period had a scientific bias with the focus on the development of the science and practice of building materials and construction methods, and the impact of climate on buildings that laid the foundation for future research in sustainability (Fisher & Clarke 2011:19). The Department was equipped with a laboratory and equipment for geotechnical tests, for the measuring of the thermal and acoustic behaviour of materials as well as the analysis of structural components and their strengths (Wegelin 2005:89). In addition the Department worked closely with the Council for Scientific and Industrial Research (**CSIR**) and its National Building Research Institute (**NBRI**) (Burger 1983:43). Wegelin (2005:89) contextualises the approach:

[Construction details were no longer simply 'learnt', but rather thought through as part of the scientific design process. The manufacturing and detailing of windows, for example, would be discussed, bearing in mind the influence of the shape and position of the window so as to highlight the impact on the quality of light and behaviour in the space, also the advantages and disadvantages of different hinges or [the influences of] opening sections on airflow and cleaning – thus on health and ergonomics. The construction detail, as a pre-eminent form of thinking, was advanced as an active tool available to the designer. Standard details were frowned upon.]¹ Translated from the original Afrikaans text in Wegelin (2005:89)

Holm (1993:2) adds:

An understanding of materials and the use of tools have always been self-evident, and can be seen in Tukkies [UP] designs, especially in the evolution of detail. Architecture as art rests on the solid foundation of workmanship. The fact that this is the case in work of ex-Tukkies [alumni of UP] is possibly related to the fact that most of the representatives of the old guard came from a rural background, where a sense of practicality prevailed.

1 "Konstruksiedetails word nie meer net 'geleer' nie maar moet uitgedink word as deel van die wetenskaplike ontwerpproses. So sal die vervaardiging en inbou van vensters behandel word met gedagtes oor die invloed van venstervorm en -posisie op ligkwaliteit en termiese gedrag in die vertrek, en die voor- en nadele van verskillend geskarnierde of skuivende oopmaakdele op lugvloei en skoonmaak, dus op gesondheid en ergonomie. Die konstruksiedetail, by uitstek 'n vorm van dink, word bevorder as 'n aktiewe werktuig tot die beskikking van die ontwerper. Geblikte details word verdag." Wegelin (2005:89)

2 "Die ideaal is om gegradueerdes te lewer wat in argitektuur die teorie beheers, probleme kan oplos, prioriteite kan bepaal,

With P.J. (Philip / Phlip) van Rooyen, Burger broadened the scope of teaching in the history subjects. They redeveloped the syllabi and the History of Architecture modules were renamed History of the Environment [Afrikaans: *Omgewingsgeskiedenis*] so as to reflect a more encompassing reading and study of the spatial artefact within its broader cultural contexts, as opposed to the foregoing focus on a stylistic history. This realignment would, over subsequent decades, develop to be one of the School's strengths and laid the foundation for scholarly enquiry and formal research by members of staff (Bakker 1997:1). The early 1980s also saw a concern for the urban context starting to manifest strongly in the School's final year projects (Le Roux 1994:17-18).

The scope of the academic investigations was thus broadened and an academic-scientific approach to architectural education was encouraged and entrenched. Burger (1983:41) states unequivocally that it had been decided that architectural education at UP will have an academic, rather than professional, grounding that offers the opportunity for the study of the discipline of architecture instead of schooling students for a specific career. He also defined the Department's pedagogic ideal and the skills graduates should achieve as follows:

[The ideal is produce graduates who, in architecture, have command of the theory, can solve problems, define priorities, convey ideas in words and through images, are eager to learn, respect the community and environment, can act in a team as members or leaders, and have integrity.]²
Translated from the original Afrikaans text in Burger (1983:42)

[At the end of their course students should be able to prove that:

1. they are capable of analysing, resolving and presenting an advanced architectural problem to others;
2. in their design: consider the users of buildings, the community and the environment; demonstrate that they know how it might be built; achieve a balance between cultural, visual, technical, economical and other factors;
3. they are prepared for continuous study.]³ Translated from the original Afrikaans text in Burger (1983:42)

During Burger's tenure a strong studio culture was (re)established – this would come to characterise teaching and learning in the School for decades to come.

5.7.4. Curriculum (1971-1984)

In comparison with earlier versions, a distinct academic approach is discernible in the core curriculum of 1970s, but it would mature and be streamlined by 1983 when a semester system replaced the year course arrangement of earlier years (Kemp 1991:23). These shifts are reflected in Table 5.2.

2 "Die ideaal is om gegraduateerdes te lewer wat in argitektuur die teorie beheers, probleme kan oplos, prioriteite kan bepaal, gedagtes in woorde en beelde kan oordra, weetgierig is, die gemeenskap en omgewing respekteer, in 'n span as lid of leier kan optree en oor integriteit beskik." Burger (1983:42)

3 "Studente moet aan die einde van die kursus kan bewys dat hulle:

1. in staat is om 'n gevorderde argitektoniese probleem te ontleed, op te los en aan ander voor te stel;
2. in hulle ontwerpe: die gebruikers van die geboue, die gemeenskap en die omgewing in ag geneem het; toon dat hulle weet hoe dit gebou kan word; 'n balans tussen die kulturele, visuele, tegniese, ekonomiese en ander faktore bereik het;
3. voorberei is op volgehoue studie." Burger (1983:42)

TABLE 5.2: Core curriculum for architecture at UP in 1971, 1976 and 1983 (UP 1971:24-25, 1976:36-37, 1983:40-41)

TYPE	Full-time degree - BArch	Full-time degree – BArch	Full-time degree - BArch
YEAR	1971	1976	1983
1	Design Building Technology Applied Mathematics Introduction to Building Science	Design Building Technology Applied Mathematics History of the Environment Site Surveying	Design [2] Building Technology [2] History of the Environment [1] Theory of Structures [2] Site Surveying [1]
2	Design Building Technology Theory of Structures History of the Environment Building Services Quantities Site Surveying	Design Building Technology Theory of Structures History of the Environment Building Services Quantities	Design [2] Building Technology [2] History of the Environment [2] Theory of Structures [2] Building Services [1] Quantities [1]
3	Design Building Technology Theory of Structures History of the Environment Building Services Building Finance	Design Building Technology Theory of Structures History of the Environment Building Services Building Finance Housing	Design [2] Building Technology [2] History of the Environment [2] Theory of Structures [2] Building Services [2] City Planning [1]
4	Design Building Technology Theory of Structures History of the Environment Building Services Professional Practice Landscape Planning Acoustics	Design Building Technology Theory of Structures History of the Environment Building Services Professional Practice Landscape Planning Acoustics	Design [2] Building Technology [2] History of the Environment [1] Building Services [1] Mercantile Law [1] Landscape Architecture [1]
5	Design Building Technology Professional Practice City Planning Housing One of the following: Industrial Phycology, Urban Sociology or another approved elective module	Design Building Technology Professional Practice City Planning Office Practice One of the following: Industrial Phycology, Urban Sociology or another approved elective module	Design [1] Building Technology [1] Professional Practice [1] Office Practice [1]
6	Practical year with an oral examination on practical work	not applicable	not applicable

[2] Indicates the number of semester courses per subject stream in an academic year.

5.7.5. Requirements for admission (1971-1984)

Until 1976 the minimum requirements for admission to the degree in architecture at UP required an applicant to have obtained a matriculation certificate or a certificate of matriculation exemption with a pass mark in Mathematics (UP 1971:24) and a science subject as a recommendation. The subject Physical Science (combining the studies of Physics and Chemistry) was formally introduced as a requirement for admission in 1976 (UP 1976:5). Additional changes to the secondary school curriculum for the senior certificate also affected the published requirements. A tiered system of academic grading was introduced, with the principal impact that a higher matriculation mark was required for a subject passed on the Standard Grade than that for the Higher Grade (UP 1976:5-6), with the latter considered to be academically more challenging than the former.

5.7.6. Research on selection

Kemp (1991:14) indicates that the number of new enrolments increased in the late 1960s, with a jump from 48 applications for the 1967 academic year to 83 for 1968. This served as incentive for Burger to approach the Department of Psychology at UP for assistance with research on the selection of future applicants. Wynand Van der Merwe Herholdt (1940-2007) was recommended for the task.

It is apparent that Burger was unconvinced that selection for admission to the architecture programme should be solely based on an applicant's matriculation results, as using the academic record as sole determinant would have been a much easier option to implement. The decision to initiate a research project on the selection of beginner students in architecture was therefore in keeping with the emerging academic-scientific outlook that would come to characterise the period of Burger's leadership. Apart from the physical limitation of available resources to accommodate all applicants, Kemp (1991:1-2) reasons that the research was further motivated by the fact that selection was not a common practice at the time and a frame of reference was thus lacking on which to base any decisions. Other considerations that contributed to the research initiative were aspirations to academic excellence and the high rates of student attrition previously discussed, especially that of the first year of study, and the subsequent financial losses to students, their families and the taxpayer who subsidises tertiary studies through the state.

Herholdt's ensuing research culminated in a doctoral thesis (Herholdt 1972) that he described as a scientific approach to selection for a selected and specific academic programme (Herholdt 1972:12-17). His psychometrics-based study relied on a task-analysis where the learning activities of students of architecture, specifically during the first year of study, were analysed (1972:101-108). A process of determining which psychological tests were available to measure the qualities he identified followed. The tests were reviewed and early results were used to establish predictive indicators based on regression equations, followed by validation and cross-validation with prospective students (respectively in 1969 and 1970) and re-cross-validation (1972:199-208). Validation cohorts were monitored throughout their first year of study and their academic results were used to adjust forecasts and to calculate multiple correlation coefficients between the predicted and actual outcomes.

5.7.7. Selection implemented in 1971

As a very high predictive validity was achieved with the data for the validation groups, selection was formally introduced for the cohort of the 1971 academic year (Kemp 1991:10) and new regulations that refer to the selection procedure were subsequently published in the yearbook of the Faculty (UP 1973:3).

5.7.8. Selection procedure (1971-1984)

Herholdt's procedure for selection employed a combination of assessment tools and resulted in a ten-point scale – see Figure 5.1 – that served to predict a first-year student's possible academic success (Herholdt 1972:167).

