

The John Moffat building :

a conservation report

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Commissioned by:
The Research Committee,
School of Architecture and Planning,
University of the Witwatersrand.

Compiled and Written by:
Candice Keeling
M.Arch (prof) (Wits)
MSc Conservation Monuments and Sites (K.U. Leuven).

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1.1 Background.

The John Moffat Building was built for the Departments of Architecture, Town and Regional Planning, Quantity Surveying, and Fine Arts in 1957. As a bespoke design, done collaboratively within the Architecture Department, it was quietly successful in meeting the needs of these disciplines and their users at the time. Over nearly 60 years it has been changed in ad-hoc additions and two new adjacent wings, and the users have altered in their organisation and numbers.

Regarding tenants, the now-School of Architecture and Planning has been motivating for an overhaul of the entire precinct. This follows a design competition for the new School of Construction Economics building which included some schematic ideas for refurbishing John Moffat. These designs raised concern that the building was not being given adequate protection as heritage (just missing the automatic protection provided by the National Heritage Resources Act of 1999 reached at the age of 60 years) and vulnerable to damage by consultants and internal contractors without adequate expertise in the restoration of modernist architectural heritage. This concern is because members of the School recognise the seminal importance of the building as a Modern Movement design.

To address these concerns, the Research Committee of the School has commissioned a graduate, Candice Keeling, with an additional qualification in Architectural Conservation, to carry out a study of the John Moffat Building. This report goes beyond what would be required to establish the building as a Heritage Resources Agency listed site. It aims to establish the value of the finishes, elements and original qualities of the building so these can be pro-actively protected and restored in the process of upgrading the precinct. Such changes would make the John Moffat an exemplary restoration of Modern Movement architecture, unlocking its potentials for research, teaching, institutional allegiances and publicity.

This report is intended as a discussion document that will be used to establish guidelines for any future changes affecting the building. It highlights areas and finishes needing immediate attention. It may also give insights into how the restoration can be adapted in a contemporary approach that is aligned with the original, synthetic vision of the original team of architects. As they wrote:

“The introduction of the new building into a Campus of traditional character and classic motifs posed the question as to whether the design should reflect current architectural theory, relying entirely on its contemporary merits or whether the building should be designed with cognisance of its setting, one in which an attempt be made to create harmony with its neighbours. The architects chose the latter, more exacting approach. ... An attempt was made to design a contemporary building which would nether the less be in harmony with its Campus setting. In its height, its scale and its simple massing and in the proportions of its modular openings it has an affinity with that which exists. A ‘fashionable design’ was avoided so that the building should not rapidly date, but rather, that it should exhibit a timeless character.” - Howie, W.D. (1959), page 20.

Figure 1 (opposite page): The John Moffat building circa 1960. (University of the Witwatersrand Archive).

1.2 Structure.

The report was determined by firstly understanding the history of the building; the uses of the spaces within it and how users traversed the various areas, explored through important phases in the life of the building. Following this it develops an understanding of the materiality of the building and its various components, concluding with recommendations.

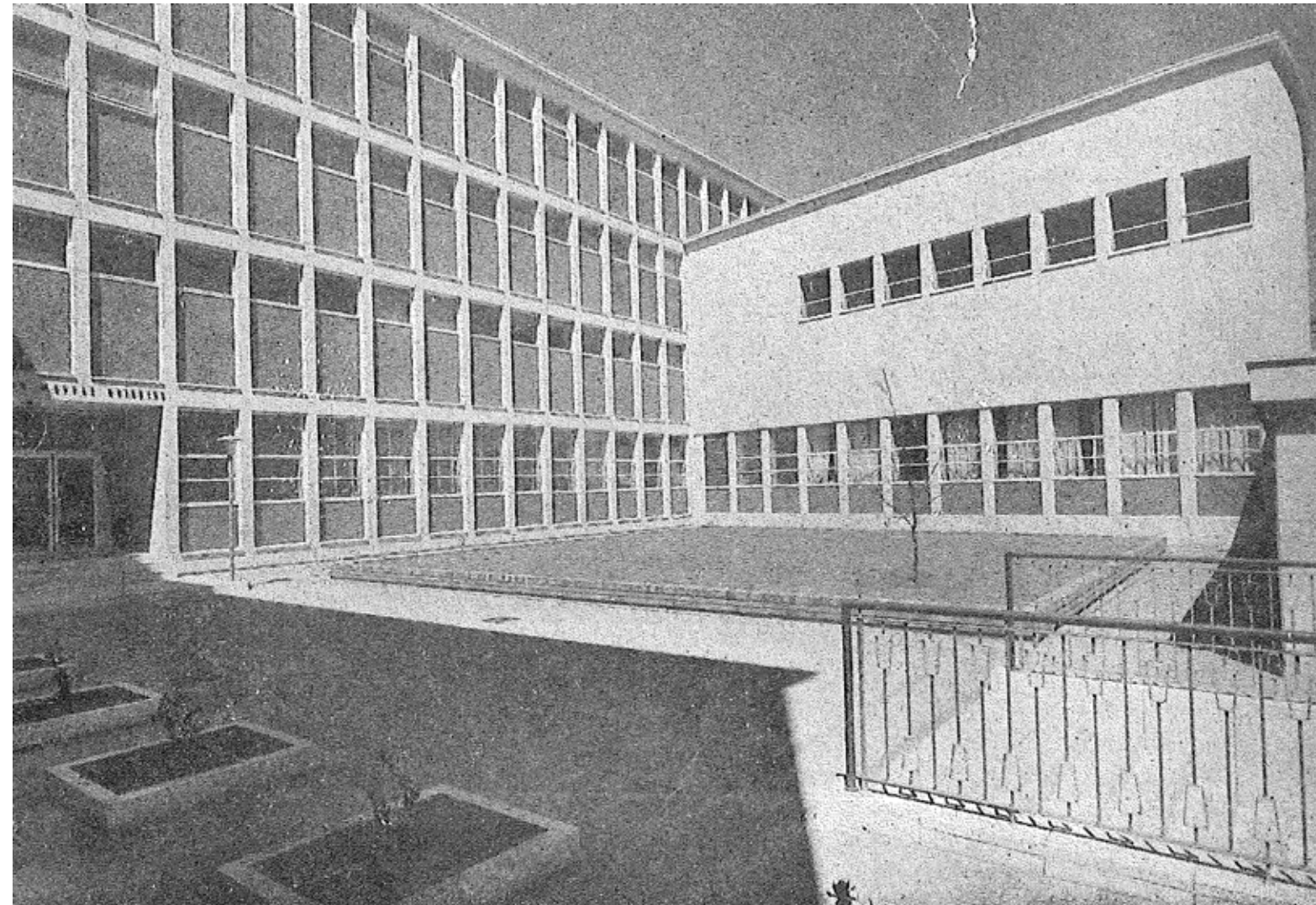


Figure 2: Western Courtyard circa. 1960
(Howie, W.D. (1959), page 20).



2.1 - BACKGROUND TO THE JOHN MOFFAT PROJECT

In 1921 the Department ¹ of Architecture was established at the University of the Witwatersrand as part of the Faculty of Engineering. Six years later in 1927 it had fulfilled the academic requirements to be recognised by the Royal Institute of British Architects or RIBA (which meant that upon graduation students were considered to have the equivalent of a RIBA examination). However, it was only in 1940 that the department achieved the status of Faculty (of Architecture) and it was able to issue the first official degrees, diplomas and certificates to graduating students. ²

The School played a critical rôle in the growth and definition of campus architecture. Professor Geoffrey Eastcott Pearse ³ was the first Professor of Architecture in South Africa and Head of the School of Architecture at the University of the Witwatersrand. He installed the teaching of the Beaux Arts tradition, which was based on classical concerns and how they could be interpreted eclectically. The growth of the School coincided with the development of the University which started during the 1920s with the neo-classical building of Central Block, which dominates the symmetrically placed central axis of the east campus. Over the next 30 years new buildings were constructed on the campus and modifications made to Central Block (after a fire) – the majority of the projects undertaken during the first 20 years were by the Universities architects ⁴ with Pearse providing a supporting role. It was not until the late 1930s that the University had faith in the ability of the architecture School and campus were designed predominantly by the lecturers; amongst others the Hillman Building in 1939 by Duncan Howie and the Dental School and Hospital in 1941 by Pearse and Cowin.

After 1932 the initial neoclassical stylistic approach of Pearse was modified to that of the International Style with the works of Gropius, Mies van der Rohe and Le Corbusier dominating the aesthetics and design approach of the School of Architecture. The School's theories and aesthetics merged with traditional classicism and modernism to form the overall principles of the School. Herbert wrote: "both are governed by a rigid rectilinear geometry, and in both they are disciplined by an understanding of the relationship of form to structural technology." ⁵ However, the various ways in which the rationales were interpreted led to diversity in the staff members approach to teaching and architecture.

