

Architectural education is not merely a matter of acquiring certain professional habits, although the cultivation of skills and judgements necessary to the profession must form a part of the educative process. The central discipline of architectural education is that of design in its widest sense – design as creative decision-making and positive action generation. It is concerned with the development of conceptual design skills and intellectual design skills and rational and logical design skills. The identification of innate design skills and flair and the devising of techniques for their development is a constant source of discussion. (Males 1976:27-28)

## CHAPTER 3 **SELECTION INTO SYSTEMS OF ARCHITECTURAL EDUCATION**

### **3.1. SUBPROBLEM 1**

In order to understand the context of the main problem we need to critically investigate the admission procedures and assessment tools for selection into systems of architectural education worldwide.

### **3.2. SUPPOSITION TO SUBPROBLEM 1**

The supposition to subproblem one is that schools of architecture worldwide use a variety of differing admission procedures and apply multiple assessment tools during selection.

### **3.3. OUTLINE OF CHAPTER 3**

In this chapter the practice of selection into systems of architectural education is investigated and the admission procedures and assessment tools employed by schools of architecture are examined by way of a literature study. The discourse starts with an investigation into the context of selection and the motives for selective admission to schools of architecture. It is followed by a historical enquiry into the admission procedures of three prominent precedents in architectural education, namely the École des Beaux-Arts, the Bauhaus and the Bartlett School of Architecture. The findings of two international surveys are subsequently examined in order to establish a frame of reference for selection practice into systems of architectural education and for the identification of the assessment tools used as part of admission procedures.

### 3.4. OVERVIEW OF THE RELATED LITERATURE

Discovering the literature that addresses the core motivation for student selection is more difficult than one would imagine. The thesis by Herholdt (1972), that developed a selection regime for the Department of Architecture at UP, addresses some fundamentals in this regard. It is supplemented by a report by Kemp (1991) that assessed selection at the same institution twenty years thereafter.

For the precedent studies some source material proved more valuable than others. For the *École des Beaux-Arts* the accounts of Cret (1941), published in the *Journal of the American Society of Architectural Historians*, and that of Carlhian (1979), published in the *Journal of Architectural Education*, stood out. Both attended the *École* as students – Cret first in Lyon and then in Paris. Their first-hand experiences make what is a very complex history more readily accessible. The study by Weatherhead (1941) gives a good comparative description of both the *École* and the Bauhaus, but the official documents collected for the latter in Wingler's book (1969) give an almost complete, albeit sanctioned, overview of admission procedures at the Bauhaus. The critical opinion of Eva Forgács (1995) in *The Bauhaus idea and Bauhaus politics* and especially that of Anja Baumhoff (2001) in *The gendered world of the Bauhaus* unravel finer detail that Cimino (2003) builds on in his dissertation on student life at the Bauhaus.

A detailed description and assessment is given of the admission procedures and assessment tools employed by the Architectural Education Research Unit at the Bartlett School of Architecture during the 1960s in Abercrombie et al (1969). This is a source rich in detail and data and in many respects these overwhelm the reader, but it is appreciated in the absence of other similarly detailed works of reference. A follow-up article was later published (Abercrombie et al 1972) that offered some clarity of understanding of the later years of their research. Additional context is provided by writings of Latourell (1969), who lectured at the Bartlett from the mid-1960s.

The findings of a far-reaching survey by Goldschmidt et al (2001) serves as a primary reference for establishing which assessment tools are used during selection for admission by schools of architecture worldwide. The researchers' findings delineate categories for these tools and describe their features and, in some instances, the motives as to why schools use them (or, through choice, do not). Their survey served as the basis for a follow-up by Salama (2005, 2015) who superimposed his findings on 49 more schools over and above the original results. Where his cumulative data serves as a quantitative informant, the original research by the Goldschmidt team serves as initial and qualitative source. Other sources from various disciplines and locales are referenced in the discussion of the findings of the survey in an attempt to clarify and contextualise aspects of interest or recent developments that occurred since the publication of these. The National Aptitude Test in Architecture administered by the Council of Architecture in India (India Council of Architecture 2017) serves as such an example.

### 3.5. THE CONTEXT OF SELECTION

Two broad categories of systems of selection for admission to studies in higher education can be identified, namely 'general selection' in which the specifics of the programme are not taken into consideration and then 'specific selection' where the specifics of the programme are considered (Herholdt 1972:10). The former acts as a generic benchmark aimed at identifying students with the capacity to undertake tertiary study and is therefore, in theory, similar to the categories in which a learner can pass the final school examinations in South Africa. The NSC, in part, distinguishes between learners who may undertake tertiary studies with a higher certificate, diploma or bachelor's degree as outcome (Department of Basic Education 2017). Conversely, Herholdt (1972:10) suggests that programme specific selection is more particular as it should account for the abilities, aptitude and skills required for a specific academic trajectory so as to be a successful student. According to Herholdt, such a selection process involves the coordination of individual qualities with the requirements for a specific activity (1972:11). One can thus argue that programme specific selection requires a high degree of compatibility with the academic programme for which the student is being selected. If a direct relationship is not achievable, the expectation should at least be one of an analogous nature.

The primary motivation for the selection of students for a specific study programme is most likely that the number of applications exceeds the number of places available in that programme, or in other words, that there is an oversupply of applicants or an undersupply of available places. In schools of architecture the number of available places is usually determined, and limited, by resources available to facilitate teaching and learning in the studio. This critically differentiates schools of architecture from most other programmes of tertiary study. Kemp (1991:1) motivates for the selective admission to schools of architecture by referring to the scarcity of resources, including that of physical space for studios and the availability of academic staff to sustain the studio teaching. He argues that high attrition rates are pronounced in the first year of study, which leads to financial loss for both the student and the state, which subsidises tertiary studies in South Africa. Selection has a role in addressing these factors and may therefore contribute to the student's aspirations for achieving academic excellence. Goldschmidt et al (2001:290) concur that schools of architecture "[...] have always been selective as to who they admit, due to constrained resources as well as a need to set an appropriate threshold for quality of performance". Males (1976:31) argues that inadequate means for the conducting of selection contributes to the considerably high failure rate in architectural education, thereby implying that an appropriate selection procedure may improve the throughput and success rate of students. He also lists other factors, including the long duration of the course, the complexity of its subjects and students' lack of experience of the discipline prior to admission.

The argument that new students lack experience in architecture is very pertinent to this study. Banham (1990:22-25) famously equated architectural education to a mysterious 'black box' in an analogy that hinges on the argument that what happens inside the black box is little understood by outsiders. Porter (2006:14-15) explains: "The function of the black box is to transform an input and to output the result. Its

importance as a concept lies in our not needing to know how the transformation is made in order to use the box”, much like the workings of a camera’s black chamber from which the term is borrowed.