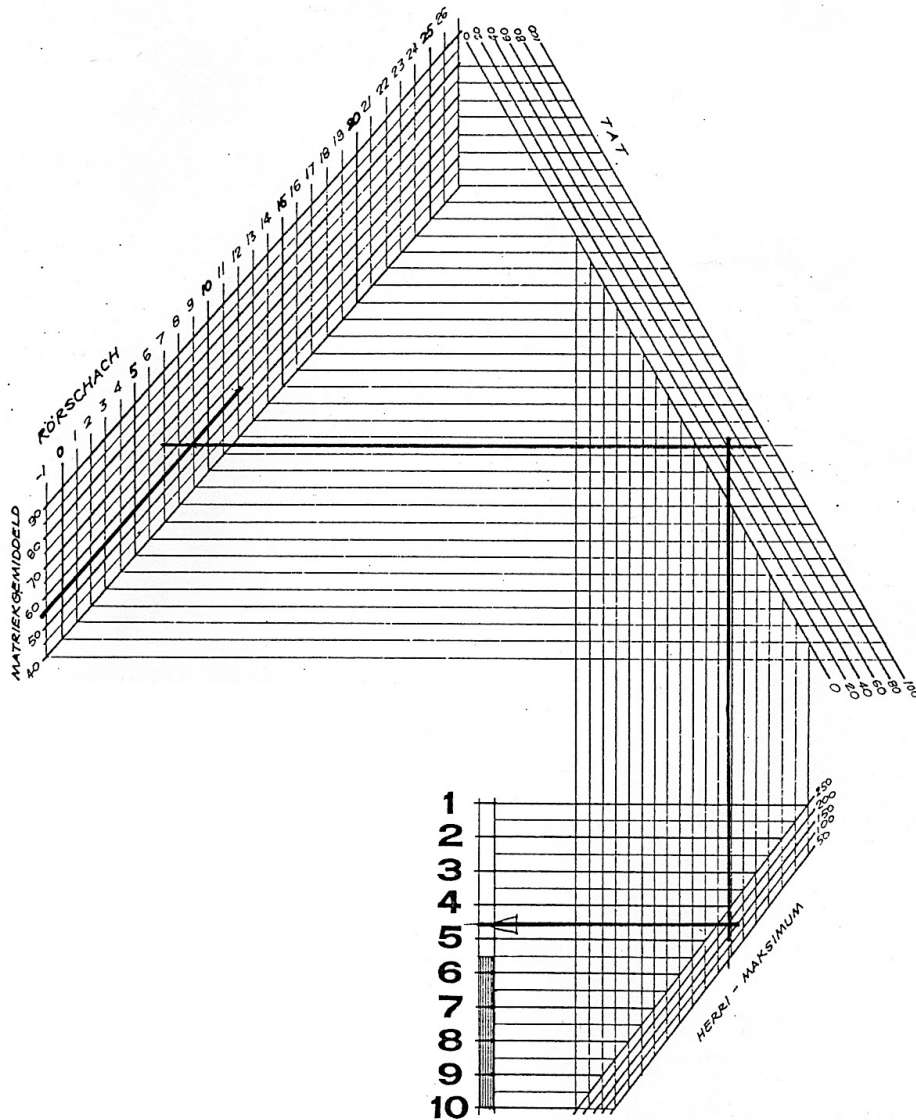


FIGURE 5.1 Example of a nomogram logging an applicant's results, clockwise from the left, for matric average, Rorschach Test, Thematic Appreciation Test (TAT) and Herri Maximum Test, finally translated to a ten-point scale to predict a first-year student's possible academic success (Kemp 1991:17)

This system was used until 1984 with only minor tweaks and slight improvements (Kemp 1991:1). The discussion that follows provides an analysis of the development and implementation of the assessment tools used for the admission of beginner students of architecture at UP during the period 1971 until 1984.

5.7.9. Academic record (1971-1984)

The inclusion of matriculation results in Herholdt's selection procedure was motivated by the fact that it was generally accepted as the best single indicator of academic success at tertiary level (Herholdt 1972:163), a rationale also recorded by Goldschmidt et al (2001:284-285) – see Chapter 3.7.1. Herholdt's study considered an applicant's matriculation results on the basis of the average of four subjects, these being Afrikaans and English – the two official languages of South Africa during the years of Apartheid – Mathematics and the recommended science subject. As Physical Science was initially not an explicit requirement for admission it might be substituted by Biology (Herholdt 1972:163-164). The choice of matriculation subjects included in the research was informed by earlier studies that found correlations between results in specific school subjects and success in particular study programmes at university level (Herholdt 1972:26-31), although these studies did not include architecture.

It is of specific interest that Herholdt found school results in the language subject of Afrikaans – the first language of 88.7% of the validation group – to have significant correlation with the overall criteria for success. This was contrary to his expectation that Mathematics and the science subject would prove to be the most meaningful indicators. In an attempt to explain these findings, Herholdt (1972:185-187) reasoned that strong linguistic skills might be indicative of versatility on the part of applicants, an attribute that could serve students well.

Herholdt concluded that the average of the four prescribed matriculation subjects mentioned above proved to be the second best predictor of academic success in the first year of study (Herholdt 1972:211). An applicant's academic record therefore became an important point of reference for the selection of beginner students in subsequent years.

5.7.10. Special architecture tests (1971-1984)

Although largely based on psychometric practice, the battery of tests that Herholdt investigated, researched and implemented was specifically aimed at first year students of architecture at UP. With this level of specificity they therefore qualify as special architecture tests – see Chapter 3.7.5 – and are not categorised as generic aptitude tests.

The National Institute for Personnel Research developed many of the tests that Herholdt considered and finally implemented (Herholdt 1972:109-114). According to Louw and Foster (1991:72) the National Institute for Personnel Research “was formed in 1946 to supply industry with information and research regarding labour utilisation.” The wartime Aptitude Tests Section of the South African Air Force is considered to be the forerunner of the Institute that would later become part of the CSIR. With its tests and test batteries, most of the Institute's early work dealt with the selection of personnel for specific positions that required specific skills and aptitude. According to an advertisement in *New Scientist* magazine of 25 April 1974, the National Institute for Personnel Research:

"[...] carries out research into all the circumstances that contribute to the productivity and happiness of man at work. These include the characteristics of the work, the fitness of the man for the job, the fitness of the job for the man, manpower problems and work maladjustments such as absenteeism and accidents [sic]" (CSIR 1974:199).

The advertisement also states that its work is undertaken on a contract basis for commerce and industry, but that it is backed up by basic research into human abilities, attitudes and brain function.

Herholdt (1972:101-107) relied on a task-analysis of the curriculum for the first year of study in architecture. As an example, he states in his summation for Design, the major studio module:

[Success in the Design course requires that a student has (or has the potential for) a number of basic abilities and skills. Artistic aptitude is seemingly an important prerequisite. Also requisite is the ability to portray three-dimensional objects on a two-dimensional plane. The latter skill is associated with the ability to communicate ideas graphically. The design process is a creative art-form that must be continually tempered by concerns for what is practically feasible and usable. The student must also be predisposed with an above average organisational ability so as to meet these requirements for integration.]⁴ Translated from the original Afrikaans text in Herholdt (1972:105-106)

The task-analysis was used to deduce the qualities required to successfully complete the first year of study. He concluded that these qualities were dependent on the following abilities: a general intellectual capacity, arithmetical ability, deductive and inductive reasoning, three-dimensional representation, creativity, artistic inclination, perseverance, willpower and an active mindset (Herholdt 1972:108).

Psychological tests were paired with these qualities and where necessary, adaptations of standard techniques were used. These tests served as the basis for establishing an analogous relationship between selection and the course. Five assessments were found to have the highest intercorrelating predictive value: the Mental Alertness Test (testing general intellectual ability), the Arithmetic Ability Test, the Pauli Tests (perseverance), the Thematic Appreciation Test (also known as the TAT, testing active mind-sets) and the Rorschach test scored according to the Perceptanalytic Executive Scale (for determining creativity and ambition) (Herholdt 1972:165, 209). Surprisingly the Rorschach test was customised to enable presenting it to groups (Herholdt 1972:144), but its inclusion should not be a surprise as Herholdt obtained his master's degree in psychology from UP in 1967 with a dissertation on the validity of the Rorschach colour theory on the basis of psychophysical measurement (UP 1972:14).

The instruction manual for the Rorschach test (unnumbered page entitled 'Rorschach-Aanwysings' [Rorschach Instructions] in Departement Argitektuur 1971) explains how the test was announced to applicants sitting for selection tests:

4 "Sukses in die Ontwerp-kursus vereis 'n aantal basiese vermoëns en vaardighede (of ten minste die potensiaal daarvoor) van die student. Kunsaanleg is blykbaar 'n belangrike voorvereiste. Die vermoë om deur middel van tekeninge driedimensionele voorwerpe op 'n tweedimensionele vlak te kan projekteer, kom ook ter sprake. Laasgenoemde gaan hier gepaard met die vermoë om idees grafies te kan kommunikeer. Die ontwerpproses is 'n kreatiewe kunsvorm wat egter deurentyd getemper moet word deur die vereistes van praktiese uitvoerbaarheid en bruikbaarheid. Om te voldoen aan dié eise van integrasie behoort die student ook oor 'n bo-gemiddelde organisatoriese ingesteldheid te beskik." Herholdt (1972:105-106)

We are going to project a series of ink blots one at a time on the screen. These blots do not really represent anything; however, people see certain things in the blots. You are to look at each blot and then write down what you see in that blot. There are no correct or incorrect answers.

The number of each blot will be announced and you must list and describe briefly (not more than) [added by hand in ink] the first five things you see. You must, for instance, not only answer 'a horse', but must write down more about the horse as it appears to you. Number each of your impressions as follows in the relevant columns on your answer sheet: [explain again on the blackboard]⁵

Please note that your first impressions are important. Finally you must remember to indicate which section of the blot you use, as follows: [explain again on the blackboard]

You must not write in the columns on the right hand side of the answer sheet. Raise your hand if you need more paper. A time limit of 5 minutes per blot will be allowed. Are there any questions?