The University restricted employees of the Architecture department to a small amount of private work; this resulted in any larger projects utilising the philosophy of teamwork. This approach is said to have derived from the teachings of Walter Gropius, but, more likely grew out of common education, similarities in approaches, corresponding abilities and above all else friendships. These collaborations resulted in a shared workspace being established known as 'Studio Seven' ⁶, a space that allowed the staff to keep the professional work separate from that of the academic faculty, all the while allowing them to carry out commercial activity on the campus. A small number of (predominantly modest) projects were produced out of the office in a tin shed on the University campus, with all aspects of the work being done by the architects themselves. One of the projects undertaken by Pearse and his colleagues (including John Fassler) that is of great significance was Escom House in 1935. This project cultivated Fassler's interest in the "application of advanced technologies in both structural and environmental control" ⁷ which was fully exploited later in the John Moffat Building.

'Studio Seven' along with other practitioners (predominantly in Johannesburg) brought about *the Transvaal Group*. This took the form of an established association consisting of "loosely constituted alliance of progressive practitioners and

Figure 3 (opposite page): Aerial of the University Campus circa 1960. (University of the Witwatersrand Archive).

1 - When an architectural School was first established at the University of the Witwatersrand in 1921 it was known as the Department of Architecture and fell under the Faculty of Engineering. In 1940 it became the Faculty of Architecture. However, throughout historical text it was called and known as the School by professors such as Fassler and Howie. Sometime around the turn of the century it was changed to the School of Architecture and Planning. Throughout this document the term School will be used.

2 - Howie, W.D. (1959), page 17.

3 - Pearse was the first professor of Architecture in South Africa. Similar to other architectural professionals in South Africa at the time he had no formal university training but gained his skills through apprenticeships and attending part time courses in both South Africa and England. Professional status was achieved when a person passed the exams of the Royal Institute of British Architects which Pearse did in 1912. (Herbert, G. and Donchin, M. (2013), page 148).

4 - The firms of Emley and Williamson and Cowin, Powers and Ellis were regarded as the official Architects of the University. (Herbert, G. and Donchin, M. (2013), page 175).

5 - Herbert, G. and Donchin, M. (2013), page 180.

6 - Herbert, G. and Donchin, M. (2013), page 148.

7 - Herbert, G. and Donchin, M. (2013), page 160.

teachers and students of the School of Architecture, a coterie of kindred spirits which Le Corbusier dubbed *Le Groupe Transvaal*.”⁸ The Transvaal Group introduced modern architecture within South Africa and particularly the Witwatersrand. They translated the new theories of architecture into practical buildings, producing structures that have since become icons by not only individuals, but “small partnerships of practicing architects working in harmony.”⁹ These alliances were to last well into the 1960s, although Le Corbusier’s influence was waning from the late 1930’s.

Over the years the faculty grew, in the number of staff members as well as students, and many changes occurred. The most influential was in 1948 when Professor John Fassler took over as Head of the Architecture School and Dean of the Faculty from Professor Geoffrey Pearse. Other changes occurred as new courses were added when the Department of Quantity Surveying was incorporated within the School and in 1945 a Town Planning diploma for post graduate students was established (this was to expand and later become a department in its own right). Classes in Fine Arts were given as part of the School of Architecture since its inception in the 1920; the demand for not only more (and larger) courses in art theory, but also practical studies reached a pinnacle in 1957. This resulted in an independent Department of Fine Arts being established –similarly to Town Planning and Quantity Surveying, it also fell under the Department of Architecture.

With the growth of the department the facilities were becoming increasingly inadequate, as John Fassler mentioned in his 1948 yearly address: “It is only too apparent that widely scattered studios, lecture rooms and library mitigate against the essential spirit which is the soul of a training institution. And the lack of desirable facilities must hamper the development of the training offered. The School is in danger of becoming dismembered with students in one year of study being total strangers to those in another – a sad situation indeed.”¹⁰

The university finally decided a purpose built building was needed and the commission for the building named after John Moffat¹¹ was given to the staff of the Department of Architecture rather than just the Head of School. Fassler, in his role as Head, with Howie as a senior lecturer and his ‘right hand man’ were tasked with creating a team that was able to work together and incorporate the various individual philosophies and stylistic preferences.¹² The staff themselves were able to determine the composition of the Team and what role each member played.

On the 3rd of August 1955 (nine months after the work was commissioned) John Fassler notified the University of the staff members participating in the design team: J. Fassler, W.D. Howie, G. Herbert, J. Morgenstern, J. Shunn and U. Tomaselli,¹³ C. Pinfold had initially expressed interest and participated in the initial design, however, he decided not to partake. “The nominated consultants were Mr. M. Marcus¹⁴, consulting Structural Engineer, and Mr. N.P. Smit, the University’s consulting Electrical Engineer.”¹⁵ Each member had “his own personality, temperament, experience and vision. They also had different skills to contribute, and sometimes saw the problem through the distorting lens of those particular aptitudes: to one the project was an artistic challenge, to another a technological opportunity”¹⁶ this was seen as an asset and explored during the design stage of the project. The ultimate decisions were left to Fassler (as head of the design team), however, the final design did not depict the style Fassler was leaning towards (as can be seen from his earlier projects), and was not a style he took forward into his later work. The John Moffat is almost a style of its own that was drawn from the six team

8 - Herbert, G. and Donchin, M. (2013), page 150.

9 - Herbert, G. and Donchin, M. (2013), page 151.

10 - Fassler, J. (1948), page 243.

11 - John Abraham Moffat was born in 1871 in Manchester, after spending his early years in Australia and New Zealand he settled in Johannesburg in 1905. He died in 1941, two years after retiring, as part of his estate he bequeathed £ 100 000 to be used by the University fifteen years after his death in a permanent form. This money in addition to a loan from the government was used to construct the Architecture and Fine Arts Building.

12 - Herbert, G. and Donchin, M. (2013), page 181.

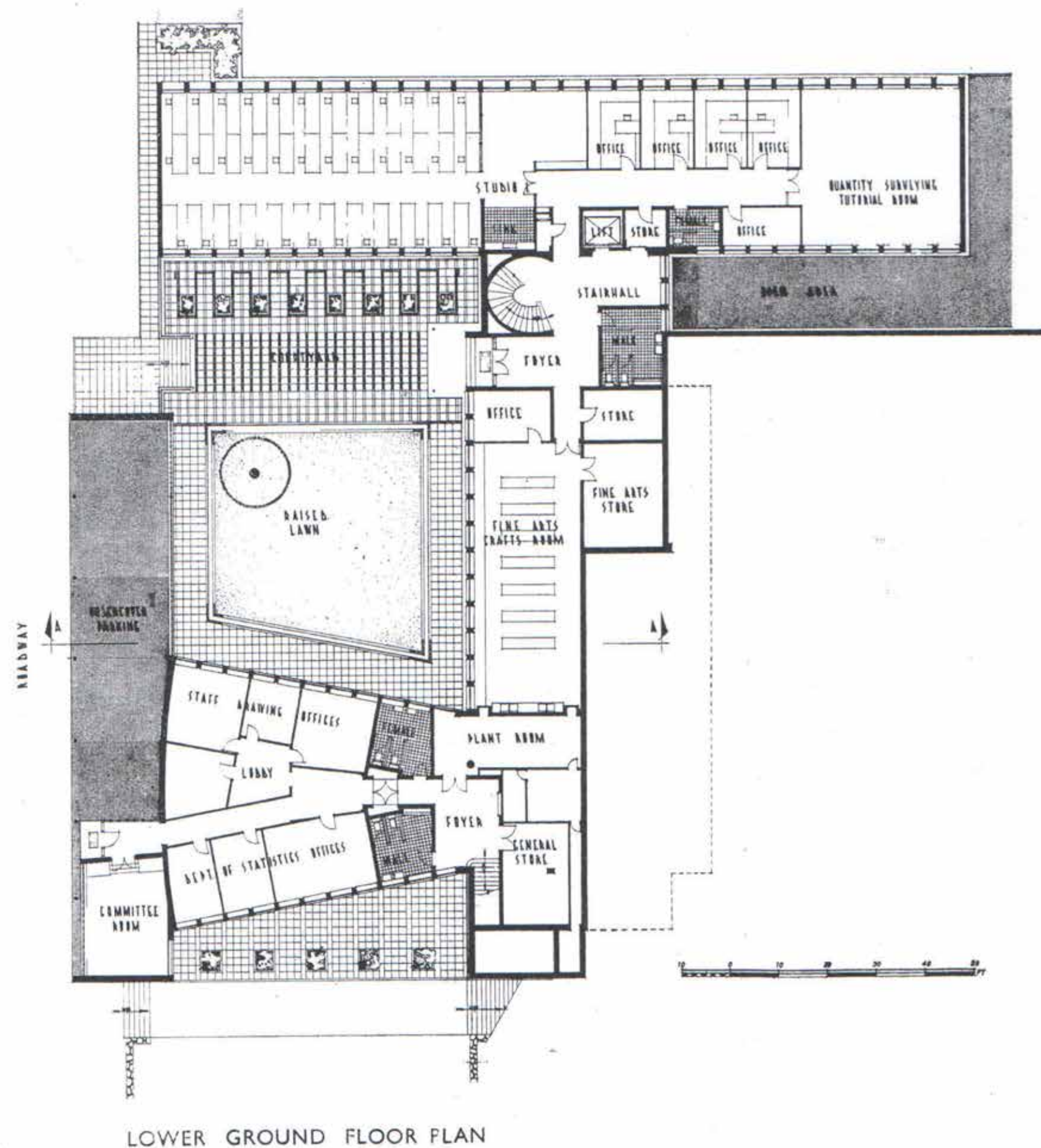
13 - The majority of the architects were born in the Transvaal and studied in the area surrounding the University, additionally all of them received their degrees from the University of the Witwatersrand. The various members of the team had assorted practical experience. Ranging from collaborative university projects, individual private residential work and large scale corporate buildings. The ages of the various members team members ranged from 30 to 45. (Herbert, G. and Donchin, M. (2013), page 182 to 184).