School leavers generally find the transition from secondary to tertiary education challenging (Van der Merwe & De Beer 2006:548; Nel, Troskie-de Bruin & Bitzer 2009; Ramrathan 2013:211), but those entering the ‘black box’ of architectural education are also confronted by “[...] a move to a system where the answers are uncertain, and the route to that endpoint ambiguous and not following any set methodology” (Roberts 2006:169). The fact that most students are newcomers to the discipline is more often than not frustrating and difficult, as many have pointed out – see for example Peterson (1971:56), Nelson (1974:83), Domer (1981:24), Ochsner (2000:195), Kucker and Perkins (2005:171), Tozan Kiessel and Abbasoglu (2008:1). Abercrombie et al (1969:2) state that many prospective students know “[...] very little about architectural education, reflecting the relative ignorance of the public (including school teachers) about architects, compared with, say, doctors with whom most people at some time or other come into personal contact”. One must concur with Nelson (1974:83) who, more than forty years ago, argued that few vocational councillors operating at schools understand the many facets involved in the practice of architecture and that they are normally not capable of offering a great deal of assistance to the learner.

This is even more relevant in the South African context when one considers the legacy of Apartheid and its continuing impact on education and other spheres. Janse van Rensburg (2015:7) argues that architects are ‘hidden professionals’ and Oluwa (2017:52) emphasises that the black student of architecture “[...] is unlikely to have understood what architecture is about before commencing studies”. Arguably this specific aspect does not only apply to black students, but, like the argument of Saidi and Nazier (2011:185), serves to remind us that learners from poor communities are often severely limited in their preparedness to undertake studies in design disciplines such as architecture. Luckan (SACAP 2016a:6) contextualises the effect on transformation: “Equity statistics within our Architectural Learning Sites remain low due to youth in outlying disadvantaged communities remaining ignorant of what a career in architecture could offer them”.

### **3.6. HISTORICAL OVERVIEW**

In this section three seminal precedents for the practice of selection and procedures for admission are explored in an effort to establish an initial understanding of selection into systems of architectural education. The choice of these case studies was motivated by the differences between them, but also by the fact that they collectively give a good overview and outline of the development of admission procedures for specific schools of architecture.

### 3.6.1. The École des Beaux-Arts

The curriculum for architecture at the École des Beaux-Arts is considered to have reached maturity in the period after the French Revolution and specifically from 1819 (Collins 1979:2). The term 'Beaux-Arts system' refers to the period from that time until the end of architectural education at the École in 1968 when it was most influential – see Chapter 2.4.2 and 2.4.3.

Competition was, according to Carlhian (1979:7), one of the basic tenets of the spirit of the École. This manifests clearly in the selection practices of the Beaux-Arts system. Applicants competed for a limited number of available places through bi-annual admission examinations (Cret 1941:10-11). Applicants usually joined a studio for around six months prior to competing for admission. The following account of John Galen Howard (1864-1931), an American student at the École from 1891-1893, in Draper (1977:222), contextualises the process:

When Howard sat for the exams in March and April, 1891, there were 230 aspirants, including fifteen Americans. Only thirty were admitted, including three Americans. Howard was placed fourth overall. His success was due partly to his American training [at MIT], but also to several months spent making measured drawings in the atelier of Paul-René-Léon Ginain, the 1852 Grand Prix winner and architect of the Ecole de Médecine. Nine or ten other American aspirants shared his corner of the studio, all of them mastering the French language and architectural conventions. There were also special 'prep schools' [...] where students honed up on history and mathematics.

The six-part admission examination was cumulatively scored. During the process the rate of attrition among competitors was high and at its conclusion places were offered to those applicants who were awarded the highest rankings (Carlhian 1979:7; Weatherhead 1941:17). The first part called for an architectural design that had to be executed *en loge*<sup>1</sup> in a limited time. It is clear from the requirements of this assignment why applicants attended a studio before competing for admission. Carlhian (1979:8) gives an example:

The first problem consisted of a 12 hour architectural design, simple in nature, requiring the use of classical motifs, expressed in plan, section and elevation and rendered with appropriate shadows. Such an exercise, therefore, required from its author not only an understanding of classical proportions, a familiarity with the orders, a knowledge of simple geometry in order to establish the proper correspondence between different projected views of the building, and to represent accurately the meeting of complex forms such as vaults as well as the correct way of casting shadows created by an imaginary sun, traditionally shining down at a 45° angle from the upper left corner of the drawing. Pencil was the favored medium, enhanced with washes of diluted Chinese ink. Problems consisted of small freestanding pavilions or simple facade motifs usually built out of stone and featuring the use of a classical order, whether Doric, Ionic or Corinthian.

1 According to Collins English Dictionary (2007:957) the term 'loge' refers to a small enclosure or box, thus referring to a cubicle where the applicant was expected to execute the work without additional resources.

The second part called for the preparation of a representational drawing of a decorative element from a plaster cast “to be represented as accurately as possible in 8 hours” (Carlhian 1979:8), followed by the modelling, in soft clay, of a low-relief ornament from antique or Renaissance examples. The latter assignment was added in 1883. Applicants had to pass the first three parts (referred to as *admissibles*) to be allowed to continue with the last three parts that consisted of examinations in ancient and modern European history, mathematics (arithmetic, algebra, and geometry) and descriptive geometry (Weatherhead 1941:17). Carlhian (1979:8) describes the two-hour descriptive geometry task as the most challenging and cites an example of a problem statement that asked for “[...] an accurate graphic representation of an intersection of vaults with the development of a selected component through appropriate projection”.

The account of an American applicant’s three attempts at gaining admission to the École reveals further aspects of this process. The École allowed women to attend evening classes for the first time in 1896 and first compete for admission in 1897, the year that Ms Julia Morgan (1872-1957) first did so. She was unsuccessful on both occasions in that year. She struggled in finding an atelier that would accept her as a woman but was finally permitted to join the atelier of François-Benjamin Chaussemiche so as to prepare for a third attempt at admission in 1898. This time she was placed thirteenth out of 392 applicants, thus becoming the first woman to be admitted to study architecture at the École. “Once accepted, the institution’s centuries-old tradition of submitting work anonymously rendered Morgan’s gender relatively moot” (McNeill 2007:237) and she became the first woman to obtain her certificate from the institution in 1902, completing her studies just before her thirtieth birthday (McNeill 2007:234-238).

It could be argued, as Weatherhead (1941:18) does, that the admission examinations of the Beaux-Arts system ensured that the cohort of students who were admitted were serious and well prepared. In his view it also allowed for the high standards of the course to be maintained. When considering that the approach to architectural education in the Beaux-Arts system was an academic one and that, after admission, the competition format remained central to its method – see Chapter 2.4.2 – the selection regime described above could be considered compatible with the educational offering of Beaux-Arts system. It assessed the critical skills required of students through varied formats (sketch, design, sculpt, write, draw) over the course of the six-part admission examinations and, moreover, it prepared applicants for their studies by foretelling what was to follow should they be admitted. Once admitted, students were only allowed to study at the École until they reached the age of thirty (Cret 1941:10-11), but for many being accepted to attend the École – “even if it was for no longer than a month” (Carlhian 1979:8) – constituted considerable proof of one’s abilities.

A positive attribute of the Beaux-Arts system was certainly that a good fit was achieved between the selection competitions and the academic programme that followed. High expectations required months of preparation in an atelier to acquire the necessary skills for the applicant to cope during the selection competition. While this aspect can be criticised for its exclusivity, it also contributed to maintaining high standards at the institution before the whole model became out-dated.