Herholdt's specific adaptation of the Rorschach technique for presentation to groups was found to be the highest predictor of academic success in the first year, followed by the average of the four prescribed matriculation subjects (Herholdt 1972:211).

The battery of psychometric tests was supplemented by a question that required applicants to make "a realistic drawing of a person performing any action" and "a realistic perspective drawing of a house" (undated assignment in Departement Argitektuur 1971). This drawing test, intended to gauge artistic aptitude and an applicant's ability to communicate ideas graphically, replaced standard tests that Herholdt investigated but, during the validation cycles, found to be unreliable indicators of their specific goals (Herholdt 1972:214). It was later, at least in 1976 and 1984,⁶ augmented by a design question that read: "Design and draw a machine that makes beds and changes the bed linen" (undated assignment in Departement Argitektuur 1971). No assessment record or other reference could be traced for this assignment and it likely that it was used as a means to organise the schedule for marking while applicants were being kept occupied.

Applicants also had to complete a personal questionnaire that was designed to disclose aspects of the applicant's family, their socio-economic circumstances, the number of children in the family and the position of the applicant relative to other siblings. It also probed for information about the applicant's hobbies and leisure-time activities, leadership positions held at school, achievements in sport or academics and the like (Herholdt 1972:213). Similar contextual information was used to assess the submissions of applicants to the Bartlett School of Architecture during the 1960s by the AERU – see Chapter 3.6.3.

5 Parenthesis translated from the Afrikaans "*beduie weer op die swartbord*" (Departement Argitektuur 1971).

6 Prof. Karel Bakker, from the 1976 cohort, clearly remembered the assignment for the machine that made beds (personal communication, 27 September 2011). According to the selection schedule for 1984 (in envelope marked 'Verwerking' in Departement Argitektuur 1971) one hour was allocated to 'Masjien' on Monday 9 January between Questionnaire 2 and the Rorschach test.

5.7.11. Interviews (1971-1984)

The final stage of the selection process involved interviews with applicants. These interviews were initially held on the fourth (and at the time the last) day of selection in January ('Reglement' S.966/70 in Departement Argitektuur 1971), but by 1984 at least two and a half days were spent on interviews (see selection schedule for 1984 in envelope marked 'Verwerking' in Departement Argitektuur 1971). Herholdt (1972:214) stated that the aim of the interviews was to consider a candidate's underlying motivation for wanting to pursue a career in architecture and to verify evidence of an active interest in the discipline. The test result sheet (see Figure 5.2) and the nomogram (see Figure 5.1), with graphic summaries of the applicant's school results and test scores, served as references for the panel of interviewers.

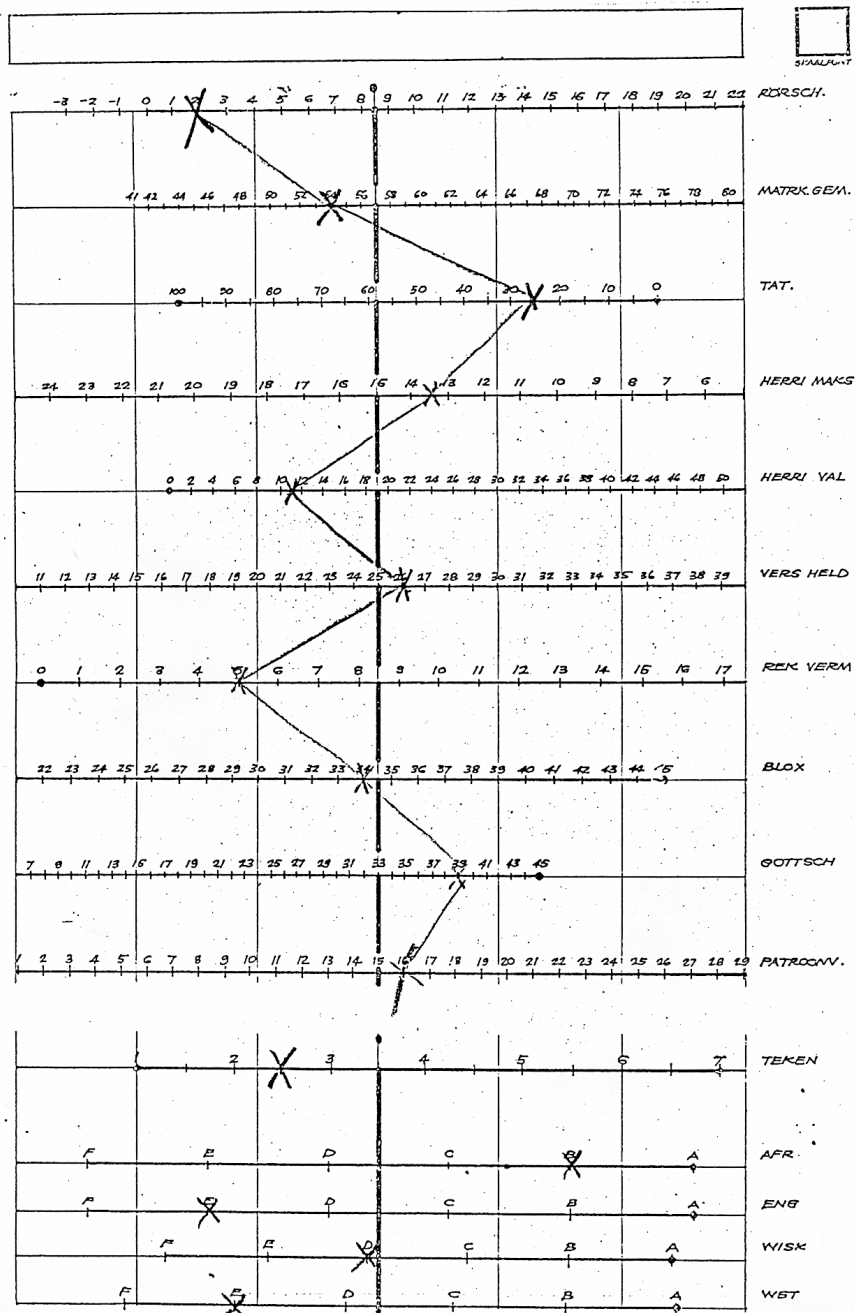


FIGURE 5.2 Example of a test result sheet showing an applicant's scores in the test battery (per row), followed by an assessment of the drawing test and four matriculation subjects at the bottom (Kemp 1991:16)

Again these procedures correlate with some of the formats tested by AERU at the Bartlett School of Architecture, as previously discussed in Chapter 3.6.3. While an interview with a panel of selectors is certainly rather generic in its format, some South African references⁷ to the AERU research at the Bartlett indicates that there was a lot of interest from educators at local schools of architecture in the work of the unit.

The data sheets that summarised the selection assessments (Departement Argitektuur 1983a) indicate that both Burger and Herholdt scored the interview sessions while the selection schedule for 1984 (in envelope marked 'Verwerking' in Departement Argitektuur 1971) indicates that at least two other senior members of staff from the Department participated.⁸ It is noticeable that the selection committee, who also conducted interviews as a panel, was made up of the most senior members of staff (Kemp 1991:28). For the selection of 1984 it was recorded that the Dean, Prof. P.J. Zietsman, sat on the committee (cover letter to Departement Argitektuur 1984).

5.7.12. Outcomes (1971-1984)

One should bear in mind that, at the time, only white applicants, who represented a very narrow band of the total population of South Africa, were allowed to pursue studies at UP. The groups who participated in the validation and cross-validation (respectively in 1969 and 1970) were dominated by students and applicants who were mostly Afrikaans speaking (respectively 88.7% and 77.4%) and male (respectively 90.6% and 82.3%) (Herholdt 1972:169, 195). They should therefore be considered to be a homogenous group that represented a small portion of the total population of the country.

It is of interest to note that a drop in the number of applications between 1977 and 1983 did not warrant any refusals, with the result that no selection took place (Departement Argitektuur 1984:1). For statistical continuity the cohorts were put through the motion of all the test procedures and never-the-less their progress was monitored (Departement Argitektuur 1982). Following the seven-year hiatus between 1977 and 1983 when selection tests were conducted only for the sake of statistical continuity, additional tests, such as the perceptual battery of the Blox Test (Herholdt 1972:113) that were initially included but not weighted in the predictive scaling, were dropped in 1984.

In the report on selection for the 1984 cohort, it is mentioned that the number of psychological tests were reduced to allow Prof. Herholdt to deal with them in one afternoon (Departement Argitektuur 1984:1). Apart from Herholdt, who was best qualified to assess the Rorschach, at least four members of staff were

7 University of Natal (1973:23-24) records part of a paper presented by Prof. Rodney Harber and Brian Kearney at the architecture teachers' seminar in which Kearney states: "I quote to you from the Abercrombie Report which is to my knowledge the only substantial report on selective and accurate performance [...] Studies at the Bartlett School report that and indicate that first of all the candidate's statement is more reliable than anything else and interviews can all be useful in assisting the process of selection."

8 For the interviews early in 1984 the initials listed are APB (Burger), DH (Dieter Holm) and PVR/TJK (Philip van Rooyen/Johan Kemp). Herholdt (WH) is listed to assist with three tests, including the Rorschach.

assigned to assist with Rorschach assessment (see selection schedule for 1984 in envelope marked 'Verwerking' in Departement Argitektuur 1971).

Painstaking records were kept of each student's progress (Departement Argitektuur 1983a) and therefore selection could be refined over time as more statistical data became available. For example, Herri Tests replaced the Pauli Tests, from 1976 the drawing test replaced the Herri's results in scaling predictions, while a second predictive scale was introduced to forecast academic achievement at the end of the third year of study (Kemp 1991:20).