14 - Manfred Marcus was the theory of structures teacher at the School and was generally admired by the students. (Herbert, G. and Donchin, M. (2013), page 185).

15 - Herbert, G. and Donchin, M. (2013), page 183.

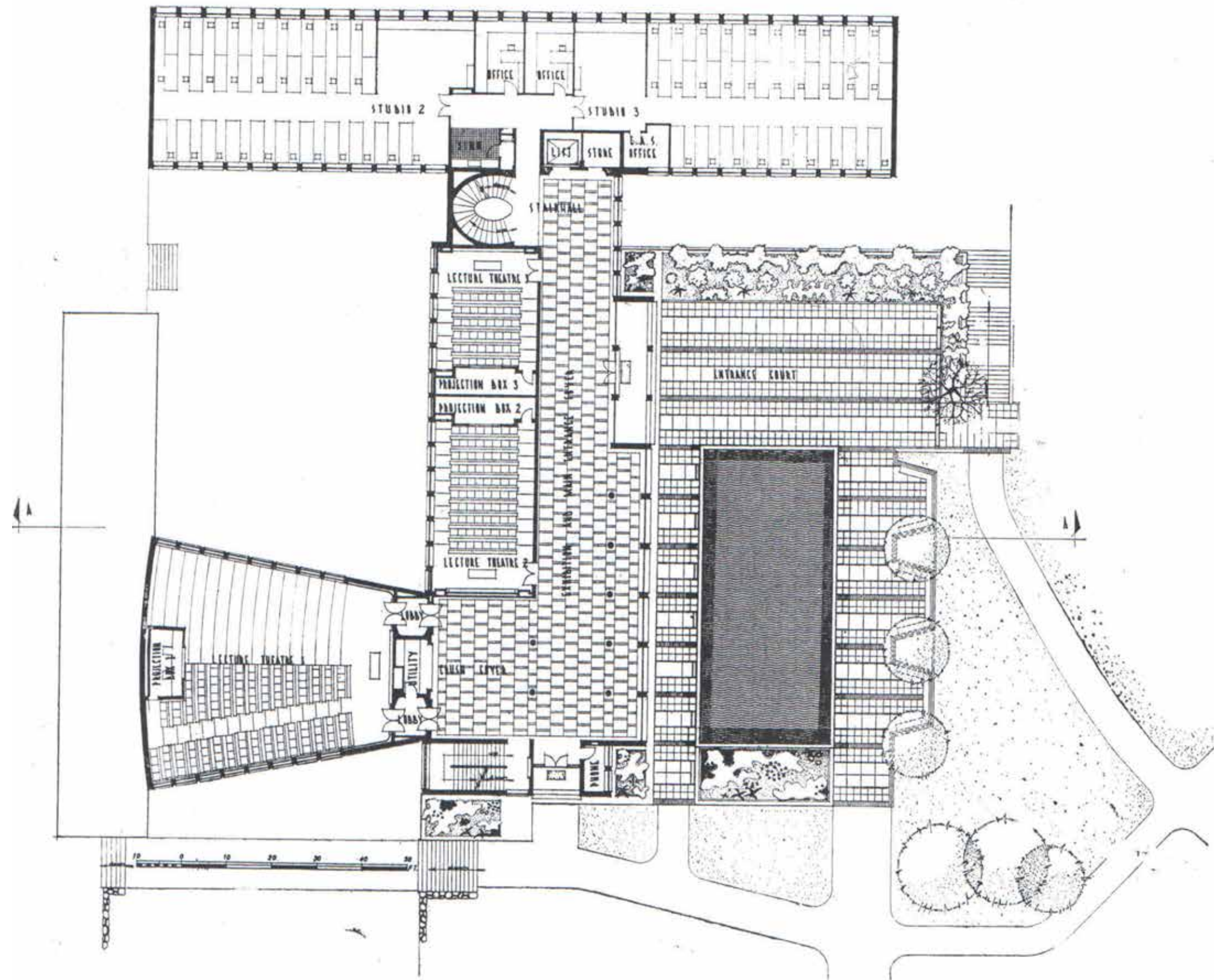
16 - Herbert, G. and Donchin, M. (2013), page 186.

members and how they interacted with each other's individual styles. Fassler's love of classical architectural detailing went against the principles of the International Style. The combination of Classical and Modernism resulted in a hybrid style that was based on the teachings of Le Corbusier and Leonardo Da Vinci (Renaissance Architecture). This is clearly seen in the motifs used in strategic places within the building – the Modular and the Vitruvian man.



LOWER GROUND FLOOR PLAN

Figure 4 - Original Lower Ground Floor Plan - Howie, W.D. (1959), page 18.



GROUND FLOOR PLAN.

Figure 5 - Original Ground Floor Plan -
Howie, W.D. (1959), page 19.