### 3.6.2. Bauhaus

Modern architecture's rhetorical rejection of traditional architecture was ultimately a rejection of traditional architectural education. Out of a melange of influences, the first codification of a new or alternative pedagogy was formulated and first used at the Bauhaus. (Crowe & Hurtt 1986:10)

The admission policies of the Bauhaus, and how it evolved between 1919 and 1932, have been made accessible from archival sources that have been translated and published in Wingler (1969). The first was published in the Program of the Staatliche Bauhaus in 1919 and simply stated that any person of good repute, irrespective of age or sex, whose previous education was deemed adequate by the Council of Masters, will be admitted provided space permitted (Wingler 1969:33). Constructed as an open invitation, it was clear that certain prerequisites were implied. Wick (2000:36) refers to Kröll's explanation that the Council of Masters was an "[...] advisory and decision-making body in all didactic and organizational questions relating to the institute" and adds that only the masters of form had voting right on the Council, while masters of craft only served in an advisory capacity.

By the time the statutes of 1921 were published, the general statement of 1919 referred to above was repeated with closing dates for applications for the next semester added (Wingler 1969:44). In addition, for the first time, a list of requirements for consideration was published. The translation thereof in Wingler (1969:44) reads as follows:

Applications must be made in writing. The following must be furnished as a basis for admission:

1. Original work (drawings, paintings, sculpture, craft work, designs, photography, etc.);
2. Curriculum vitae, including a statement of previous education, personal situation, and means of support (in the case of minors this information to be furnished by parents or guardian);
3. Police certificate of good conduct;
4. Doctor's certificate of health;
5. Where applicable, certificates of previously completed training in the crafts (e.g., journeyman's certificate).

Every applicant will at first be admitted only for a trial period of six months. This probationary period can be suspended only in exceptional cases of special talent, artistic maturity, and personal knowledge. During this time the preliminary course is obligatory. This course consists of elementary instruction in form, in conjunction with studies of materials (in the experimental craft workshop).

Final admission is dependant on the applicant's completion of the above classes and on the quality of his independent work finished during this six-month trial period. Only after being finally approved by the Council of Masters may the newly accepted student join the workshop of his choice and freely select his artistic master from among the membership of the Council of Masters.

The semester-long period of probation was spent in Itten's *Vorkurs*, a foundation course. The rationale for this arrangement is explained by Forgács (1995:53):

The Basic, or Preliminary, Course itself came into existence when the Bauhaus masters were casting about for a method of determining who was to be admitted to the school. Students arrived at Weimar from the most diverse types of schools in Germany and other countries, prepared by teaching

methods of all kinds. Seeing that this was the case, Itten proposed to Gropius that a Preliminary Course be instituted as a period of probation during which it would be possible to form an idea of the student's abilities and character.

Itten was also of the opinion that the preliminary course should assist students with their final choice of specialisation by providing an opportunity for exposure to different materials and associated processes (Wick 2000:101). Obtaining final admission was not easy and Forgács (1995:32) claims that many students were advised not to continue after completing their probation period and the foundation course. While the statutes claimed that, on successful completion of the *Vorkurs* the newly accepted student could choose which workshop to join, the Council of Masters had considerable influence in, and control<sup>2</sup> over, this aspect. Weatherhead (1941:181) makes it clear that: "Each student was permitted to pursue a course only in accordance with his special aptitudes and demonstrated abilities."

The published descriptions and requirements for admission were tweaked over the following years. An advertisement for the Bauhaus published in Dessau newspapers in 1925 mentions that applicants should be at least 17 years of age (Wingler 1969:106). With the introduction of a minimum age the reference to gender fell away. Baumhoff (2001:19) argues that, despite the fact that the initial statutes explicitly ruled out discrimination based on gender, it was, in effect, a prevalent practice. Cimino (2003:99-101) explains that initially at least half, or more, of the students enrolled at Weimar were women, but that the Council of Masters decided to limit the female intake to a third of the student numbers. Consequently, during the years in Dessau and Berlin, around thirty per cent of the students there were women.

In the 1925 curriculum of the Bauhaus (then in Dessau) a photograph of the applicant was added to the list of items to be submitted (Wingler 1969:108). According to the workplan for the preliminary course, which Wingler (1969:109) dates from 1925-1926, the introductory course was extended to two semesters, one in which instruction covered exercises in basic form and one semester of basic practical instruction where students became "[...] acquainted with various types of materials and tools".

Under the directorship of Mies van der Rohe and following the move to Berlin, the syllabus and curriculum published in October 1932 indicates that the minimum age of entrants was now eighteen years and the declaration of an applicant's means of support was listed separately, instead of as part of the curriculum vitae (Wingler 1969:182). This move must be understood in the context of dwindling resources as the income of the Bauhaus, then a private institution without any official endorsement, became reliant on student tuition and fundraising (Cimino 2003:71).

2 The practice of summarily placing women in the weaving workshop is an example of the Council's absolute control over admissions – see Cimino (2003:110).



Despite some controversy and rumours<sup>3</sup> about selection at the Bauhaus, the admission policy in general seems to have been successful in as much as it prepared applicants for the course if they were finally accepted. The lengthy process became a yardstick for the measure of applicants for access to advanced programmes while it acted as a mechanism of induction and instruction. It provided applicants with the opportunity to supplement their initial portfolios and compete for final admission having had first-hand experience of different materials and design disciplines (Wingler 1969:109). In addition they were by then familiar with the teaching practices of the school, which is valuable in any design programme. In the opinion of Feininger (1960:270): “[...] it is certain that the Bauhaus graduated fewer incompetents than any other institution I can think of. This is largely due to the high motivation of the great majority of applicants for admission.”

### 3.6.3. The Bartlett School of Architecture

An Architectural Education Research Unit (**AERU**) was established at the Bartlett School of Architecture, UCL, through a grant made in 1963. It is of notable interest that the unit leader, Dr Jane Abercrombie (c.1909-1984), was not an architect.<sup>4</sup> AERU took responsibility for the selection of students into the school. Abercrombie et al (1969:1-2) explain that, at the outset, three factors impacted on the unit’s work: firstly, their work started shortly after the conference on architectural education at Oxford of 1958 accepted the principle of full-time study for professional qualifications and raised the minimum requirements for admission to schools of architecture in the United Kingdom. Secondly, the Bartlett had recently restructured their academic offering, dividing the five-year qualification into a three-year bachelors degree, followed by a two-year master’s degree. Thirdly, the number of students applying for admission to universities in the United Kingdom had increased significantly and a central council became responsible for the channelling of documentation from applicants to the institutions. This meant that certain information pertaining to applicants was only available in a standardised format. Applications to the Bartlett’s architecture programme also noticeably increased<sup>5</sup> between 1963 and 1968, motivating the need for selective admission – see Abercrombie et al (1969:8-9).