The most significant impact of this system was that attrition during the first year of study dropped from an average of 42% (1955-1964) to 10% (1971-1986) according to Kemp (1991:21-22), including the period between 1977 and 1983 when no selection was done. This average represents a meaningful improvement, but for some years it reached 16% (1972), 18% (1978 and 1980) and 14% (1984) according to the analysis in Kemp (1991:21). The rate of graduation and throughput equally fluctuated, with low figures recorded for many of the years that no selection was done but the progress of students was recorded for statistical continuity. Graduation rates of 60% and above were achieved for the cohorts who commenced their studies in 1971, 1974 and the early 1980s (Kemp 1991:22). On the whole these figures showed improvement when compared to the figures recorded in Sandrock (1960:11-12) and Herholdt (1972:5) for the preceding periods before selection was implemented.

5.8. EPISODE 1b: RATIONALISATION OF PROCEDURES (1985-1994)

5.8.1. Regulatory framework (1985-1994)

The first democratic elections were held in South Africa in April 1994. Following this significant shift, revised policies and statutory frameworks that specifically affected the architect's profession and the educational landscape followed in the decade subsequent to 1994. These aspects are therefore discussed in the next episode – see Chapter 5.11.1. In the meantime the Architects' Act of 1970 and its requirements remained in place.

5.8.2. Academic context (1985-1994)

Curriculum changes were implemented for the 1987 academic year that was, in all probability, initiated by Burger's resignation in 1984. Prof. Dieter Holm (see Appendix 3 for biographical information) succeeded him as Head of Department in 1985 (UP 1996a:202). As was previously the case when there was a change of leadership, the staff component also changed and six, mostly young, new lecturers were appointed in 1986 (Kemp 1991:23). Far from the major reforms that Burger had to introduce in the late 1960s, the changes were evolutionary and a product of the certainty that the School had established over the course of the foregoing years. The academic competence and rigour that characterised Burger's era

was continued and augmented by Holm's research experience and the newly appointed young talent, many of whom had an interest in the theoretical discourse of architecture.

In his reflection Prof. Hans Wegelin (2005:90-91) lists a number of influences that eventually started to undermine the overtly scientific confidence that typified the 1970s and early 1980s. These included the political instability in South Africa during the last years of the Apartheid regime and the inevitable knock-on effect on the South African economy, and therefore also the construction industry; the emergence of the digital revolution and the ensuing access to knowledge, information and products; the arrival of practicable software for drafting on affordable personal computers that initiated the shift from the drawing board to the keyboard.

During the early 1990s the long overdue, and inevitable, changes in the political climate (and subsequently also in the academic landscape) forced UP to implement a number of reforms in an attempt to adapt to a country on the threshold of democratic elections. The Department was criticised for the lack of diversity in the staff and student corpus (CAA 1994:5), which was also evident in the institution as a whole:

At the beginning of the 1990s the general perception of the University [of Pretoria], seen externally, was that it was an extremely conservative, mainly white and Afrikaans-medium institution, largely oriented toward tuition with less emphasis on research, fairly introverted and, in its community service, oriented mainly toward the needs of white and more specifically Afrikaans-speaking people. Seen internally, there was a large measure of self-satisfaction that the University's size in student numbers and sustained growth automatically presupposed a high academic status. (UP 2002:7)

One of these reforms addressed the introduction of English as a language of instruction "if the number of students in the relevant courses justified this" (UP 2002:7).

5.8.3. Academic intentions (1985-1994)

Under Holm there was a determined effort to move from a technical tradition towards a more rounded design school (CAA 1994:4). By 1993, the year the Department celebrated its golden jubilee (UP 2002:192), it was apparent that the traditional strengths of the Department were supplemented with competencies that were not always earlier evident. Fisher and Le Roux (1993:24), with reference to the fifth year students' dissertation projects, state:

The latest documents speak of thoroughness and academic rigour. This derives from a longstanding tradition. A Tukkie's 'skripsie' [UP dissertation] is recognizably such. The academic style of the writing is due to the discipline and skills acquired in the Environmental History coursework. The theoretical foundation is a more recent development and is witness to the success of the Design Theory coursework developed over the past six years. Needless to say, technical documentation remains of the high standard for which we are famous (notorious?) and which makes our graduates highly sought in practice [...].

Bakker (1994:16), in his reflection on the golden jubilee of the Department, added:

The Pretoria School of Architecture subscribes to an Ecosystemic point of view. Within such a viewpoint one could argue that divergent architectural approaches are valid parts of the whole of architecture and can (hopefully) all be employed to attain meaningful synthesis.

The Department declared its objectives to the Commonwealth Association of Architects (CAA) as follows:

We focus on the following teaching and research:

- Ecosystemic thinking in Environmental History and Design Theory
- Context conscious design informed by holism
- A systems approach to sustainable development
- Environmentally responsive design on a regional basis
- Advancement of the rural environment. (CAA 1994:3)

These statements were reaffirmed by the Department's normative declaration that "Emphasis is on the broad discipline of architecture, of which practice is but a component. We are not training practitioners but preparing critical graduates who may go into practice" (Fisher & Le Roux 1993:24). It was also generally accepted that students would extend the duration of their studies beyond the minimum prescribed five years as the majority "[...] choose to undertake a period of practical experience in architectural practice before completing their academic studies" (CAA 1994:3).

International recognition of the Department's academic programmes followed the first democratic elections in South Africa held in 1994.

Directly after the establishment of the first full South African Democracy, a representative of the department, Roger Fisher, was granted observer status at the 14th General Assembly of the Commonwealth Association of Architects (CAA) held in Mauritius in April 1994. While in progress, news came through of South Africa's re-admission to the Commonwealth and arrangements were immediately made for the international accreditation of the professional degree course in Architecture. A joint visit of the South African Council of Architects (SACA) and CAA was arranged for September of that year and so the Pretoria School of Architecture was the first school in South Africa under the new political dispensation to achieve international recognition, and in terms of an agreement negotiated by SACA with the Royal Institute of British Architects (RIBA), was also accredited by RIBA in 1995. (UP 2002:193)

During the last official years of Apartheid the aforesaid, and imminent, changes would only marginally affect the admission process and selection procedures.

5.8.4. Curriculum (1985-1994)

The changes introduced in 1987 refined the curriculum and involved other departments in the presentation of some modules. The applied theory course became independent from the studio module in Design when a new subject stream in Design Theory was introduced. The philosophy of culture introduced into the History of the Environment subject stream was articulated as a separate module in the history stream and presented by the Department of Philosophy (UP 1987a:99-101). The modules in Theory of Structures were transferred from mostly Departmental presentation to become the responsibility of the Department of Civil Engineering (Kemp 1991:23).

Building Technology was finally renamed Building Science in 1987, a shift that underscored the scientific approach established over the course of the preceding two decades. A good example of this approach was the new syllabus in the field of sustainability for Building Science in the fourth year of study that was developed by Holm (Fisher & Clarke 2011:19). Fisher and Clarke (2011:19-22) also explain that the work on thermal performance initiated in the 1970s came to fruition in the research studies of the members of staff, specifically that by Holm (1985), Kemp (1988) and Wegelin (1988), who would later followed by Irurah (1997), Gibberd (2003) and others.

Minor changes were introduced in 1993, “[...] leading to a better balance and dovetailing of coursework [...]” (Fisher & Le Roux 1993:24). Table 5.3 summarises the core curriculum for the period from 1985 to 1994.

TABLE 5.3: Core curriculum for architecture at UP in 1985, 1987 and 1994 (UP 1985:78-79, 1987b:83-84, 1994:92-93)

TYPE	Full-time degree – BArch	Full-time degree – BArch	Full-time degree – BArch
YEAR	1985	1987	1994
1	Design [2] Building Technology [2] History of the Environment [1] Theory of Structures [2] Site Surveying [1]	Design [2] Building Science [2] History of the Environment [1] Theory of Structures [2] Design Theory [1]	Design [2] Building Science [2] History of the Environment [1] Theory of Structures [2] Design Theory [1]
2	Design [2] Building Technology [2] History of the Environment [2] Theory of Structures [2] Building Services [1] Quantities [1]	Design [2] Building Science [2] History of the Environment [2] Theory of Structures [2] Building Climate [1] Design Theory [1]	Design [2] Building Science [2] History of the Environment [1] Theory of Structures [2] Building Climate [2] Design Theory [1]
3	Design [2] Building Technology [2] History of the Environment [2] Theory of Structures [2] Building Services [2] Building Economy [1] City Planning [1]	Design [2] Building Science [2] History of the Environment [2] Theory of Structures [2] Building Climate [2] Design Theory [1]	Design [2] Building Science [2] History of the Environment [1] Theory of Structures [2] Building Climate [2] Design Theory [1]
4	Design [2] Building Technology [2] History of the Environment [1] Building Services [1] Mercantile Law [1] Landscape Architecture [1]	Design [2] Building Science [2] History of the Environment [2] Building Climate [1] Practice Management [2] Design Theory [1] City Planning	Design [2] Building Science [2] History of the Environment [1] Practice Management [2] Design Theory [1] An approved elective module [2]
5	Design [1] Building Technology [1] Professional Practice [1] Office Practice [1] An approved elective module [2]	Design [2] Building Science [2] Practice Management [2] An approved elective module [2]	Design [2] Building Science [2] Practice Management [2] History of the Environment [1] Design Theory [1]

[2] Indicates the number of semester courses per subject stream in an academic year.

5.8.5. Requirements for admission (1985-1994)

From 1987 onwards, the minimum admission requirements for Mathematics and Physical Science were raised from the previous requirements that expected a matriculant to pass to at least a D symbol (50%) on the Higher Grade (Kemp 1991:23). This move is indicative of the aspirations that were associated with academic accomplishment and thus raised the bar for applicants to and students in the Department.

5.8.6. Selection procedure (1985-1994)

Herholdt's selection regime was heavily curtailed for the intake of 1985 and 1986, after which a rationalised procedure was introduced from the intake of the 1987 academic year to align selection with the revised curriculum (Kemp 1991:18-24). Herholdt's continued involvement with the selection procedure was certainly pivotal to its success, at least as far as the marking of the Rorschach test was concerned; nonetheless, he was occasionally replaced by another member of the Department's academic staff (Kemp 1991:28). This was in all probability necessitated by Herholdt's managerial responsibilities as Director for Personnel (later Human Resources) at UP, a fulltime position that he was appointed to in 1985 (UP 1996a:483).