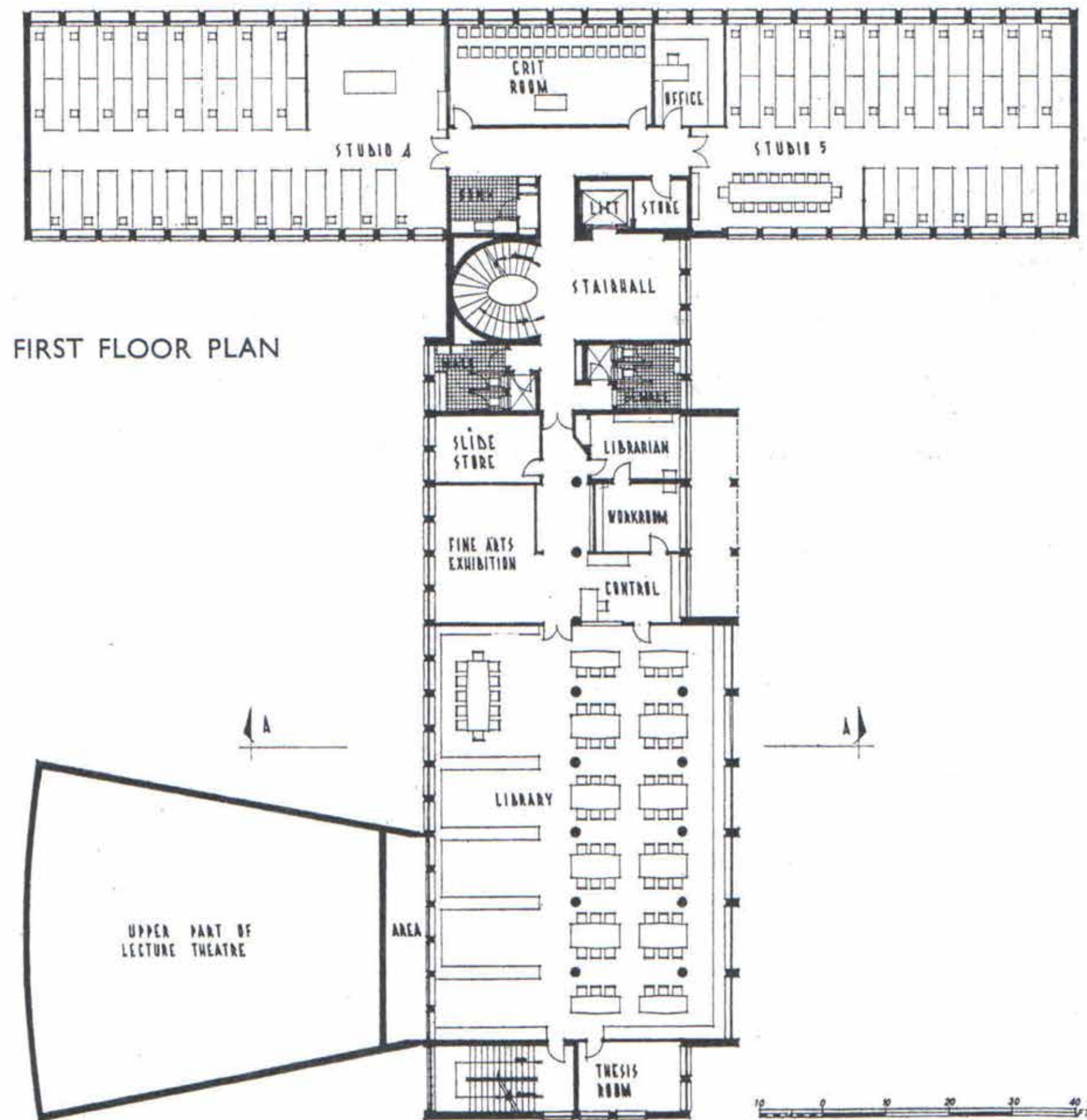


Figure 6 - Original First Floor Plan - Howie,
W.D. (1959), page 21.

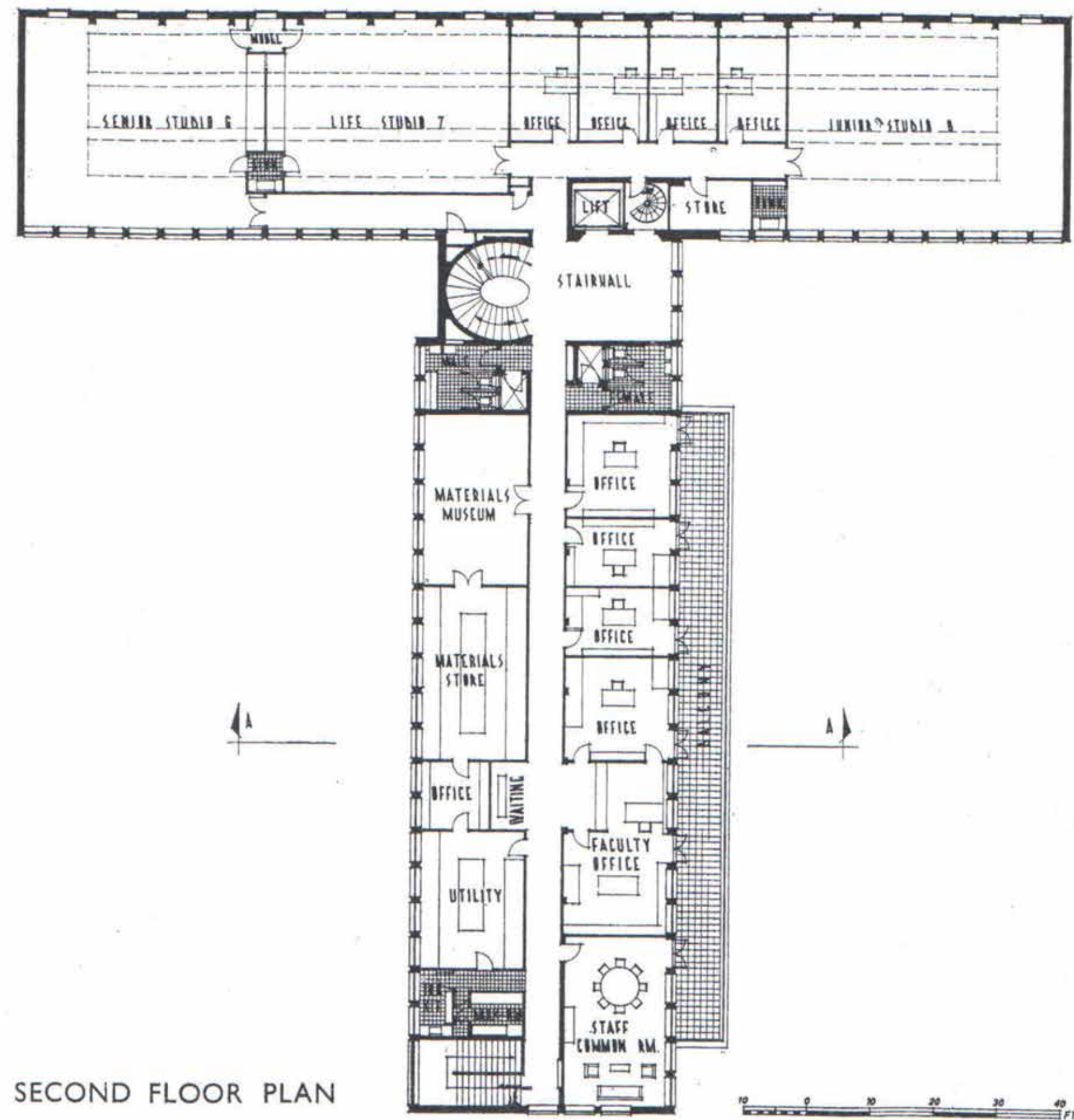


Figure 7 - Original Second Floor Plan -
Howie, W.D. (1959), page 21.



The challenge that the design team undertook was to preserve the integrity of the context all-the-while creating something new.¹⁷ The architectural character, scale and proportions of the John Moffat Building derived from those of the existing buildings on the Universities campus, particularly the William Cullen Library. Howie wrote in a brochure for the opening of the building: “The introduction of the John Moffat building into an existing University campus determined the nature of its architectural character. It was felt that the building should be a harmonious addition to the University but that the planning and the detailed treatments should take advantage of contemporary technological methods...In the handling of the scheme in its broad and detailed aspects, the architectural treatment should be free from any features which might form part of passing architectural fashion.”¹⁸

The Architecture, Quantity Surveying and Fine Arts departments were to be inserted within the one building, each required its own identity all the while merging within the planning of the various spaces and circulation nodes. The process to design this building started with a schedule of accommodation that was explored through sketches and ideas by the design team. Following this the members compiled sketch plans either in pairs or individually. These plans have been lost, however, G Herbert recalls that they all had similar principles,¹⁹ with the best ideas being incorporated into the final sketch plan. “These included the set-back of the East Wing to create a forecourt and the arrangement of the exhibition foyer and lecture theatre suite, amongst others’.”²⁰

A plan and estimated cost was presented to the Building Committee on the 16th of March 1955, these were not approved and changes were suggested (the original plans have since been lost and with them the original design of the building). One document reason for not approving the plan was that the site was to be extended on the northern side beyond what was previously determined by the Committee and a new restriction added stating that the building was to be constructed no closer than 12 meters from the William Cullen Library. By September 1955 the team had revised the program and the plans to include the following ‘essential’ aspects:

- A 300 seat lecture theatre (to be known as the Dorothy Susskind²¹ Auditorium) this was to be used by not only the Architecture Department but the University as a whole in addition, the public – this multi-purpose use dictated its position within the building and its proximity to parking facilities.
- Two 60 seater lecture rooms (later revised to one 80 seater and one 40 seater).
- Exhibition spaces.
- Design studios (for the various disciplines).
- Crit rooms.
- Craft rooms.
- A centrally placed library that could be accessed by both the Fine Arts and Architecture Departments.
- A seminar room for 30 people.
- Material museum.
- Staff and administration offices.
- A drawing office for ‘Studio Seven’.
- A portio that acted as a entrance canopy, parking for staff and demarcated the west courtyard.

Figure 8 (opposite page): Entrance foyer with exhibition boards and curtains on the windows circa 1960. (University of the Witwatersrand Archive).

17 - Herbert, G. and Donchin, M. (2013), page 164.

18 - Herbert, G. and Donchin, M. (2013), page 186.

19 - Herbert, G. and Donchin, M. (2013), page 187.

20 - Herbert, G. and Donchin, M. (2013), page 187.

21 - Dorothy Susskind worked as the Chairman for the University Towns Festival in 1955 and raised funds for the University Appeal. (Howie, W.D. (1959), page 19).