Between 1963 and 1968 AERU administered a number of assessment tools, called ‘predictors’ (Abercrombie et al 1972:76), with varied weightings and subsequently monitored the academic performance of students so as to be able to investigate the interrelationships and predictive value of the assessment tools. The tools they employed were:

- 3 Cimino (2003:16) writes about Herbert Bayer (1900-1985), who was a student and later director of printing and advertising at the Bauhaus, and one such a rumour: “Also capturing Bayer’s imagination were the fascinating stories being told about the Bauhaus. He writes about a rumor concerning an unusual admissions practice: **‘the applicant is locked up in a dark room. thunder and lightning are let loose to get him into a state of agitation. his being admitted depends upon how well he expresses this experience by drawing or painting.** [sic]” Images like this, while frightening to some, greatly appealed to many potential Bauhäuslers (as members of the Bauhaus came to be called) who were looking for something out of the ordinary.”
- 4 According to her obituary (Collier 1985) she was a biologist by training and was earlier responsible for a ten-year research project at the Department of Anatomy at UCL that dealt with the selection and training of medical students.
- 5 Abercrombie et al (1969:8-9) indicate that 259 applications were received in 1963, of which 105 applicants were interviewed and 30, or 11.6% of applicants, were offered places. The number of applications peaked in 1967 when 659 applications were received, of which 96 were interviewed and 45, or 6.8% of applicants, were accepted.

- Academic record

According to Abercrombie et al (1969:17) the academic record considered was initially the one submitted with the application. As applicants were in the process of completing their schooling, the final results were often not yet available. Beyond the grades obtained, consideration was given to the applicant's age when examinations had been taken, the number and range of subjects taken at a sitting, the kind of school (independent, direct grant and grammar schools, etc.) and family background. The academic record was assessed on a five-scale score and later the final school results, for A-level examinations, were included in the analysis of predictors (Abercrombie et al 1969:126).

- Referee's report

The referee's report, usually from a head teacher, was assessed according to its "support for the candidate and confidence in his future as a student, bearing in mind how well the referee seemed to know the candidate, and to understand the requirements of architectural training" (Abercrombie et al 1969:17). The latter sometimes presented difficulties as "school teachers are less likely to be well acquainted with what is demanded of an architect than, say, of a physicist" (Abercrombie et al 1969:17). Despite some shortcomings the referee's reports provided a valuable context regarding the applicants that would not otherwise have been accessible. As such this has frequently proved useful in providing a context for the assessment of their academic record.

- Candidate's statement

Applicants were asked to provide statements about their main interests, activities, why they wanted to pursue architecture as a career and to motivate their application to the specific school in 500 words or less (Abercrombie et al 1969:127). Assessment took cognizance of evidence of wide interests and a flexible outlook, but also of the social class of the applicant, the status of his or her family and the kind of school attended (Abercrombie et al 1969:19).

- Interviews

In most years the aforesaid assessment tools were used in various combinations so as to be able to make a decision as to which applicants would be invited to attend interviews, the final step in the selection procedure. Perhaps the use of an interview as format is not surprising given that the leader of the unit, Dr Jane Abercrombie, had developed techniques for group discussions during her prior experience in the selection of medical students (Collier 1985:223).

The interviews, for the sake of consistency, had to be arranged over as short a period as possible, but, nonetheless, still stretched over a considerable length of time (Abercrombie et al 1969:19-25). Different formats were tried out, from a conventional board interview with four interviewers (including staff teaching in the first year of study), to a series of consecutive interviews with one interviewer each, each assessing a different aspect. Initially the aim was to assess "suitability as a member of the Bartlett School" and "potentiality as an architect" (Abercrombie et al 1969:22) but

later aspects such as sensitivity to the environment and awareness, interests, organisational abilities and personal likeability were assessed. Importantly the interviews were informed by portfolios of drawings or other creative work that applicants were asked to bring along, together with a photograph of the applicant that was used as visual reference. The academic records, referee's reports and candidate's statement were made available to interviewers before and during the interviews (1969:37).

Mention is made of the time spent on selection, especially for the interviews, which varied from 230 person-hours per annum to 45 hours when single individual interviews were held (Abercrombie et al 1969:35). Despite the scores for the interview not having a conclusive predictive value, comments were made on the benefits of the format: "[...] the interview has great advantages in acquainting the candidates with the school, its teachers and students, objectives and methods" (Abercrombie et al 1972:86).

The weighting of these assessment tools varied over time; initially the academic record was given most weight in determining who was interviewed. It was perceived to be a good predictor as "the passing of certain examinations is an essential prerequisite for professional life" (Abercrombie et al 1969:25). Over time the interview became less of a deciding device and the other three tools more prominent in the selection decisions. It was established that the academic record, weighted for context and not just as an "arithmetical" index of grades (Abercrombie et al 1969:127), during selection was the best predictor<sup>6</sup> of future performance at the Bartlett. The grading of the candidate's statement, described as a "subjective assessment of a subjective report" (Abercrombie et al 1969:127), correlated significantly with performance at the Bartlett and the referee's report did so only positively and was not statistically significant (1969:127).

Apart from the assessment tools discussed, AERU also performed a battery of psychological tests on applicants with the understanding<sup>7</sup> that these results would not be used for selection purposes. The AH5 tested high grade intelligence and if the applicant's bias was toward verbal or non-verbal reasoning, while the Dynamic Personality Inventory aimed at identifying traits, tendencies and defence mechanisms in response to a wide range of stimuli (Abercrombie et al 1969:26). While no indicators for a marked and consistent inter-relationship between the former test and performance at the Bartlett was found, it was concluded from the second test that positive inter-relationships existed between certain personality traits (initiative, emotional independence and lack of passivity) and performance in studies (Abercrombie et al 1969:132). Abercrombie et al (1972:82) also indicate that initiative, self-reliance and decisiveness played a major role in the final results of graduates, but it should be noted that these aspects were only studied

6 This aspect was heavily criticised by Lowe (1970:62) who accused the unit of bias and their work as unrepresentative as the programme at the Bartlett was in many ways unique and not comparable with other schools of architecture.

7 Abercrombie et al (1969:25): "A series of tests taking about three or four hours has been given to candidates who were interviewed for admission in 1964 and after. It was explained to the candidates that these tests were part of our research programme and would in no way be used for selection."

for 260 male applicants who were educated in the United Kingdom and who were interviewed between 1964 and 1966 when they were between 17 and 20 years of age (Abercrombie et al 1972:76). This therefore excluded female applicants and those from abroad.

The Bartlett's curriculum structure and assessment format changed in 1966 when a unit system for learning was introduced under Prof. Llewelyn-Davies (1912-1981) (Abercrombie et al 1972:79). Latourell (1969:42), with reference to Llewelyn-Davies' statement that "[...] schools of architecture should help to initiate change in society", described the Bartlett's approach in the late 1960s as follows:

Education for change has been interpreted by the school as an education which encourages each individual to develop his unique combination of ability and interests. Both the need of students and the profession's development have suggested a diverse and individually guided pattern of education, for the wide variety of students' interests probably matches the profession's demands for a very wide range of individual contributions.

During the 1960s selection at the Bartlett focused on a scientific analysis informed by quantitative and statistical processes, but it is notable that aspects of the applicant's circumstances, socio-economic profile and personal context were considered during selection and influenced, for instance, the assessment of their academic records. As architecture is a responsive discipline where context is a major informant in the making of the spatial artefact, this aspect is viewed as constructive and admirably progressive for the 1960s and therefore compares favourably with the teaching of the school at that time. The normative position adopted by the researchers for personal interviews, namely that it provided applicants with an opportunity to experience the school first-hand, should be viewed as significant and the investigation into different interview formats is revealing and equally of interest, albeit that, at the time, their interviews did not produce significant results.