In 1987 the Department of Landscape Architecture became an independent entity (UP 1996a:224). Despite provision having been made for the selection of students in landscape architecture from 1971, it only became necessary to implement selection by 1990 when interest had so grown that the annual intake had to be limited to 20 students (UP 1996a:225). From correspondence it is clear that their selection was done with, and on the same basis as for those of the applicants for studies in architecture (Departement Argitektuur 1991b).

Selective admission was still required as the number of applications exceeded the number of available places in the architecture programme; for the early 1990s an average of 70 applications were received annually while resources allowed for an intake of 40 students, according to CAA (1994:3). The discussion that follows concentrates on the changes that were introduced as a means of rationalising the assessment tools used for the admission of beginner students in architecture at UP during the period from 1985 until 1994.

5.8.7. Academic record (1985-1994)

An applicant's academic record was still considered on the basis of the average of four subjects, namely the two official language subjects, as well as those of Mathematics and Physical Science. In addition to the implementation of the higher requirements for admission, the course content was updated and stricter requirements for promotion to the following year of study were implemented. Coupled with these higher standards, supplementary examinations were done away with, except for the first semester of the first year of study, and ancillary examinations were only allowed in exceptional cases.

From 1992 onwards, academic records for Standard 9 (at the time the penultimate year of high school, now known as Grade 11) became the basis for academic consideration as the closing date for applications moved forward to 30 June of the year preceding study. This allowed selection to be done during the last half of the academic as well as calendar year, instead of in the month just before students were expected to register for the first time. Despite the seemingly practical sensibleness of this decision, it provided a new challenge that Holm writes about to the Dean:

[All of our experience in selection depends on matriculation results. The reliability of selection is impeded with standard nine results as reference, as is the extent with which we, as a Department, can vouch for it. The new procedure can, to a degree, be viewed as an experiment, except for the fact that no concurrent control group exists.]⁹ Translated from the original Afrikaans in Departement Argitektuur (1991b:1).

Notwithstanding his objection, the prominence given to an applicant's academic record was carried forward and would in subsequent years dominate selection at UP. The differentiation between the applicant's academic record at the time of application (usually lodged while the applicant was still completing his or her secondary schooling) and the final matriculation results were also considered by Abercrombie et al (1969:17) at the Bartlett School of Architecture – see Chapter 3.6.3.

5.8.8. Special architecture tests (1985-1994)

In 1985 the predictive scales that were used to forecast an applicant's possible future academic success fell away (Kemp 1991:18), seemingly as places were already being filled from the top of the order of assessments. In 1985 and 1986 only the Rorschach test from the original battery and the drawing test were retained. From 1985 onwards, questionnaires on applicants' interests were added (Kemp 1991:15); from an archived example (undated 'Belangstellingsvraelys' in Departement Argitektuur 1971) the first section thereof entailed a series of general knowledge questions that were also scored on revised test result sheets (Figure 5.3).

From 1987 until 1994 only the Rorschach and drawing tests, the personal questionnaire and a revised questionnaire on applicants' interests were used. Herholdt's findings, specifically on the predictive value of the Rorschach test and the average mark for the four matriculation subjects, served as justification. Kemp (1991:24) reasons that the omission of the additional tests was inconsequential as they contributed little to the selection results when one considers the time and effort required for their assessment. In many instances they served only to inform the predictive scaling forecast, which was no longer in use.

Concerns were however raised about the consistency of the marking of the Rorschach test by a panel of different assessors, presumably under the guidance of Herholdt as regulations stipulated that a registered industrial psychologist was responsible for psychological testing (see, for example, Departement Argitektuur 1991a). Kemp (1991:37) recommended that the possibility be investigated to shorten the duration of the one-hour long Rorschach test. It is unclear if this would have made the assessment easier.

9 "Ons hele ondervinding berus op keuring met matrikulasië-uitslae as basis. Met standerd nege uitslae as basis verminder die betroubaarheid van die keuring en die mate waartoe ons as Departement daarvoor kan instaan. Die nuwe prosedure kan in 'n mate as 'n eksperiment beskou word, behalwe dat daar nie 'n gelyktydige kontrolegroep bestaan nie." (Departement Argitektuur 1991b:1).

NOMMER	NAAM EN VOORLETTERS	GESLAG						
TEKENTOETS								
MATRIEK- GEMIDDELD								
AFRIKAANS	<table border="1"> <tr><td>F</td><td>E</td><td>D</td><td>C</td><td>B</td><td>A</td></tr> </table>		F	E	D	C	B	A
F	E	D	C	B	A			
ENGELS	<table border="1"> <tr><td>F</td><td>E</td><td>D</td><td>C</td><td>B</td><td>A</td></tr> </table>		F	E	D	C	B	A
F	E	D	C	B	A			
WISKUNDE	<table border="1"> <tr><td>F</td><td>E</td><td>D</td><td>C</td><td>B</td><td>A</td></tr> </table>		F	E	D	C	B	A
F	E	D	C	B	A			
WETENSKAP	<table border="1"> <tr><td>F</td><td>E</td><td>D</td><td>C</td><td>B</td><td>A</td></tr> </table>		F	E	D	C	B	A
F	E	D	C	B	A			
ALGEMENE KENNIS	<table border="1"> <tr> <td>BAIE SWAK</td> <td>SWAK</td> <td>BEVRE- DIGEND</td> <td>GOED</td> <td>BAIE GOED</td> <td>UITSTEKEND</td> </tr> </table>		BAIE SWAK	SWAK	BEVRE- DIGEND	GOED	BAIE GOED	UITSTEKEND
BAIE SWAK	SWAK	BEVRE- DIGEND	GOED	BAIE GOED	UITSTEKEND			
RORSCHACH								
OPMERKINGS	<div style="border: 1px solid black; height: 200px; width: 100%;"></div>							
		<div style="border: 1px solid black; width: 50px; height: 50px; display: inline-block;"></div>						
		UITSLAG						

FIGURE 5.3 Example of a test result sheet from 1987 showing an applicant's scores in the drawing test, average for matric and the four matriculation subjects individually, followed by general knowledge, the Rorschach and a block for general comments. The result was summarised at the right bottom of the sheet (Kemp 1991:26)

5.8.9. Interviews (1985-1994)

As in previous years, panel interviews concluded the selection process. The newly added questionnaire on an applicant's interests provided an easy platform for the selectors to engage with applicants during the interview (Kemp 1991:24-25).

5.8.10. Outcomes (1985-1994)

Kemp (1991:30) reviews the outcomes for the period between 1987 and 1990. It is noticeable that attrition during the first semester of the first year of study became negligible at 1.28%, effectively ensuring that the student body grew by an average of just over 35 first year students per year between 1987 and 1990. The percentage of female students commencing their studies at the Department drastically changed from the previous episode, when they comprised barely 10% of the cross-validation group in 1970 (Herholdt 1972:169). By 1990 the genders were equally represented with 17 male and 17 female students in the first year of study, with a clear trend towards an increasing number of female students.

On the face of it the intake lists for the same period indicates that all students admitted to the Department were white and, by deduction according to their surnames, mostly Afrikaans speaking. The policy to include English as a language of instruction was only implemented in 1994 (UP 2002:7) and would only start to impact teaching in the subsequent decade and after the first democratic elections of 1994.

In concluding his review of the first twenty years of selection at the Department, Kemp (1991:37-38) expressed the need for younger members to serve on the selection committee and that there should be continued efforts to find tests to access and assess creativity, synthesis and holism. While noting that fine-tuning would be required, especially to accommodate a future student body of greater diversity, he made a strong case for continuing the selection programme based on his statistical analysis of the academic indicators since 1971. He attributed the successes of the selection procedure to the higher admission requirements and the fact that, after twenty years, the culture of selection was firmly established and the selectors understood its procedures.

5.8.11. Discussion: Episode 1 (1971-1994)

Research on the selection of architecture students at the University of Pretoria was prompted in the late 1960s by a significant jump in the number of applications received. Between 1971 and 1994, Herholdt's research informed a selection programme that was used to predict which applicants (from the narrow band who had access to the University under the Apartheid regime) had a high probability of passing their first year of study in architecture at UP.

The selection procedure considered three types of assessment tools: academic record, special architecture tests that included a battery of particular psychometrics-based tests, and interviews. Scientifically pragmatic assessment procedures mapped aspects of an applicant's scores as a graphic summary that served to inform a panel of selectors during the final stage of selection interviews. Success in the first year of study was, at least initially, empirically predicted to identify those applicants with a high probability of passing. The relationship between the primary signifiers – notably the Rorschach test and final school results – as well as all the subsets, especially during the earlier period of implementation, was empirically driven and continuously monitored through statistical analysis of students' results throughout

their studies. This process aligned the selection procedure with the academic-scientific approach followed by the Department at the time and established their mutual compatibility.

The academic restructuring in 1987 brought about several discreet changes that collectively raised expectations and streamlined the screening process for selection and continued its statistical successes from the previous episode. On the other hand it also brought an end to the experimentation evident in the earlier years, as documented in Herholdt's research.

While the research initially established an analogous relationship between selection and studies in architecture at the institution, its assumptions relied on deduction at an arm's length and its long-term compatibility was limited by its inherent procedures that responded to the narrow group of research subjects who had access to higher education at UP at the time.

5.9. EPISODE 2: INTERREGNUM (1995-2006)

The second episode of this case study, for the period between 1995 and 2006, is viewed as an interim period or a period of discontinuity or intermission (Latin: *interregnum*) for the selection of beginner students for admission to architecture at UP. The discipline-specific procedure developed during the preceding episode was lost in a universal approach while the academic offering and the managerial structures of the institution were being recalibrated in response to reforms of the political, educational and professional landscapes under a new democratic dispensation after the 1994 elections.