Over the next few months the plans were revised and adjusted to improve the internal arrangements of the building and by April of 1956 the plans were deemed to be advanced enough to call for tenders to clear the site.²² A perspective of the building was drawn at this stage by John Fassler, it shows the eastern view of the “four storey building with a modular façade, capped by a prominent overhanging cornice. The two wings at right angles are anchored in a rectangular lift tower. Attached to the east face is a two-storey projection, containing six-bay colonnade flanked by a further three bays of a nondescript caricature”²³ (see figure 10). Once the tenders for the site and the building came in it became apparent that some calculations had been overlooked during the redesign and the cost of the building exceeded the budget. The Building Committee gave the architects two choices, either reduce the cost or allocate space within the building for other faculties. The architects decided to reduce the costs and opted to remove the third floor from the design, in addition they chose to make adjustments to the treatment of the eastern façade. “The portico, reduced to three bays, now reads as an entry, and the foyer (below) and library (on the floor above) are given appropriate emphasis, both in scale and richness of surface...”²⁴ (see figure 11). In June of 1956 these plans were once again submitted to the Committee and subsequently approved.

Regardless of the many debates regarding the stylistic vision of the building, the internal planning appears to have reached early consensus amongst the team members. This is seen to have stemmed from the “efficient planning of functional spaces (which) was a strong point of the School, emphasised in the design studios and a governing factor in the architectural practice of the teachers.”²⁵

The final plan comprised a basic T-shape with a fan attached to the body of the T.

- The north wing (head of the T-shape) had the studios, the seminar, crit rooms and associated staff accommodation. This location allowed the architectural studios to be lit from both sides and the arts studios to have south light with supplementary roof lights.
- The east wing contained the exhibition foyer with lecture theatres on the ground floor. The library with its controls and an ante-room providing Fine Arts with display facilities for illustrative material referred to in lectures or special exhibitions, is given prominence in the scheme on the first floor level. The administrative offices, ancillary spaces, utility units and Materials Museum are situated on the second floor. The lower ground floor includes the Craft room so placed to facilitate the delivery of bulky materials and cleaning, since the floor is drained to an outlet for sluicing down.²⁷
- The articulated fan shaped form on the south contained the Dorothy Susskind Auditorium, below this Offices for the Department of Town Planning, the staff drawing office and plant rooms complete the lower ground plan.
- Located on the west were the staff garages / portico which define the western courtyard.²⁶

It is important to note, “the programme for the building was based on the annual intake of 40 students in Architecture and 25 in Quantity Surveying. Together with the 43 in Town Planning, this gave the Faculty a maximum of 320, while the Department of Fine Arts required accommodation for 45 students in practical classes and 270 in academic classes.”²⁸

The planning allowed for various access points into the building depending on who was entering. Students came in from the eastern or southern side via the pond and staff from the portico located on the west. The public were able to park on

22 - The site was previously a dumping ground for the soil excavated to make way for both the Library and the swimming pool which is located directly to the east of the John Moffat building. It was a neglected piece of land that was both unattractive and uninviting.

23 - Herbert, G. and Donchin, M. (2013), page 188.

24 - Herbert, G. and Donchin, M. (2013), page 196 and 197.

25 - Howie, W.D. (1959), page 18.

26 - Howie, W.D. (1959), page 18.

27 - Howie, W.D. (1959), page 18.

28 - Howie, W.D. (1959), page 17.

the street to the west of the building (adjacent to the staff parking) and make use of the student entrances. The entrance located off the portico could double up as a client entrance for the 'Studio Seven' office.

The large-span 'flexible' building was constructed out of "a simple system of reinforced concrete columns and beams supporting floor slabs comprising 'Shofco'²⁹ precast pre-stressed beams with hollow block infilling over the uninterrupted spans of 33 ft. (10 meters)."³⁰ The structure determining the openings and the proportions / rhythm / relationship was an underlying modular system - this was 5ft. 6in or in metric 1.68 meters.³¹ This can clearly be seen on the façades particularly through the positioning of the openings; "the proportions of these openings are slightly in excess of a double square and bear marked similarity with the solids and voids of the Central Block and the adjacent Library building, and occur repeatedly in subsidiary elements throughout the building."³² Additionally the modular formed the framework of the design of the internal spaces, the desk locations in the studios, the layout of the office spaces, as well as the positioning of tables and book shelves in the library.

The entrance and exhibition foyer, with the lecture theatres were deliberately placed together and designed with generous lines on the ground floor (see figure 8). This was to facilitate the display of student works to the university as well as the public, allowing the students to interact with the other courses within the School and encourage public opinion and peer evaluation. The walls were covered with cloth pin boards to allow the drawings etc. to be easily pinned up and changed. The lighting in this area consisted of track lighting (to allow for maximum flexibility) to illuminate the walls (and the pin boards) while general lighting was through wall lights mounted on the columns. A small kitchen was installed in the crush foyer of the large 300 seater lecture theatre to cater for various types of events.

The library located on the eastern side of the first floor (at the base of the T-shape) received abundant morning light and the tranquil sounds of the water features in the pond beyond the windows (see figure 9). Internally there were numerous open shelves and a generous reading area with tables and chairs. At the 'head' of the T-shape, the studios were located on the ground, first and second levels. Here they were able to capture cross ventilation from the north to the south, the design took into consideration the requirements of students as individuals as well as working in groups. The staff and administration offices were located on the third floor (within the body of the T-shape) and were within easy access to the studios and lecture halls.

One of the architects W. D Howie stated the following about the building: "The general design represents a conscious pursuit of the thematic variation of the basic module, and a careful integration of all components with this modular theme. The thematic variations may be seen in the scale of the library unit with its related mosaics, in the paving's and garden seats and in the fact that the cornice of the library unit and the theatre wing bear the same proportional relation to those surfaces as the main cornice does to the full façade. The projection of this cornice throws a strong definitive shadow on the sunlight surfaces, and by reason of its undercut profile and contained shadow it persists as a strong terminal definition on the shadowed elevations."³³

29 - Structural Hollow Floor Co.

30 - Howie, W.D. (1959), page 20.

31 - Herbert, G. and Donchin, M. (2013), page 197.

32 - Howie, W.D. (1959), page 20.

33 - Howie, W.D. (1959), page 20.

The various decisions relating to the detailing and finishing of the building were discussed and debated by the team throughout the process. The main point of contention being that Fassler and other older members of the team had evolved their design styles from their early very 'Le Corbusian' teachings, while the younger members were "still loyal to the ethics of the father."³⁴

The following questions arose, with arguments for and against each:

- "Didn't Corbusian orthodoxy demand that functionally – differentiated – zones – the office wing, the studio wing, or the auditorium – be separated by articulated links, and not simply abutted one against the other?
- If ornament is a crime, than while the Leonardo and Le Coburier – derived patterns sand blasted on the plate glass doors were justified, because they stopped people walking unaware into the doors, weren't the six red mosaic panels on the north façade were arbitrary addition to be deplored?
- If climate control was an imperative ... on the exposed north side of the studio tinted glass louvers were the solution to the sun penetration problem.
- If form follows function, than could a standard window design reflect the diversity of functional spaces within?"³⁵
- Additional debates arose to the detailing of the cornice and introduction of the plinth. The purist International Style architects wished to have the clean cut look of silhouetted boxes, while the more progressive architects wanted to create a link to the Renaissance palazzo.

Ultimately the end decision lay with Fassler as head of the design team, however, the final detailing of the building is said to be an amalgamation of all the teams styles. "It is not a design which, on his own, he would have produced, nor is it typical of his approach to architecture... The building is an organic whole, the result of a holistic process of design, and it is that quality of holism, where the whole is greater than the sum of the parts, that characterises true teamwork."³⁶

The layout of the exterior was as important as the layout of the interior of the building. This was because the building had to work within the existing university context and infrastructure. The west courtyard was designed as an entrance courtyard on the lower ground level. The facings and kerb were laid in an off-white terrazzo finish, while the modular openings on the façade were accentuated with white windows and blue glass mosaic panels (and yellow cills). The paving comprised brushed concrete and bricks, which was emphasised by the lawn with its brick surround. The lawn was raised to aid in drainage problems associated with the hard shale ground of the site.³⁷

On the western façade the concrete grilles and wrought metal balustrades (in blue, silver and pale umber) emphasize the theme initiated in the repetitive window openings. On the surfaces where there are no openings or decorations the manner in which the terrazzo panels were placed reinforces the modular pattern and gives a sense of scale to the façades.

The landscaping surrounding the building appears to be the work of John Fassler, in particular the design of the pool located on the eastern side, "he fought valiantly throughout the process to retain the pool, even when under pressure to cut costs."³⁸ In an article on the university's campus the following was said regarding the fountain. "Apart from the building's

34 - Herbert, G. and Donchin, M. (2013), page 190.

35 - Herbert, G. and Donchin, M. (2013), page 190 to 192.

36 - Herbert, G. and Donchin, M. (2013), page 197 and 198.

37 - Howie, W.D. (1959), page 20.

38 - Herbert, G. and Donchin, M. (2013), page 190.

own pleasing façade, another aesthetic feature has been added to what was rather a dreary corner of the grounds – five fountains which cascade coolly at the entrance to the attractive foyer.”³⁹ It was the intention of Fassler to create a precinct with in the University Campus through the use of the pool, fountains and benches.⁴⁰

The materials and finishes used throughout the building were to fulfil numerous criteria set out by the architectural team.