From these case studies it is evident that all three of the precedents under review have used multiple assessment tools during their process of selection for admission so as to be able to decide which applicants they would admit. While it cannot be assumed that these case studies are representative or typical of a specific context, they do provide a framework for understanding the tradition of selection in Western schools of architecture that ultimately informed some of the thinking in South African schools. This enquiry will be expanded in the next section where the role of specific assessment tools in the admission procedure is investigated.

### **3.7. INTERNATIONAL SURVEYS**

Goldschmidt et al (2001) published the results of a survey they conducted of the means employed to select students for architecture programmes. Their study reported on 69 schools of architecture that offer professional degrees in 21 countries and concluded that all the institutions that responded conducted some form of screening for the admission of applicants. Their analysis extracted eight main assessment

tools<sup>8</sup> on which selection is based, namely high school records, psychometric or general scholastic aptitude tests, special architecture aptitude tests, interviews, portfolios, essays, written statements and letters of recommendation. A very small percentage of institutions used a single assessment tool for selection. On average the respondent institutions used a combination of 2.86 of the eight tools, with high school records being the most widely used, namely by 91.3% of the surveyed institutions. Psychometric or general scholastic aptitude tests were used by 55% and portfolios by 44.9% of the institutions, placing them respectively second and third (Goldschmidt et al 2001:283-284).

The 2001 survey was extended to 118 institutions in Salama (2005:5) and republished in Salama (2015:84-87). Salama's survey incorporated the data from Goldschmidt et al (2001) and retained the eight categories of assessment tools, but added data from a significant number of institutions from Africa and Asia. The quantitative results of the cumulative survey were similar to those of the 2001 survey, with a considerable number of schools again employing a combination of admission criteria, albeit that on average it dropped slightly from 2.86 to 2.44 per respondent. Moreover, the three most popular assessment tools were, in order, the same as in the Goldschmidt survey, although with some variation in the respective percentages. The use of high school records increased marginally to 93.2% (from 91.3%), aptitude tests decreased slightly to 49.2% (from 55%) and portfolios dropped to 29.7% (from 44.9%) (Salama 2015:86). Table 3.1 represents the cumulative data. In the subsequent discussion the assessment tools are ordered by the ranking of their popularity in Table 3.1.

### **3.7.1. High school records**

When referring to high school records the intention is clearly to benchmark a preceding and completed academic cycle. For applicants wishing to pursue undergraduate studies this for the most, but not exclusively, refers to results from a phase of secondary education and thus their academic standing can be considered as a valid threshold to higher education.

In the countries surveyed by Goldschmidt et al (2001), educational standards and practices in secondary education are admittedly diverse. Similarly the minimum academic requirements that higher institutions set for admission differ, as do the procedures for calculating and ultimately interpreting school results. High school records can be expressed as a numerical average, such the Grade Point Average (**GPA**) or the Admission Point Score (**APS**) currently used in South Africa (Blignaut & Venter 2011:214). In addition minimum achievement ratings may be required for specific subjects or subject groups. Abercrombie et al (1969:108) point out that there may be a difference between academic results at the time of application and those at the time of registration. In South Africa provisional selection is predominantly based on the applicant's final results for Grade 11 as those studying towards Grade 12 and the NSC only receive their final results a few weeks before the academic year commences. In these cases selection is conditional to the minimum academic requirements being met in the final NSC examination results.

<sup>8</sup> Goldschmidt et al (2001) refer to admission or selection criteria; for the purposes of this study the term assessment tools is preferred – refer to the Glossary in Chapter 1.

**TABLE 3.1:** Assessment tools used by schools of architecture, based on Salama (2015:86)

REGION	COUNTRY	Number of institutions	High school records	Aptitude tests	Portfolios	Interviews	Special architecture tests	Letters of recommendation	Essays	Personal statements
Africa	Egypt**	22	22	5					1	1
	Nigeria**	1	1							
	Sudan**	1	1							
	South Africa**	2	2	2	2	2				
Asia	Bahrain**	1	1							
	India*	3	2	1		1	3			
	Israel*	4	4	3	1	2	4			
	Kingdom of Saudi Arabia**	5	5				1			
	Kuwait**	1	1							
	Oman**	1	1							
	Thailand*	2	2	2		2	2			
	United Arab Emirates**	2	2				1			
Europe	Belgium*	1		1						
	Denmark*	2	2		2		2			
	Finland*	2					2			
	Netherlands*	1	1							
	Poland*	1					1			
	Slovakia*	1	1	1						
	Spain*	1	1				1			
	Sweden*	1	1	1			1			
	Switzerland*	2	2		1					
	United Kingdom*	5	5	3	4	3		2		3
North America	Canada*	3	3		2	1		1	1	
	United States of America**	44	41	37	22	8	2	9	9	4
Oceania	Australia*	5	5	1						
	New Zealand*	1	1		1					
South America	Bolivia*	1	1			1				
	Costa Rica*	1	1			1				
	Guatemala*	1	1	1		1				
<b>TOTAL PER ASSESSMENT TOOL</b>		<b>118</b>	<b>110</b>	<b>58</b>	<b>35</b>	<b>22</b>	<b>20</b>	<b>12</b>	<b>11</b>	<b>8</b>
<b>PERCENTAGE OF THE TOTAL</b>		100%	93.2%	49.2%#	29.7%	18.6%	16.9%	10.2%	9.3%	6.8%

KEY: \* indicates data originally published in the survey by Goldschmidt et al (2001)

\*\* indicates data published in Salama (2015)

# indicates a calculation error in the source that has been corrected

The cumulative data from Salama (2015:86) indicate that only four of 118 respondent institutions – one in Belgium, two in Finland and one in Poland – did not consider academic records at all. Institutions in Nigeria, Sudan, Bahrain, Saudi Arabia, Oman, the Netherlands, Australia<sup>9</sup> and New Zealand use it as the sole determinant for admission, while others combine it with other assessment tools. Institutions from Denmark indicated that academic merit is not the only means to obtain admission; while they admit a 60% of students based on school results, the remainder can gain entry on the basis of work experience or qualifications. Students who are admitted through the alternative route “[...] cope well in their studies although they got rather low marks at their secondary examinations” (Goldschmidt et al 2001:287).

A small number of institutions indicated that they have implemented preparatory, remedial or bridging programmes to assist inadequately prepared potential students. The only institution from South Africa included in the survey by Goldschmidt et al (2001:285-286) is reported to have had little success in attracting black students to their programme through this support mechanism.

Goldschmidt et al (2001:284-285) found numerous reasons for the primacy of academic records:

- In some cases it is used for lack of a better means of selection;
- It is believed to have good predictive power in any field of study;
- It is accepted as an effective indicator of a student’s ability and motivation to study;
- It is perceived to reflect scholastic ability with reasonable objectivity;
- It is an accessible assessment tool;
- It is understood and accepted by society at large;
- Some institutions have found meaningful correlations between performance at secondary school and university programmes in architecture. It must be noted that many others have found little correlation between the two at all. In some instances these opinions were based on statistical enquiries.