5.9.1. Regulatory framework (1995-2006)

Through political transformation the regulation of the architect's profession in South Africa changed substantially after 1994. The South African Qualifications Authority (**SAQA**) Act (No. 58 of 1995), and subsequently the National Qualifications Framework Act (No. 67 of 2008), laid the groundwork for the establishment of an integrated NQF in order to register, regulate and articulate all qualifications and by so doing facilitating access to, and progression within, career paths to accelerate the redress of previous discriminatory practices (SAQA 2017).

According to the National Commission on Higher Education, academic programmes, as redefined, were required to adhere to the values of interdisciplinarity, relevance and responsiveness, efficiency, portability and coherence (Council on Higher Education 2001:46). Some of these values were clearly not represented in the regulatory framework that guided the education or practice of architects before 2000, when the Architectural Profession Act (No. 44 of 2000) and the Landscape Architectural Professions Act (No. 45 of 2000) were promulgated. The former established SACAP as statutory successor of the South African Council for Architects and mandated it with an oversight role that included the validation of academic programmes related to the architectural profession, the registration of practitioners in four main

categories of registration,¹⁰ the protection of the public interest through the administration of a code of conduct and eventually by the identification of the scope of work registered professionals were deemed competent and capable of performing (SACAP 2017).

Rob Young-Pugh (2005:35) assesses these developments as follows:

The new statutory legislation provides a powerful tool for the democratization and regularization of the profession, and addresses changes in the design process. The system discourages the growth of an unregistered informal sector within the parameters of a democratic and antimonopolistic dispensation, yet establishes an expectation for professionalism at all levels of architectural service provision. The hierarchical nature of the registration categories allows for vertical mobility based on work experience or formal training and can thus accommodate an educational system that has exit points at various levels.

The pre-existing legal definition of the profession was thus broadened and redefined. The new legislative framework had a substantial impact on the revised curriculum and the structure of the academic programmes.

5.9.2. Academic context (1995-2006)

Following years of escalating political and economic isolation during the era of Apartheid, especially since the mid-1980s, the last decade of the twentieth century brought radical policy changes that resulted from the first democratically elected government's reform of higher education. This set in motion the re-integration of the Departments of Architecture and Landscape Architecture as part of restructuring in the Division for Environmental Design and Management (UP 2002:192). Simultaneously, the University mandated that academic programmes respond to new policies that called for the promotion of interdisciplinary learning to avoid "wasteful overlap and duplication of programmes and qualifications" (Council on Higher Education 2001:87). The impending implementation of an integrated framework for qualifications – the NQF – had substantial impact on the regulatory framework within which academic programmes and their outcomes were defined. The shift is summarised in UP (2001:4):

In 2000 the University of Pretoria started to phase in a new system of education and learning which corresponds with the required guidelines of SAQA (the South African Qualifications Authority) and the NQF (National Qualifications Framework). In this system programmes are offered which are outcomes-based, student-centred and market-orientated. The new system is being implemented in the School for the Built Environment during 2001.

The possibility that generic curriculum components might in future be presented in an interdisciplinary fashion was hinted at by Prof. Schalk W. le Roux three years before it would become a reality, albeit that at the time he made reference to the programmes in architecture, landscape architecture and town and

¹⁰ Four main categories of registration were acknowledged, namely: architect, senior architectural technologist, architectural technologist and architectural draughtsperson, all with either a professional or candidate designation. Under the previous Architects' Act 1970 (No. 35 of 1970) provision was only made for the registration category of architect (and architect-in-training that was the equivalent of a candidate under current legislation).

regional planning. He argued that such a move might be motivated by a need to sidestep an exaggerated sense of specialisation at undergraduate level in these disciplines (Le Roux 1994:17).

The spirit of this era is précised in a statement by the Head to the visiting boards of South African Council of Architects, the RIBA and the CAA: “Like the rest of the country we are in a state of flux and continually having to assess our position and circumstances” (Department of Architecture and Landscape Architecture 1999:2).

Prof. le Roux (see Appendix 3 for biographical information) succeeded Holm as Head of Department in 1997. In the same year the School was renamed to the Department of Architecture and Landscape Architecture (UP 2002:193-194) and Prof. Roger C. Fisher was appointed as its curriculum co-ordinator. During Le Roux’s tenure the curriculum would be revised in its totality to provide for interdisciplinary learning and teaching aligned with the expected regulatory frameworks. It was again reviewed when the programme in interior design was assigned to the Department. Subsequently the name reverted back to the Department of Architecture in 2001 (UP 2001:1); in the pro forma for external communication the name was followed by a subheading with the names of the three programmes in alphabetical order: Architecture, Interior Architecture, Landscape Architecture – see Figure 5.4.

DEPARTMENT OF ARCHITECTURE
 ARCHITECTURE | INTERIOR ARCHITECTURE | LANDSCAPE ARCHITECTURE

The Department of Architecture is a flagship member of the University of Pretoria. Through internationally accredited programmes and commitment to innovation, we promote a sustainable and prospering South African society.

UNDERGRADUATE PROGRAMMES

The following undergraduate degrees are offered:

- Architecture - BSc(Arch)
- Interior Architecture - BSc(Int)
- Landscape Architecture - BSc(LArch).

Requirements: Grade 12 certificate with university endorsement; subjects must include a science with preference for Physical Science and Mathematics. Admission by selection.
 Duration: Minimum of three years, full time only.
 Closing date for applications: 30 June 2004.

Contact: tel: 012 420 3111, fax: 012 420 4555 or e-mail: csc@up.ac.za

POSTGRADUATE PROGRAMMES

By coursework:
 The following Master's degrees are offered by course work for purposes of professional registration:

- Master of Architecture (Professional) - MArch(Prof)
- Master of Interior Architecture (Professional) - MInt(Prof)
- Master of Landscape Architecture (Professional) - ML(Prof).

Requirements: Any candidate with an undergraduate degree in Design in the Built Environment professions or an appropriate recognised tertiary degree is eligible. Admission by selection, including a portfolio review.
 Duration: Minimum of two years, full time only. Design professionals wishing to qualify for an additional profession are welcome to apply for an accelerated programme.
 Closing date for applications: End of October.

Contact: tel: 012 420 2550, fax: 012 420 2552 or e-mail: archi@postino.up.ac.za

By research:
 The Department encourages practitioners, researchers and members of the profession in support services to formalise their experience and concerns through postgraduate studies and research. The following research degrees are available:

- Master of Architecture - MArch
- Master of Interior Architecture - MInt
- Master of Landscape Architecture - ML
- Doctoral studies - PhD (with specialisation in Architecture, Interior Architecture or Landscape Architecture).

Contact: tel: 012 420 2550, fax: 012 420 2552 or e-mail: archi@postino.up.ac.za

UNIVERSITY OF PRETORIA

FIGURE 5.4 An example of the Department of Architecture’s identity with the names of the three programmes in alphabetical order used as a subheading; this advertisement was published on the back cover of the ‘Design 100’ issue of *Image & Text* that celebrated the sixtieth anniversary of the Department (Fisher 2003:2). Design by Glowing Asparagus Design.

There were also practical implications of the new integrated curriculum structure. The generic first year of study presented the Department with double the number of students previously accommodated in this studio, totalling 120 for the combined three programmes. Lemmer (2004:362) emphasises that this meant that the lecturer to student ratio was less than favourable and that the workload in the combined studio and in all of those subjects that formed part of the core generic curriculum increased substantially, including the duration of assessments, whether these were portfolio reviews, oral examinations or written papers.

Le Roux's tenure as Head ended in 2003 and Prof. 'Ora Joubert (see Appendix 3 for biographical information) was appointed to succeed him. Due to her pre-existing appointment as Head of the School in Bloemfontein, she could only commence her appointment in September of 2004. In the interim Fisher (see Appendix 3 for biographical information) was appointed as acting Head for the first eight months of the 2004 academic year.

5.9.3. Academic intentions (1995-2006)

The new Bachelor of Science in Architecture qualification aimed to produce "[...] graduates who have a clear, continuous and growing understanding of the discipline, who enjoy the opportunity of continued studies toward the professional status of their discipline and are able to move into related professional fields" (Lemmer 2004:357) including the related architectural disciplines (such as landscape architecture), project management, urban design, environmental management and others (UP 2003:2).

The established contextual¹¹ approach followed in the Department's design and history streams ideally suited the interdisciplinary agenda. Bakker (1997:4) explains:

Students of the various disciplines involved in the course cross the traditional boundaries brought about by specialisation into the various professional disciplines, and are exposed to the relationships existing between the professions, together with the intertwined and unitary nature of the theory and processes involved in the making of the built environment.

Although Le Roux declared: "We are a new department with changed and changing profiles of professional skills" (Department of Architecture and Landscape Architecture 1999:4), the School's pre-existing interest in and research on sustainability in the built environment was strengthened by the ecological focus of the programme in landscape architecture. As a result Resource Efficient Design (Fisher & Clarke 2011:19) across various design scales and systems was further entrenched as a core concern of the Department (Wegelin 2005:91). It was also explicitly formulated in the outcomes for the critical cross-field and exit level competencies expected of graduates in the BSc programmes. This included:

11 "Within this perspective key artefacts, like works of architecture, are read within a wider text of synchronic but paradigmatically bound abstract thought and concurrent cultural endeavours like art, music, literature and the like, together with the possibilities and restraints posed by concrete contexts. The meaning extracted on the synchronic level may then be applied diachronically within the disciplines which form part of the architecture course as a whole." (Bakker 1997:1)

Using the human and natural sciences and technologies effectively and critically, showing responsibility towards the environment and well-being of others [and] Demonstrating and understanding of the world as a set of related systems by recognising that problem-solving contexts do not exist in isolation. (Lemmer 2004:358)

The pedagogic approach in the construction subject stream had to be revised as the principles of *techne* and building technology had to be extended to include all three scales of design that were to be taught. This, together with a larger student body, required a recalibration of the foregoing approach of teaching canonical knowledge in a subject that was one of the historical strong suits of the Department. Inevitably an approach of teaching typical principles, illustrated through an exemplar, evolved. This revised outlook also presented the opportunity to formally introduce historical and indigenous aspects of the knowledge of construction; it also required a more purposeful interaction and integration with the studio components of the programmes (Wegelin 2005:91-92).