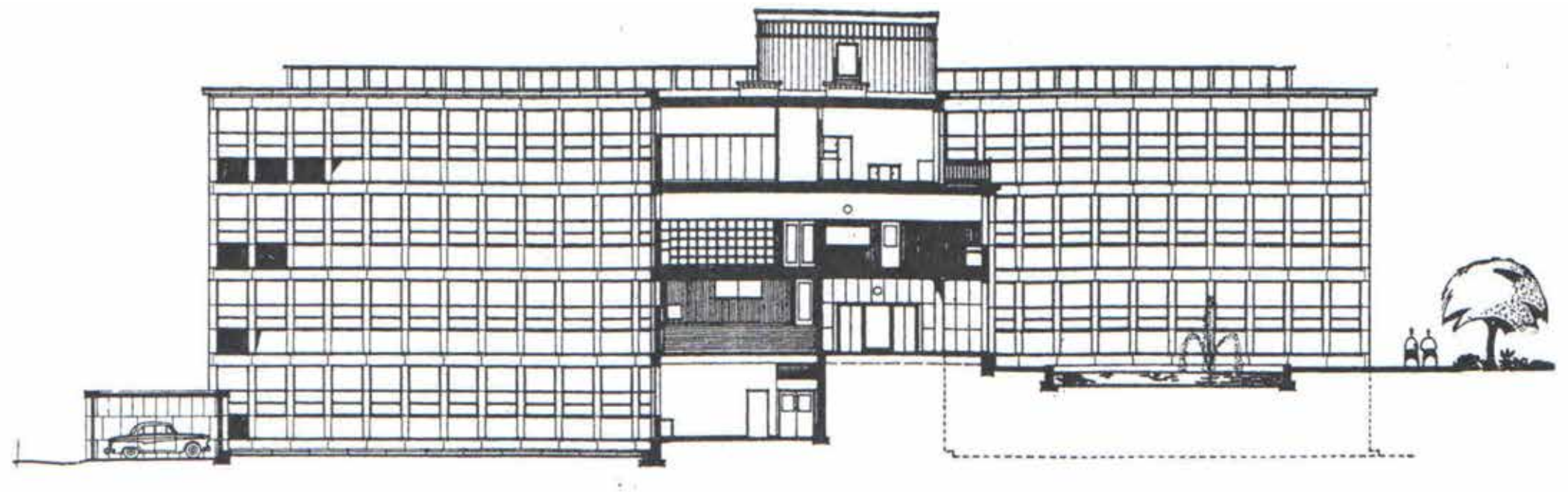


Figure 9 : Original East - West section
(Howie, W.D. (1959), page 19.)

39 - Kirkman, D. (1959), page 8.

40 - Fassler, J. (1959), page 11.

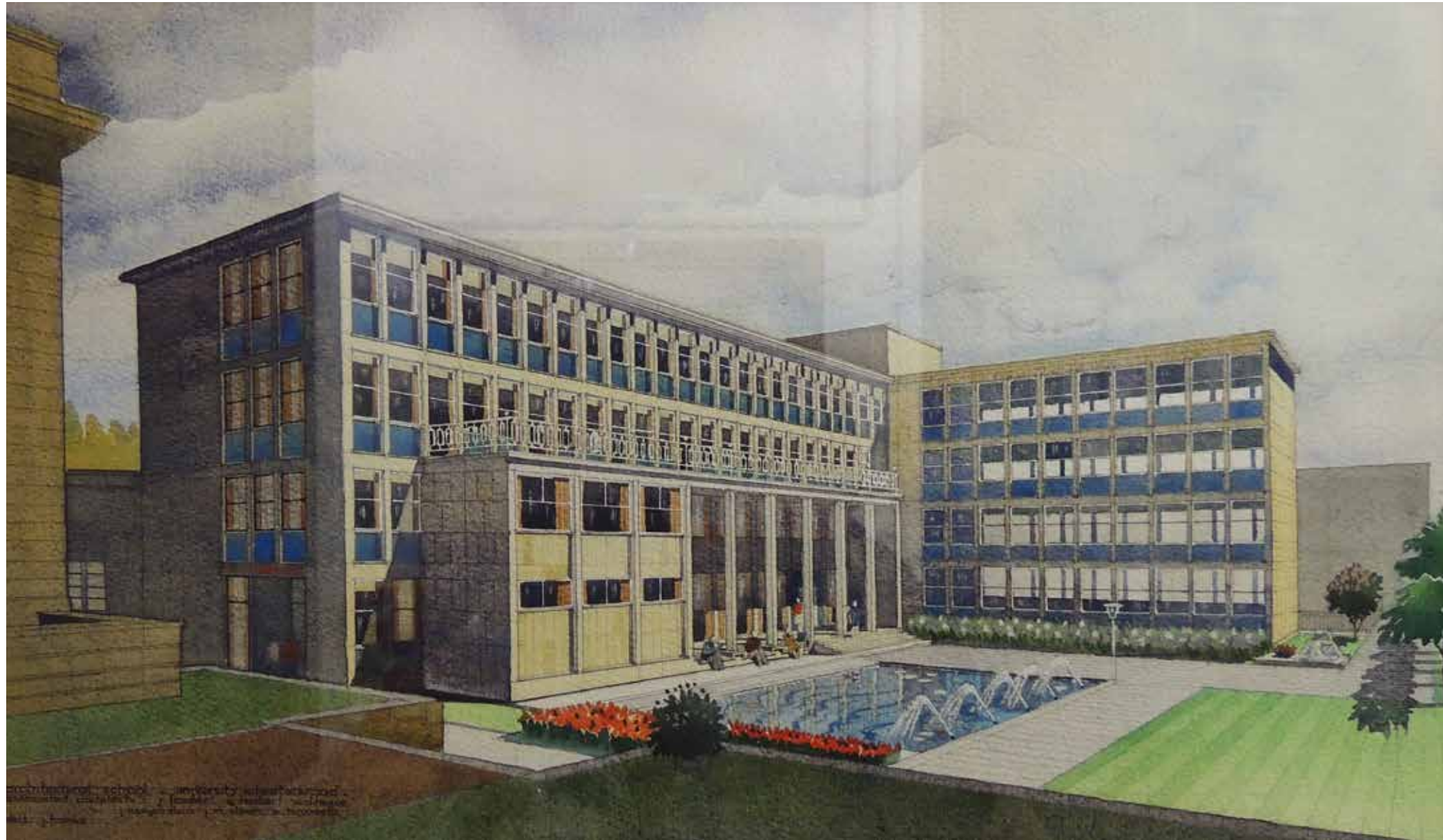


Figure 10 : Perspective watercolour of the John Moffat Building by J. Fassler circa 1955.



Figure 11 : Eastern Facade and Pond. (University of the Witwatersrand Archive - circa 1960s).



The building was required to demonstrate modernity, be suitable for everyday use, have a visual impact, scheme and assist the students and teachers in technical education.

The finishes on the exterior of the building were chosen for their “appearance and durability so as to avoid costly maintenance. The building is sheathed in precast combed terrazzo in a warm off-white shade which retains its colour even when wet. The glass mosaic spandrel panels, generally in a quiet shade of blue, with white windows relieved by the yellow pressed steel cills, form a pleasing contrast”⁴¹ (see figure 12).

Herbert noted that: “the thematic variation of the basic module opening is seen both in the large scale of the openings and in the design of the mosaic panels.”⁴² The offices are demarcated on the northern façade via a group of six red mosaic panels. The library on the east is via a broad mosaic pattern of pale blue lines on a honey coloured base, with dark brown and blue accents, offset by white glazed tiles.

The entrances from the forecourt (east - pond side) and walkway (south) are via gold and silver anodised aluminium doors.⁴³ These were decorated with a sand-blasted patterns in Da Vinci’s Vitruvian man and Le Corbusier’s Modular man.⁴⁴ The floors throughout the building were finished in a ‘Krommine’ marble type linoleum. The foyer or exhibition linoleum floor was designed in a “pattern of light grey squares having sequences of light blue and yellow accents in the centre and separated by dark grey strips, all in a dark blue marginal surround.”⁴⁵ A small kitchen was installed in the crush foyer of the large 300 seater lecture theatre, this had a marble counter and ‘modern fold’ doors set into a travertine frame. The travertine was used to accent other walls with in the exhibition/foyer space.