Despite the widespread application of this assessment tool, the responses and motivations recorded by Goldschmidt et al (2001:284-286) indicate that there is little consensus on the merit of using high school records for selection.

For the remainder of this study the term ‘academic record’, as used by Abercrombie et al (1969), is preferred to ‘high school records’ as an academic record can also refer to other results, such as transcripts for other tertiary studies for advanced or transfer students. Goldschmidt et al (2001:285) indicate that it is not uncommon that additional assessment tools for applicants from these categories are taken into consideration.

9 Coates and Friedman (2010:118) explain the perceptions in the Australian context as follows: “It is increasingly unclear that reliance on achievement scores alone provides a transparent and efficient means of ensuring that all talented people who would like to attend university are able to gain admission. Specialist courses have added other criteria, such as portfolios, aptitude testing and interviews, but these are relatively rare exceptions to the time-honoured tradition of achievement testing.”

### 3.7.2. Generic aptitude tests

As the second most used assessment tool, psychometric or general scholastic aptitude tests cover a broad spectrum of assessments that “examine various cognitive and scholastic abilities to estimate future success in academic studies” (Goldschmidt et al 2001:282). The grouping together of a variety of distinctive types of assessment under one heading in the survey results seems to be motivated by the fact that these assessments are administered, and evaluated, by external parties that do not include the schools of architecture. These tests are generic and are thus not limited, or specific, to programmes in architecture. While psychometric testing can reveal specific aptitude and personality traits that may impact on selection decisions, the surveys do not differentiate between psychometric testing and general scholastic aptitude tests.

The cumulative data from Salama (2015:86) indicate that one institution in Belgium relies solely on this type of testing to determine admission, while other institutions that use this tool do so in combination with other considerations. Of the 44 respondent institutions in the United States the vast majority (84%) use aptitude tests for admission. This is understandable as both the SAT (formerly Scholastic Assessment Test) and the ACT (formerly American College Testing) assessments are established standard tests used to determine college admission. The equivalent in Australia is the Special Tertiary Admissions Test (STAT) discussed in Coates and Friedman (2010:118), who state: “As with all aptitude tests, it is important to stress that STAT is not designed to predict levels of achievement at university but to identify individuals who have the capacity to undertake university study.” In South Africa the National Benchmark Tests (**NBT**) aim to assess the entry level academic skills of students to assist with their placement in programmes of higher education (NBTP 2016:10-12).

Goldschmidt et al (2001:286) record few but divergent views on the application and appreciation of tests administered by external parties, including strong arguments against their fairness. Most institutions in Israel rely on the results of a psychometric test for admission purposes. This practice is criticised as being economically and culturally unfair as “many prospective students attend expensive private preparatory classes that succeed in training them towards attaining high scores” (Goldschmidt et al 2001:286).

There is a danger that generic tests conducted by third parties may lack the specificity in accounting for the aptitude and skills required for specific academic programmes. It is also necessary to keep in mind that those who give vocational guidance to prospective students based on third party test results should be required to have adequate knowledge of academic programmes and professions to be able to do so (Nelson 1974:83).

### 3.7.3. Portfolios

Portfolios have, since the late twentieth century, become prominent assessment tools in a number of disciplines, including education and teacher training (Johnston 2004:396), engineering (Panitz 1996) and



the medical fields (Davis & Ponnamperuma 2005:279; Van Tartwijk & Driessen 2009:790-791). The portfolio format was borrowed from architecture and the arts, where it had been an essential part of education and practice for a considerable time. The term broadly refers to a collection of outputs as record and evidence of competencies achieved through completed work, or of progress made in the process of acquiring new competencies.

It is noticeable that there is a substantial difference between the number of respondent institutions that require third party aptitude tests (49.2%) and those that require applicants to submit portfolios (29.7%). The cumulative data in Salama (2015:86) indicate that half of the American respondent institutions required that portfolios be submitted; this mostly accounted for its ranking as the third most popular assessment tool. Others were located in South Africa, Israel, Denmark, Switzerland, the United Kingdom, Canada and New Zealand. The data also suggest that portfolios are always weighted with other assessment tools; Goldschmidt et al (2001:283) report that portfolios are often presented as part of an interview. The research indicates that there is no consensus among educators of its value during selection of beginner students. Strong support for the portfolio came from respondent institutions in New Zealand and the United States of America, but strong opposing views were also recorded. The response of a school in the United States that rejected portfolios outright is quoted as follows: "American school art education is inconsistent in availability and quality; a portfolio requirement would be unfair to our applicants" (Goldschmidt et al 2001:288).

Formal portfolio reviews, and less formal critiques, are well-established assessment tools in architectural education. Even where portfolios are not required at the outset during the selection of beginner students, they are generally used at a later stage for the promotion of candidates to senior years of study and for admission to postgraduate programmes. In this context portfolios do gain support when used for delayed selection, for instance where an institution admits a large number of beginner students which is then reduced to a fewer number of students during the course of study. Goldschmidt et al (2001:288) indicate that this procedure is motivated by an opinion that "[...] performance in architecture cannot be accurately predicated ahead of time and therefore the best policy is to allow as many students as possible to begin architectural studies, with control points at pre-established points along the way".

One school indicated that completing the first year of study in a school of architecture is believed to be the best indicator of future success, with a second screening after third year when they require a minimum average of 60% for students to progress to fourth year. While this attitude surely contributes to high rates of attrition, another respondent views students who drop out during their course of study as the norm and thus to be expected (Goldschmidt et al 2001:288). This approach was also prevalent at the Bauhaus.

#### **3.7.4. Interviews**

Selection interviews are usually conducted by members of staff, as already indicated by Abercrombie et al (1969:22) for the Bartlett, but at some schools senior students may assist in the process. According to

Goldschmidt et al (2001:284) interviews are used by 18 out of 69 institutions (26%) in ten countries, while Salama (2015:86) found the number to be lower, namely at 22 out of 118 (18.6%). Again opinions on the motives for and efficacy of this assessment tool differ, with those in support of interviews often using it as an opportunity to present and discuss portfolios. Goldschmidt et al (2001:288) refer to a Canadian school that viewed the combination of interview and portfolio review as a good predictor of success in the studio; moreover applicants with a high interview score showed themselves to be leaders in the studio.

Those institutions that oppose interviews thought that it required a measure of consistency and training of the interviewers, an aspect that they seemingly wished to avoid or with which they were uncomfortable. Others were of the opinion that the interview format conflicts with their “emphasis on academic performance” (2001:287). Some institutions mentioned logistical considerations, including travel distances and thus travel cost. With reference to Uganda, Olweny (2008:4) makes some salient observations in this regard:

In addition to [academic considerations], all applicants were required to attend a face-to-face interview. This however proved challenging, given difficulties in transportation in the region. It was however regarded as an opportunity for applicants to visit the school, as many had not been in an architecture school before, let alone the university. The interview itself was to ascertain interest in architecture, as well as to allow applicants to espouse their 'life experience' as this was seen as being a key ingredient in success in architecture.