5.9.4. Curriculum (1995-2006)

Shortly after his appointment as curriculum co-ordinator in 1997 Fisher undertook a study tour to the United Kingdom and the Netherlands to investigate interdisciplinary teaching at, among others, the Universities of Bath, Greenwich, Delft and Wageningen (Fisher 1997). As no local precedent existed, the aim was to resolve the restructuring of the programmes in architecture and landscape architecture in anticipation of the proposed new tiered categories of professional registration that would eventually be legislated in 2000.

The obvious commonality between the two programmes was found in the studio-based teaching of spatial design and therefore the requirements of international accrediting bodies (notably the RIBA and the CAA that stipulated that at least half of all formal learning should be studio-based) were pivotal in resolving the new structure. Based on the shared premises that design is the core task of designers in the built environment and that spatial design is founded equally in the natural sciences and humanities, a core curriculum was designed that provided for secondary design skills development and courses in professional practice. Moreover, limited resources were available to accommodate the combined student body and any future changes had to emphasise effective presentation (Lemmer 2004:356).

The new curriculum allowed for three-year undergraduate degrees, followed by master's programmes by coursework over two years (incidentally corresponding with the first two cycles of the Bologna process). These changes were approved for implementation and progressively phased in. In 1999, the year of the first new enrolments in the new undergraduate programmes in architecture and landscape architecture, a major restructuring of all faculties at the University of Pretoria was announced that resulted in the programme in interior design being integrated in the Department, as well as the Division for Environmental Design and Management to be renamed the School for the Built Environment and moved to the newly constituted Faculty of Engineering, Built Environment and Information Technology (UP 2002:192).

The curriculum was again adjusted so as to accommodate the interior design stream. The result was that all three of the Department's academic programmes – architecture, interior architecture and landscape architecture – shared an equifinal, homologous structure with a generic first year of study. In Design and Construction, which replaced Building Science (UP 1999:93), the content became progressively more programme specific after the generic first year of study. From the second year onwards:

[...] the disciplines split up in terms of Design and certain discipline specific modules, where the course content distinguishes the profession. However, certain modules, which are relevant and of value to all specialisations, are taken by all students, for example history and theory of design in the built and made environment. Furthermore, an integration of theory and design is emphasised. Design projects are assigned where students from the various disciplines may participate together. (Lemmer 2004:357)

Teaching in the new interdisciplinary framework was fully integrated by 2001 and the phasing out of the five year degree in architecture and four year degrees in landscape architecture and interior design was completed by 2003 (UP 2003:12-14, 19-21, 26-28). Table 5.4 indicates the components of the generic core curriculum with those for the new undergraduate programmes in architecture – BSc(Arch), Landscape Architecture – BSc(LArch) and Interior Architecture BSc(Int) as presented in 2003.

The last major reform to the course structure was implemented in 2004 when the two-year professional postgraduate degrees by coursework was divided into a one-year honours degree, followed by a one-year professional master's degree (UP 2004:11-18). The distinct structure of the Department's academic offering, without the typical division between the programmes into professional silos, would become a strength of the Department and the main element in distinguishing it from other schools of architecture in the country.

The revised curriculum addressed the perceived shortcomings in applicants' schooling by introducing language instruction for the purpose of academic literacy in the first year of study, while providing a new subject stream – Earth Studies – that was overtly concerned with the environment, the reciprocation between natural systems and designed space, as well as Resource Efficient Design framed within an ecotropic¹² approach (Fisher & Clarke 2011:19). A computer laboratory was established to facilitate the transfer of digital skills (in the Design Communication modules in the second year of study) and the History of the Environment subjects were realigned with special attention being paid to Africa (Department of Architecture and Landscape Architecture 1999:4).

12 "To think ecosystemically is to think of systems as nested, each as part of a larger system; made up of sub-systems and in turn as a part of a supra-system. These sub-systems can develop properties that are emergent and are thus uniquely properties of the supra-system and not found in the sub-systems. We can thus speak of the ecology of building materials as biologists would use the term, and understand the term and see each element as part of a larger whole which impacts on other sub- and supra-systems. We propose that design that has such a fit be termed 'ecotropic', rather than 'green' or 'sustainable'." (Fisher & Clarke 2011:20)

TABLE 5.4: Course diagram of the core curriculum for the undergraduate degrees in 2003 after UP (2003:11-28)

YEAR	SEMESTER	PRACTICE MANAGEMENT	PROGRAMME SPECIFIC	EARTH STUDIES	CONSTRUCTION	DESIGN	ENVIRONMENTAL STUDIES	HISTORY OF THE ENVIRONMENT	DESIGN COMMUNICATION		
1	1			AAL 110	KON 110	ONT 100	OML 110	OMG 110	ACADEMIC LITERACY	Core Generic	
	2	CIL 120	STU 120		KON 120		OML 120	OMG 120	ACADEMIC LITERACY		
2	1			AAL 210			OML 210	OMG 210	OKU 210		
	2						OML 220	OMG 220	OKU 220		
3	1	BER 310					OML 310	OMG 310			
	2	PRS 320		AAL 320			OML 320	OMG 320			
THEORY OF STRUCTURES											
2	1		STU 211		KON 211	ONT 210					BSc(Arch)
	2		STU 221	GGY 363 GKD 225	KON 220	ONT 220					
3	1		STU 311		KON 310	ONT 310			GGY 283		
	2		STU 321		KON 321	ONT 320					
PLANT SCIENCE											
2	1		PWT 212		KON 212	ONT 212				BSc(LArch)	
	2		PWT 222	GGY 363 GKD 225	KON 220	ONT 222					
3	1		PWT 312		KON 310	ONT 312			GGY 283		
	2		PWT 322		KON 322	ONT 322					
MATERIAL STUDIES											
2	1		TKS 251 TKS 252		KON 211	ONT 213					BSc(Int)
	2		TKS 261 TKS 262	AAL 223	KON 223	ONT 223					
3	1		MST 313		KON 313	ONT 313			OKU 313		
	2		TKS 361 MST 323		KON 323	ONT 323					

LEGEND:

AAL: Earth Studies	KON: Construction	ONT: Design
BER: Business Law	MST: Material Science	PRS: Practice Management
CIL: Computer and Information Literacy	OKU: Design Communication	PWT: Plant Science
GGY: Geomorphology of the Built Environment	OMG: History of the Environment	STU: Theory of Structures
GKD: General Soil Science	OML: Environmental Studies	TKS: Textiles

The new curriculum was fully implemented by the end of Le Roux's tenure as Head in 2003. He also inspired a renewed spirit of academic optimism as the coalition between the three programmes became the hallmark of the School and informed an ethos of interdisciplinary thinking and doing. It can also be argued that the programme in architecture benefitted the most from the alliance as it could relate and absorb from the scale, core concerns and specific content of the other two programmes.

5.9.5. Requirements for admission (1995-2006)

During 1994 the Faculty Board approved a new selection procedure for the 1995 intake. The motivation stated that the rationalisation was in keeping with the Division's directive for more uniformity and that administrative arrangements would be simplified without sacrificing standards (Departement Argitektuur 1994a:1). The regulation reversed the higher admission requirements for Mathematics and Physical Science, but retained these as prescribed subjects for admission. The minimum requirements thus reverted back to a certificate of matriculation exemption with university admission and at least 40% in both Mathematics and Physical Science on the Higher Grade or, alternatively, 50%¹³ on the Standard Grade (UP 1997:82).

At the same time a scoring system for selection was introduced to express an applicant's academic achievement at school in a simplified numeric format. The new scoring system took account of an applicant's results for either Standard 9 or their final matriculation results. It favoured the four designated subjects required for admission and was summarised in a letter to prospective students as follows:

Points are awarded in accordance with your achievement in each subject passed. The calculation is done in accordance with the following table:

Symbols	Higher Grade	Standard Grade
A symbol (80% and higher)	5	4
B symbol (70% to 79%)	4	3
C symbol (60% to 69%)	3	2
D symbol (50% to 59%)	2	1
E symbol (40% to 49%)	1	0

The formula used to calculate your selection mark is as follows: The value you obtained for First Language, plus best Second Language, plus Mathematics plus Physical Science are multiplied by two. The points you obtain for the other subjects are added once only. The sum of these points is your selection mark. (UP 1996b:1)

Under the administration of the new Faculty of Engineering, Built Environment and Information Technology from 2000 onwards, all of the six matriculation subjects equally contributed to an applicant's academic rating in a system that became known as the Matriculation Score (colloquially abbreviated to M Score). It assigned the same values to symbols achieved in school subjects as those quoted above, but omitted the weighting of the prerequisite subjects in order to obtain a maximum possible score of thirty, i.e. six subjects with a maximum value of five points per subject.

This generic Matriculation Score served as the benchmark for the selection of beginner students until 2006. The Following example serves to illustrate how it was calculated:

¹³ The requirement for an applicant's minimum achievement for Mathematics and Physical Science on the Standard was pinned at 60% for the 1995 and 1996 academic years. This was lowered to 50 from 1997 onwards (UP 1995:74, 1997:82).

Calculate the M score by adding the points awarded per subject according to the following formula:

First language + Mathematics + Physical Science + best three of the remaining subjects

Example of M Score Calculation

PRESCRIBED SUBJECTS	SYMBOL	POINTS
First Language HG	A	5
Mathematics HG	C	3
Physical Science HG	B	4
BEST THREE OF THE REMAINING SUBJECTS		
Second Language HG	B	4
<i>for example</i> Biology SG	D	1
<i>for example</i> Accounting SG	A	4
TOTAL M SCORE		21

Only six values are used in this formula, which means that the maximum possible M Score is 30 for six distinctions (above 80%) on the Higher Grade. (Department of Architecture [sa]:2)

By 1997 provision was made for four categories of applicants, namely matriculants, applicants who applied to transfer from other programmes or institutions, non-South African citizens and historically disadvantaged applicants. The latter served as affirmative action¹⁴ and a quota system was used to determine the number of applicants per category that would be admitted. The Matriculation Score differentiated between the categories of applicants, but also required a higher Matriculation Score for Grade 11 results than for the final school year in Grade 12. The quotas and the minimum Matriculation Score required for admission were annually reviewed; for the 2006 academic year the minimum Matriculation Score was 20 out of a possible 30 for Grade 11 and a score of 18 for Grade 12. The requirements for historically disadvantaged applicants were respectively two points lower on each count (UP 2006:1).