The finishes in the 300 seater Dorothy Susskind Auditorium were meant to be hardwearing and impressive as it was a public as well as university space. Oak veneer panelling was used for the walls, while the standard tip up seats were constructed out of chrome plated steel frames with ‘Vynide’ covers in a light blue colour. The table tops and the lectern were constructed out of Kiaat, whose honey colour complemented the grey linoleum floor. The oak wall panels were backed by one inch of felt to assist with the acoustics towards the back of the space. The ceiling was specifically shaped curving from east to west and in a reflective material; recessed louvered lights were inter-dispersed across its surface; these were placed on a dimmer switch to provide various intensities of lighting during presentations and enable students to take notes during lectures. The main lighting was provided by “rear cove and brackets, with spots for the front wall”.⁴⁶ A ‘Nucite’ tempered glass chalk board sprayed with enamel (aluminium oxide abrasive) and fixed double screen made up the front of the lecture room with grills to facilitate the artificial ventilation.

The two other theatres were treated similarly, except that the seats were in a darker blue colour for the 80 seater and grey for the 40 seater. Corresponding With these seating colour changes the floors in the middle (80 seater) lecture room was a grey with asphalt tiles, while the tiles in the 40 seater were a tan colour.

The lettering used throughout the building in particular the foyer and entrances was “specially designed and carried out in

Figure 12 (opposite page): Eastern Facade and Pond circa 1965 - curtains in foyer and entrance lettering visible. (University of the Witwatersrand Archive).

41 - Howie, W.D. (1959), page 20.

42 - Herbert, G. and Donchin, M. (2013), page 196 and 197.

43 - Howie, W.D. (1959), page 21.

44 - Herbert was charged with finding appropriate images or symbols to link the Modern Movement, Classical Greek references, the Renaissance principles and the School’s inspiration Le Corbusier. He achieved this through the introduction of mosaics as well as images of the Modular and Vitruvian man.

45 - Howie, W.D. (1959), page 22.

46 - Howie, W.D. (1959), page 22.

47 - Howie, W.D. (1959), page 23.

gold anodised aluminium with enamel inserts in various colours according to the setting. The same lettering design was skilfully applied by the sign writer to the glass direction board. Elsewhere the door serial numbers and name panels are in cream on transparent plastic.”⁴⁷

Curtains were used extensively throughout the building. The foyer or exhibition space has soft lace ones, while certain areas had custom dyed linings (to match the wall colours) and the House of De Haes of Holland and David Whitehead curtains prepared by John Piper.⁴⁸

The main circulation was via a centrally placed circular staircase located where the junction of the east west building met that of the north south (intersection point of the T-shape). Here the walls of the staircase were treated with a “special stippled plastic finish to avoid disturbing reflections otherwise apparent.”⁴⁹ The stairs were a combination of cast in situ treads and precast risers, all in a grey-green terrazzo. Located at the base of the staircase was a specially designed mosaic by Cecily Sash.⁵⁰ The staircase is said to be one of Fasslers’ features within the building, this along with the columns and their vertical stripes, derived from a visit to the Allianz Building in Munich.

Fassler designed the tables in the reading areas of the Library, with Tomaselli designing the built in furniture in the staff offices (see figure 13). The various components of the library were constructed out of solid wood. The south wall was finished in slatted oak panelling and all the book shelves (also oak) were adjustable.

The shelves were designed to accommodate 10 000 volumes, many of those large folios. The tables were of a Sapele Mahogany whose colour was complemented by the dark blue upholstered chairs. An additional feature was the sound absorbent acoustic ceiling tile positioned above the space that was used as a reading area; the fluorescent light fittings were chosen for their dustproof properties. The columns within the library space were treated with the blue and white glass mosaic tiles and the floor in a complementary blue linoleum. Built in furniture was also designed and constructed out of Oak and Sapele Mahogany in the staff offices. All the wood was treated with cellulose sanding sealer and a wax finish.⁵¹

The materials museum was specifically designed to assist in teaching students about the various materials commercially available. These were donated by manufacturers and suppliers and placed within a room located on the second floor, it was panelled in a pale grey peg-board (with Kiat cornices) and contained matching shelves of varying sizes that were adjustable (‘sparring’ fittings were used).

The end walls of the studios were constructed out of face brick with different colours and bonds used in the various studios. Additionally the drawing desks were designed and built specifically so that they corresponded with the modular window mullions in the studios. Fluorescent fittings were placed in continuous strips to create even lighting over the work spaces. The studios on the second floor were used for the art students and contained windows located on the southern side of the building. Additional light came from south facing saw-tooth roof lights, which helped to illuminate the work

48 - Howie, W.D. (1959), page 23.

49 - Howie, W.D. (1959), page 22.

50 - Cecily Sash (1924 -) is a painter and graphic artist of still life and abstract pictures. She works predominantly in paint, pencil, charcoal and etchings. Her work in the John Moffat was done early in her career after she had studied at various institutions including the University of the Witwatersrand.

51 - Howie, W.D. (1959), page 22.

52 - Howie, W.D. (1959), page 24.

area. “The structure comprises steel girders and frames to which the windows are fixed, carrying precast concrete units forming the ceiling and sloped surfaces. The light from the small windows on the north elevation is controlled by individual shutters. Individually switched fluorescent lights give artificial lighting control.”⁵² The crit rooms had a special absorbent ceiling panel and the same fluorescent lighting as the studio spaces.

The majority of the walls were finished in an eggshell enamel, while the walls in the craft rooms were finished with a P.V.A paint to assist with the cleaning of these surfaces. The choice of colours was debated by the architects and each space was decided upon based on its own merits. The majority of colours were mixed on site, resulting in numerous custom shades and “while the range of applied colours is considerable the effect is never aggressive.”⁵³

A survey of the finishes and their condition can be found in chapter four.

For the design team modernism and technology meant the same thing, throughout the building this concept was seam-

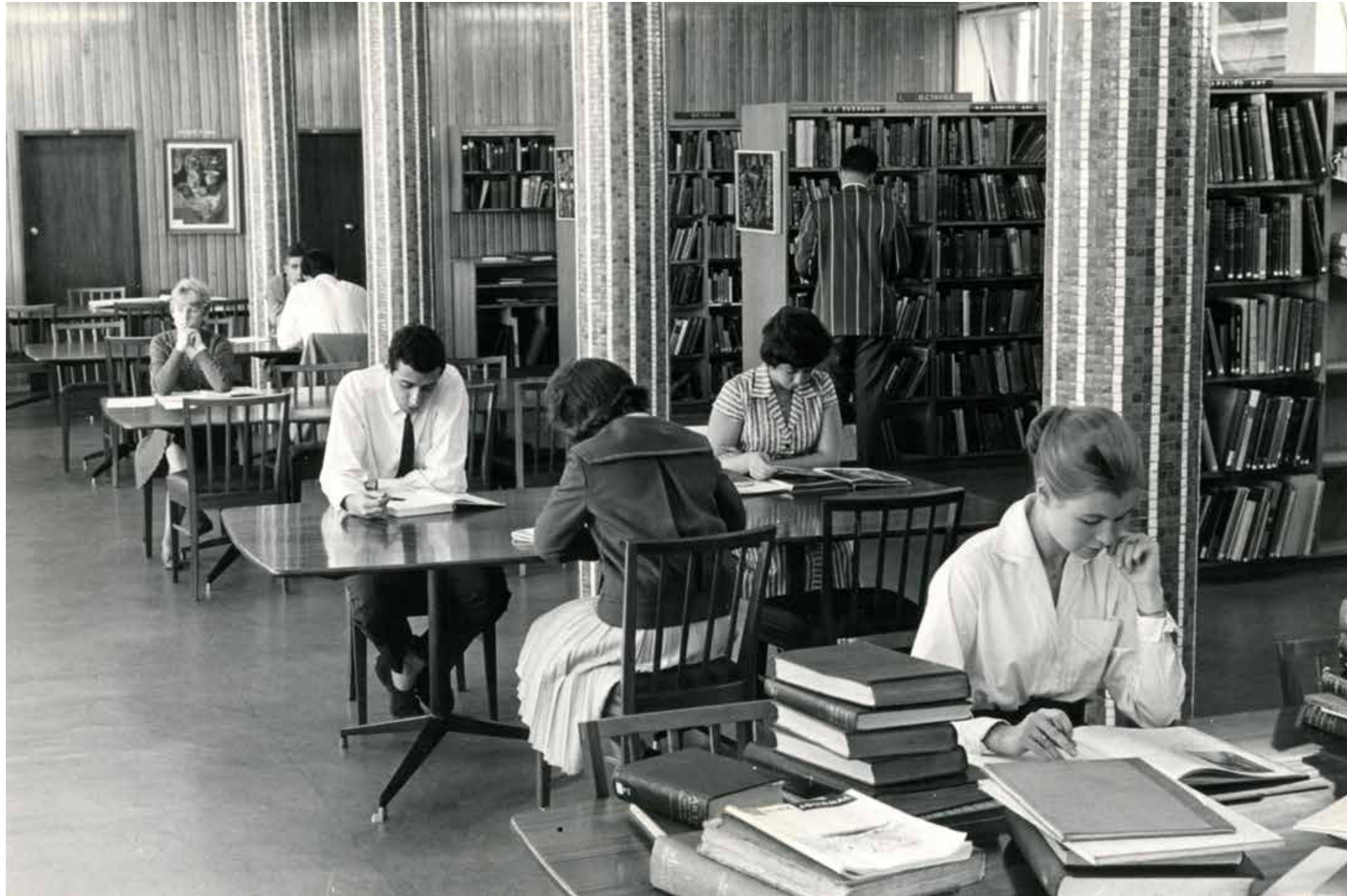


Figure 13 : Internal view of Library circa 1960. (University of the Witwatersrand Archive).