Another respondent expresses regret for not using interviews but this was done as the conducting of interviews is considered to be too labour intensive, despite it being “a useful tool to discover talent that is not testable” (Goldschmidt et al 2001:288). Other researchers also mention interviews as an opportunity to assess qualities that may otherwise be difficult to access – see Sedlacek (2003:268-269) as well as Andjomshoaa, Islami and Mokhtabad-Amrei (2011:218). Abercrombie et al (1972:35) had already indicated that the interview format is time consuming, but also that it potentially served purposes other than purely predicting academic potential and is therefore, on the whole, considered to be constructive.

### **3.7.5. Special architecture tests**

In contrast to the generic tests that are processed externally, schools of architecture themselves mostly administer special architecture aptitude tests and examinations, otherwise in certain instances these are administered centrally or on a national level. In all events they are focussed only on the admission of students to architecture programmes. Salama (2015:86) recorded that 20 schools in 11 countries, or about 16.9% of institutions, used such tests, with a higher percentage of 26% noted in the survey by Goldschmidt et al (2001:284).

“Tasks given in those tests pertain to visual memory, spatial organization, drawing, simple designs, and so on” (Goldschmidt et al 2001:282). Understandably such tests vary considerably between institutions, but they share the common goal of finding “evidence of non-verbal, or Visio/Spatial intelligence” (Goldschmidt et al 2001:286). A response from the United States was quoted as follows:

The purpose of this test is to provide the College Admissions Committee with the means to identify those candidates who exhibit the strongest motivation and the greatest talent for architecture. The Admission Test consists of a number of exercises designed to call forth the candidate's visual memory and logic, and ability to order space, form, pattern and color. (Goldschmidt et al 2001:286)

Among these were the Swedish institutions, where an established special architecture test – one of three admission routes available to prospective students – is considered to be very successful. The following opinion from a respondent in Sweden was recorded:

The background of the Architectural test is that the schools believed that neither the gymnasium [high school] grades nor the aptitude test were 100% relevant for architects; artistic merit etc. did not show that way. The Architecture test has now been used for 14 years and has been a success. (Goldschmidt et al 2001:287)

An example of an especially challenging and comprehensive test was recorded for a Slovak school:

Applicants must pass an Entrance Examination where their abilities and knowledge are examined in the following: drawing, history of architecture, design, a second language, creative abilities, concepts of spatial proportion, plus mathematics and modelling for the design programme. (Goldschmidt et al 2001:287)

Although only two responding institutions in the United States indicated the use of special architecture aptitude tests, a greater number of institutions had used such a test in the past. The American Institute of Architects and the Association of Collegiate Schools of Architecture sponsored a study as pilot for a national Architecture School Aptitude Test (**ASAT**) in the USA in the late 1950s. It was administered through much of the 1960s by a number of schools for selection. Akin and Erem (2011:347) cite an example of the structure of an ASAT test from 1965:

Section 1: architectural terminology (20 minutes), Section 2: visual arts interpretation (30 minutes), Section 3: physics (30 minutes), Section 4: solid geometry (20 minutes), Section 5: spatial reasoning – I (six minutes), Section 6: spatial reasoning – II (12 minutes), Section 7: graphic pattern completion (12 minutes).

According to Moore (1970:28) the first four parts were multiple-choice forced-response questions that were machine scored and the last sections were open-ended free-response tasks that were marked by hand. Moore (1970:28) criticised the ASAT for its low predictive value of performance at schools of architecture and argued that its expectations were misplaced. He cites examples of terminology that applicants were expected to know – “[...] capital, cornice, fascia, jamb, and the like” (Moore 1970:29) – that students of architecture would surely learn during their studies, but most probably would not be familiar with before.

Unless these terms were made available to applicants to study beforehand, his criticism is justified as most applicants and beginner students, being newcomers to architecture, are not familiar with concepts and terms that describe elements or components of a building. He is also critical of the ASAT format and its appropriateness:

Is there reason to expect that an applicant who knows a few definitions will understand human behavior and translate it into good design? And how can sensitivity to form and space possibly be evaluated on a multiple choice test (where someone else has already figured out the 'correct answers')? (Moore 1970:29)

Moore's own research indicated high and significant correlations between academic performance and three interesting tests that challenged the cognitive judgement of an applicant (1970:31-32).

A responding institution from India commented that no special test for architecture existed at the time of the survey, but considered such a test necessary (Goldschmidt et al 2001:286). In the meantime the Council of Architecture in India has introduced and conducted a National Aptitude Test in Architecture (**NATA**)<sup>10</sup> since 2006 (India Council of Architecture 2017:4). It is explicitly geared as the threshold to admission at institutions that offer five-year degree courses in architecture. It is taken as a one-day paper-based test at centres all over India and aims to facilitate applications to numerous institutions and in so doing avoid applicants having to sit for multiple aptitude tests.

NATA measures the aptitude of the applicant for specific field of study, i.e. Architecture. The test makes an assessment of drawing and observation skills, sense of proportion, aesthetic sensitivity, Mathematics and critical thinking ability that have been acquired over a long period of time and are related to the specific field of study. (India Council of Architecture 2017:4)

Applicants wishing to take the NATA are required to meet specific academic requirements, including obtaining a satisfactory mark in Mathematics (India Council of Architecture 2017:7). The NATA consists of three sections, namely mathematics that contribute 20% to the final score, general aptitude and drawing that each contribute 40% to the final score. Applicants should attempt to complete two drawing questions that are judged according to the following criteria:

- Ability to sketch a given object proportionately and rendering the same in visually appealing manner;
- Visualising and drawing the effects of light on the object and shadows cast on surroundings;
- Sense of perspective drawing;
- Combining and composing given three dimensional elements to form a building or structural form;
- Creating interesting two dimensional composition using given shapes and forms;
- Creating visual harmony using colours in given composition;
- Understanding of scale and proportions;
- Drawing from memory through pencil sketch on themes from day to day experiences. (India Council of Architecture 2017:6)

It is not uncommon to find that this category includes assessment devices that were informed by or borrowed from other fields, such as education and psychology. The research by Roberts (2004) serves as an example – his thesis studied the relationship between the performance of architecture students in

10 According to the student advice website Collegedunia (2017): "NATA 2017 was conducted on April 16, 2017 in 2 sections on the same day. The first section was Drawing Test and the second section was General Aptitude & Mathematics. The level of drawing test was difficult as compared to previous year. Whereas, the questions of General Aptitude and Mathematics were easy to moderate. For this year, the exam was organized across 69 centers in India and there was a single center in Dubai as well. The entrance architecture test has gained popularity over past few years and to meet the demands, seats have also increased. Currently, about 24 thousand seats are offered in about 450 recognized institutions across the country, most of which accept NATA scores."

design projects and their disposition towards Wholist-Analytical or Verbaliser-Imager cognitive styles. While this type of testing may seemingly overlap with generic psychometric and aptitude tests, certain established tests may be purposefully chosen for their relevance to the skills required for the study or practice of architecture. In some of these cases evaluation by (external) specialists may be a requirement.