There was, however, no guarantee that an applicant who met the requirements would be admitted to the Department. As places were filled from the top of the list based on Matriculation Scores, only those applicants who were among the top academic achievers in their respective categories were considered and successful applicants typically had a high academic capacity (Lemmer 2004:358) based on their school results.

5.9.6. Selection procedure (1995-2006)

The rationalised selection procedure, based on Herholdt's research and streamlined in 1987, was discontinued after the intake for 1994 (Departement Argitektuur 1994b:1). As Herholdt's research was informed by a homogenous group of white participants who were mostly male and Afrikaans speaking, the basis for selection was not representative of the desired demographic composition of a student body and it did not reflect the values of the new democratic South Africa. Other factors also contributed to the demise of the system: it was already evident that problems existed with the assessment of the Rorschach

¹⁴ Collins English Dictionary (2007:27) explains affirmative action as a policy or programme designed to counter discrimination and indicates that the British equivalent is positive discrimination.

test (Kemp 1991:37), one of the primary assessment tools of the procedure. This was amplified by Herholdt's lessening availability to assist with selection during his tenure as Director for Personnel. The second key indicator, academic record based on an applicant's matriculation results, had also been statistically devalued when it was replaced with Standard 9 marks two years before.

There was also significant pressure for a more unified admissions policy from both the University (Department of Architecture and Landscape Architecture 1999:4) and the newly established Division for Environmental Design and Management, whose influence was bolstered when Prof. H.M. Siglé was appointed as its first fulltime Director in 1997 (UP 2002:192). In this context, and despite far-reaching changes to curricula and the programme structures, the selection of first year students reverted principally to a generic assessment by institutional academic administration of an applicant's academic record.

5.9.7. Academic record (1995-2006)

From 1995 selection outcomes hinged on two generic formulae: firstly the applicant's Matriculation Score; secondly the annually revised cut-off score that took into account the number of applicants and the available number of places for new students (Departement Argitektuur 1996). These factors in combination effectively meant that meeting the minimum Matriculation Score provisionally guaranteed admission to the applicants who had obtained the best results in the four subjects, or from the 2000 academic year for all of the six prescribed matriculation subjects. Any places that became available were allocated to applicants, most often those who were still on the waiting list, after the final matriculation results became available and before the new academic year commenced (Departement Argitektuur 1994b:1-3).

After the re-integration of the programmes in architecture and landscape architecture in 1997, this system was also adopted to select applicants for landscape architecture and, from 2000, those for interior design. As the number of applications for the three programmes differed, the variable cut-off scores also fluctuated to fill the regulated 60 places available for architecture students and 30 each for those in interior and landscape architecture respectively.

As a result of the admission policy applicants who were not among the top academic achievers in their respective categories were simply not considered for admission. The process of selection was thus consigned to a largely administrative process where the applicant's academic record became the decisive assessment tool.

5.9.8. Interviews (1995-2006)

Informal interviews were used to fill any last possible available places in January of the year in which new students commenced their studies. This meant that only a small portion of applicants was interviewed. It would seem that the January interviews were specifically geared to consider historically disadvantaged

applicants, but from the archived selection lists it is clear that these numbers remained considerably lower than those for other categories of applicants (Departement Argitektuur en Landskapargitektuur 1998:1-4, 1999:3, 2000:1-3).

5.9.9. Outcomes (1995-2006)

In terms of the academic indicators the Matriculation Score was a mixed success: attrition among first year students in the generic first year of study fluctuated (11.8% in 2003, 17.7% in 2004, 7.3% in 2006), but remained more than double that of the average for all new first year students studying at the University of Pretoria for the corresponding period. More than 80% of students who took the final examination in Design at the end of first year passed (UP 2011a:25-44), but the rate of graduation was lower than the average for three year qualifications at UP (UP 2011b).

It is also clear that, at times, an excess number of students was admitted to compensate for trends in attrition and in an effort to address demographic inequity that resulted from the policy of using the nonspecific Matriculation Score. The remarkably high intake of 91 first year students in the architecture programme (instead of the allocated 60 places) for the intake of 2004 serves as an example of this practice (UP 2011a:37).

From the admission data it is clear that the number of applications for the undergraduate programme in architecture was increasing. The 205 applications for architecture in the 2000 academic year increased to 559 for 2005 and 622 for 2006 (Department of Architecture 2011). The variable cut-off score for architecture was therefore adjusted to an all-time high of 26 out of a possible 30,¹⁵ which was incongruous with the published minimum requirements for admission that called for a Matriculation Score of 18 for Grade 12 (UP 2006:1). This high cut-off score guaranteed admission in the first round to 52 applicants, of whom 73.1% were female and only one was a previously disadvantaged individual. This was slightly adjusted at the time of registration, without doubt a circumstance attributable to the interview cycle in January, but even then 62.3% of the cohort was female (Department of Architecture 2006:1-2) and only six were previously disadvantaged students (UP 2011b:1).

The result of using the Matriculation Score as the primary assessment tool was therefore that it skewed the demographics of the student body by admitting more white female applicants than any other group. Paradoxically this group also presented the highest rates of failure and attrition for the undergraduate programmes in the period between 2003 and 2006, estimated at a combined rate of over 50% compared to less than 20% for their male counterparts (Department of Architecture 2006). This alone indicates that

¹⁵ This meant that in order to be selected, a matriculant's overall achievement for six subjects could only be four symbols away from six distinctions on the Higher Grade. To illustrate the effect of the high variable cut-off score, an applicant with a Matriculation Score of 25 was placed on the waiting list and subsequently not considered for selection based on the following marks obtained in seven subjects on the higher grade: 81%, 80%, 74%, 72%, 70%, 71% and 68%. The lowest mark achieved in this example, namely 68%, was not taken into account in this calculation as the formula provided only for the six subjects required to matriculate (Department of Architecture 2005:16).

the admission policy was not entirely compatible with the study programme. While the Matriculation Score, on the face of it, provided an equitable basis to measure academic achievements during the final years of schooling, a mechanism for contextualising an applicant's academic achievement in terms of his or her own potential was lacking, any assessment of the applicant's abilities other than the outcomes prescribed for the matriculation subjects was unable to be expressed. The generic formula also did not account for any other contextual informants, such as geographic and socio-economic realities that continue to plague the South African basic education system through remnants of the historic inequalities carried over from the Apartheid era and its education policies that favoured and funded white learners above others.

The quotas allocated to historically disadvantaged applicants in the regulation for selection was much lower than for the other categories, amounting to a mere 5% of the intake for 2006, as opposed to 80% for the general category of matriculants (UP 2006:2). It is therefore not surprising that few candidates of colour were admitted, although the selection records indicate that the Department admitted more historically disadvantaged applicants than the regulated quotas provided for (Departement Argitektuur en Landskapargitektuur 1998:1-4, 1999:3, 2000:1-3). Between 2003 and 2006 applicants of colour on average made up 10.7% of the intake in the architecture programme (UP 2011b:1).

5.9.10. Discussion: Episode 2 (1995-2006)

The first selection system, informed by research based on the performance of a homogenous group of white and mostly male applicants, lost its credibility after 1994. Apart from the change in socio-political value systems, its demise was driven by managerial decisions resulting from the first democratically elected government's reform of higher education, but indirectly the indicators on which it relied had over time already been diluted. In the interim, and possibly for lack of other means, selection reverted to the applicant's academic record amidst far-reaching changes in managerial and academic frameworks, including curricula. Following the incorporation of the programmes in landscape and interior architecture into the Department, new policies standardised the Matriculation Score as the primary basis of selective admission. This effectively meant that all applicants to the design programmes in the built environment were selected with the same generic aggregate used for admission to other programmes across the institution (Department of Architecture and Landscape Architecture 1999:4).

During the interregnum from 1995 until 2006 the selection project was paused as institutional policy dictated uniform means of admission through selection. Programme specific selection that called for the coordination of individual qualities with the requirements for a specific course was lost as the means for admission reverted to general selection in accordance with the terms as previously defined by Herholdt (1972:11).

5.10. SUMMARY

The critical analysis of the trajectory of historical selection practices for the admission of beginner students in architecture at the University of Pretoria can, for the period under review, be divided into two main episodes, with the first stretching from 1971 until 1994 and the second from 1995 until 2006.

A number of informants served to contextualise these episodes of selection, including regulatory frameworks, requirements for admission, the academic context and intentions of the Department and how it influenced the core curricula at specific times. The assessment tools and the major outcomes of the respective episodes of selection were reviewed so as to investigate if and how compatible selection was with the academic offering.

For the episode covering 1971 to 1994 it was found that through the research informing selection an analogous and compatible relationship was established between selective admissions and the teaching and learning in the programme for which students were selected. During the episode covering 1995 to 2006 this trend was reversed as admission policies were centralised and directed by managerial decisions in an effort to adapt to changing contexts and expectations, with the result that selection became general and nonspecific.

5.11. CONCLUSION

The third subproblem was to critically examine the trajectory of historical selection practices for the admission of beginner students in architecture at the University of Pretoria from 1971 until 2006.

The first supposition to subproblem three is that the trajectory of historical selection practices for the admission of beginner students in architecture at the University of Pretoria between 1971 and 1994 were based on research and were compatible with and analogous to teaching and learning in the programme for which students were selected.

The second supposition to subproblem three is that the trajectory of historical selection practices for the admission of beginner students in architecture at the University of Pretoria between 1995 and 2006 was informed by managerial policies and were general and not specifically aligned with teaching and learning in the programme for which students were selected.

As indicated in the summary above the analysis of the two episodes presented in this chapter affirm and support both of these suppositions.