### **3.7.6. Letters of recommendation**

Teachers, or someone familiar with the applicant's work and character, usually write letters of recommendation for selection purposes (Goldschmidt et al 2001:283). The cumulative data indicate that about a fifth of institutions in the United States require letters of recommendation; this number is higher than those who consider special architecture aptitude tests, interviews or portfolios. Only three institutions outside of the United States required references; they were from Canada and the United Kingdom. Goldschmidt et al (2001:287) indicate that a letter of recommendation is part of the standard application form for the latter; the researchers received no revealing comments on this assessment tool.

Abercrombie et al (1969:17) indicate that referee's reports might provide valuable context to an application, but that its value depended on the referee's understanding of architectural education and the profession. This awkwardness is seemingly overcome when referee's reports are required for admission to postgraduate or advanced professional programmes in architecture. In these cases it is now most often required that the reference is prepared by a lecturer who taught the applicant in an undergraduate studio and therefore has specific experience of the applicant's academic and design capabilities. These are usually submitted directly to the institution to ensure that confidentiality is maintained.

### **3.7.7. Essays**

Short essays of approximately 500 words typically focus on explaining why the applicant wishes to study architecture. Its purpose is for the assessment of the applicant's ability to clearly communicate ideas and to reason them through (Goldschmidt et al 2001:283). The cumulative data indicate that nine schools in the United States and one in Canada considered such essays. This may be a small percentage of institutions (9.3%), but it is suggested that they are considered with great seriousness by these institutions. "Where longer essays are requested the departments in question are interested in the prospective student's intellectual and logic thinking powers" (2001:287).

Goldschmidt et al (2001:287) point out the importance of good writing and reasoning skills and that several institutions place a high value on the language component of an applicant's academic record or aptitude test. An Australian school indicated that they observed a strong tendency "[...] for those with good English-writing skills to perform better overall in the architecture course than those with lesser English skills" (2001:287).<sup>11</sup> Research by Adewale and Adhuze (2014:74) suggests that more essay-type

<sup>11</sup> Presumably the argument is about language skills, as opposed to skills in a specific language.

questions would be advantageous in the selection of students for architecture programmes at Nigerian Polytechnics, despite the fact that this type of question requires dedicated resources in assessing them.

### **3.7.8. Personal statements**

Statements of intent or personal statements were required by the least number of institutions (6.8%); these were split between Egypt, the United Kingdom and the United States of America. Like the essays, statements are typically required to motivate why an applicant wishes to study architecture, but differ in that the reader mainly assesses the candidate's personal goals, rather than only his or her writing skills (Goldschmidt et al 2001:287). Abercrombie et al (1972:127) indicate that personal statements had positive outcomes in selection results at the Bartlett School of Architecture and one can further speculate that motivation is a critical aspect for any student wishing to pursue a higher education qualification.

### **3.7.9. Discussion**

The research represented in the two surveys provides insight into a worldwide and wide, but probably not representative, sample of the admission procedures and assessment tools used by schools of architecture. Apart from the eight formal categories of assessment tools discussed, Goldschmidt et al (2001:289) remark that a handful of schools are interested in an applicant's non-academic activities, such as community involvement, hobbies, travel and more. These considerations could indicate curiosity, a certain level of societal awareness and compassion, independence or confidence.

The researchers indicate that, although schools intend to admit students with the best potential to succeed, "[...] very few schools make an effort to verify that their criteria indeed result in an optimal intake of students" (Goldschmidt et al 2001:289). They speculate that admission policies are partly influenced by sweeping cultural attitudes towards architecture and higher education and offer the opinion that the nature and orientation of the schools, and the institutions they form part of, influence the admission procedures and selection tools used. Research universities, as an example, generally tend to value academic and scholastic achievements more than schools where design skills and studio performance are considered more indicative of success. Their respective value systems are certainly reflected in the way that assessment tools are considered for selection. As Goldschmidt et al (2001:290) state: "Admission criteria to universities at large and to architectural programs in particular are affected by the orientation of those who have the power to determine admission policies".

It is also clear that resource limitations increasingly determine which assessment tools are used. A scarcity of resources may therefore, at least in part, be responsible for the lack of research into the suitability and efficacy of selection practices.

### **3.8. SUMMARY**

The procedures and assessment tools used for the selection of students for admission into systems of architectural education were investigated in this chapter. It was found that selection is implemented when the number of applicants wishing to enter a school of architecture exceeds the student numbers that available resources are able to accommodate. Student selection raises the expectation that the academic performance of the cohort will be improved and that rates of attrition will decline. As a rule the beginner student is a neophyte to the discipline of architecture and therefore has little prior knowledge of the nature of its education or that of the profession. In the context of a developing economy this is more pronounced for applicants from disadvantaged communities.

Some prominent schools of architecture have in the past aligned their admission procedures to their teaching approach and normative values. In the Beaux-Arts system selection was based on a prescribed portfolio and special architecture tests that required of most applicants to prepare for the entrance competition. At the Bauhaus students were required to submit biographical information with an initial portfolio, but had the opportunity to prepare for delayed selection by completing a prescribed, extended foundation course. The Bartlett School of Architecture weighted assessments of an applicant's academic record with socio-economic considerations, their referee's report and a personal statement; nominated applicants were subsequently invited to attend an interview where a portfolio of creative work could be presented. They experimented with different interview formats and found that, apart from the opportunity for assessment, the interview had other inherent advantages for applicants.

It has been shown that admission procedures cannot be considered universal or standard. In the main, eight assessment tools have been identified in the surveys studied and the literature shows that more than 93% of respondent institutions and all three of the case studied employ multiple tools from this list to effect their procedures. Even in the few countries where special architecture aptitude tests are the national norm, other avenues of entry are available or the test results are used in conjunction with other considerations that skew them as sole benchmarks. Quantitative data suggest that, despite these differences, congruent trends exist and that some assessment tools, particularly the academic record and aptitude tests administered by third parties, are far more popular than the other six assessment tools, but also that the academic record principally acts as an applicant's threshold to higher education.

It is evident that there is little consensus among schools of architecture about the most appropriate tools to use for selection. Moreover, the qualitative responses to the surveys often offered disparate motivations for using the same assessment tool and also indicated that the same assessment tool is considered differently, and with different expectations, by different schools of architecture. This may be due to schools aligning their admission procedures to their academic programmes and specific aspects of its presentation. Nonetheless the literature shows that the suitability or efficacy of selection tools often remain untested or fail to provide the expected outcomes.

The surveys from the literature study include very little on South African schools of architecture. While it is not possible to identify individual institutions from the listing per country, only one respondent institution from South Africa is included in the study by Goldschmidt et al (2001) and a second one is added in the cumulative data published in Salama (2015:86). These two institutions represent less than 20% of the total number of schools of architecture currently validated in this country. It can therefore be argued that, for lack of information available, an opportunity exists to investigate the admission procedures and assessment tools used by schools of architecture in South Africa.

### **3.9. CONCLUSION**

The first subproblem was to critically investigate the admission procedures and assessment tools for selection into systems of architectural education worldwide.

The supposition to subproblem one is that schools of architecture worldwide use a variety of differing admission procedures and apply multiple assessment tools during selection. As explicated in the summary above, the literature suggests that schools of architecture vary substantially in their admission procedures and that the vast majority use multiple assessment tools to evaluate applications for admission. The analysis and arguments presented therefore supports the supposition.