Figure 14 : Internal view of Second floor art studio. (Howie, W.D. (1959), page 24).



lessly integrated into the design.

Some technically innovative building techniques were used throughout the structure. All three lecture rooms were required to be fully equipped for projections, have automatic black-out facilities and mechanical ventilation. “Standard Liesegang and 35mm Leica projectors with long-throw lenses provide various slides and book illustrations. The largest theatre has a Filomsound 16 mm cine projector, wire dual speakers, while an Bell and Howell silent projector is available for the smaller rooms.⁵⁴ The lecture theatres were meticulously planned as ‘machines for learning in’ the architects having learned much from the cumulative experience of Escom House, the Central Block and the Hillman Building.”⁵⁵

The blackout blind system within the Dorothy Susskind Auditorium was a result of the architects wanting a space that could benefit from having natural lighting and not permanent darkness or electrical lighting as the Great Hall. The paneling was designed to be removable so to enable access behind to service the blinds. Due to this system the room required artificially ventilated and heating, this was achieved via grills placed in strategic positions around the seating area. The lectern was fitted with all controls to animate the blinds, ventilation, lights, speakers and 16 mm cine projector. Additionally an intercom was installed to communicate with the projection room at the rear of the lecture room.

On the northern façade the design team used tinted glass louvers, that were set deep within the recess of the windows to assist in the climatic control of sun entering into the building. The louvers evened out the light intensity throughout the rooms in addition to controlling the sun penetration. By making the louvers out of glass they allowed unobstructed views northwards and by setting them into the wall they allowed the façade to appear unobstructed (as well as protecting the glass louvers from hail).⁵⁶

For the Crit Rooms a loosely compressed chip board with reduce glue content was created this comprised an attractive panel face and soft veneer to assist with the pinning up of work in this area. It was named and marketed as ‘Ray-décor’.

A special lock and master key system was used throughout the building; this allowed access to all staff communal areas as well as faculty specific spaces. “The inconvenience of having to open a locked door while carrying lecture material or a brief case lead to the use of the key-in-the-knob ‘Schlag’ equipment. Some 150 ‘Novo’ locksets, many with ‘Riviera’ escutcheons were used. Special ‘Assa’ swing-door locks were used on the theatre and library doors.”⁵⁷

The main technical innovation appears to have been the under floor heating that was designed by Howie. In order for the most flexibility to be archived in the various spaces it was decided to use electrical under floor heating throughout the building. This allowed furniture to be placed in numerous configurations, heating would be felt throughout a space and additionally spaces could be heated individually (not centrally) enabling the offices to be heated during the vacation periods. It was decided that the floor heating cables be limited to 150°C, this was based on research carried out on concrete slab exposure to heat. The electrical consultants performed calculations and “on final installation it was found that tem-

Figure 15 (opposite page): Material library on Second floor (Howie, W.D. (1959), page 26).

54 - Howie, W.D. (1959), page 25.

55 - Herbert, G. and Donchin, M. (2013), page 193 and 194.

56 - Herbert, G. and Donchin, M. (2013), page 191.

57 - Howie, W.D. (1959), page 25.

58 - Howie, W.D. (1959), page 26.

peratures were as calculate while providing excellent comfort conditions in the building and not causing ceiling cracks.”⁵⁸

The system was the non-withdrawable kind where wires/cables were placed directly onto the floor slabs (via a system devised on site) and covered with a minimum of 30 mm of screed. “The cables were taken to terminal boxes build into the outside walls at skirting level at intervals of approximately 15 feet (4.5 meters). The terminal boxes were connected to distribution boards by means of rubber insulated wire in conduits cast into the concrete slab. At the distribution boards miniature circuit breakers were used. The boards were in turn connected by means of paper insulated cables to the transformer supplying the heating system, located in the basement substation.”⁵⁹ In order for the installation to be effective, the area to be heated on one circuit had to be clear, the wires laid and immediately the screed placed over. By using the system of various circuits, if a future problem arises only that area needs to be ‘chipped’ out and the wires replaced.

The floor heating system was found to be very effective and no cold draughts were experienced across the floors. However, in the staff offices and Art studios (where nude models were used) additional supplementary fan heaters were installed.



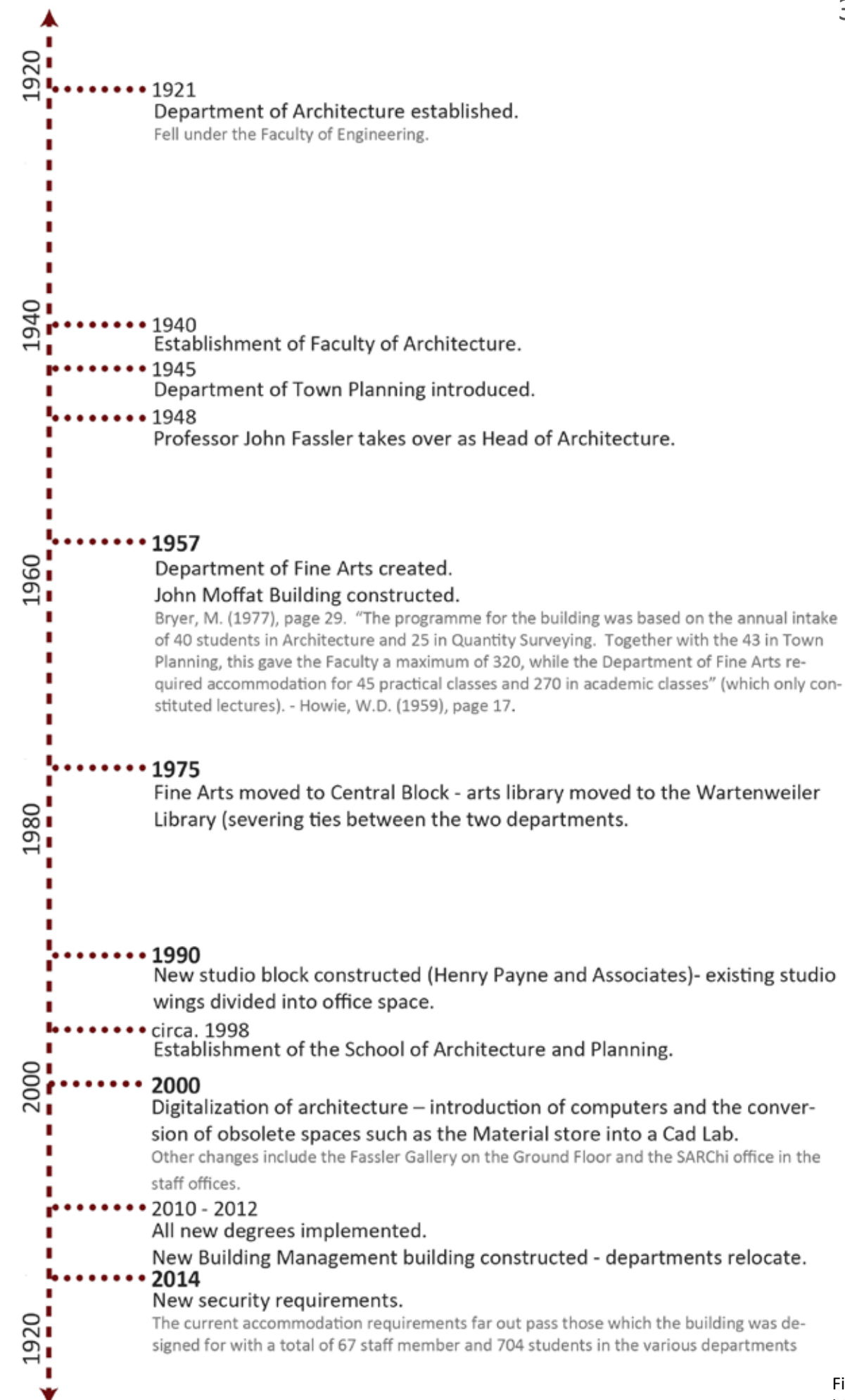


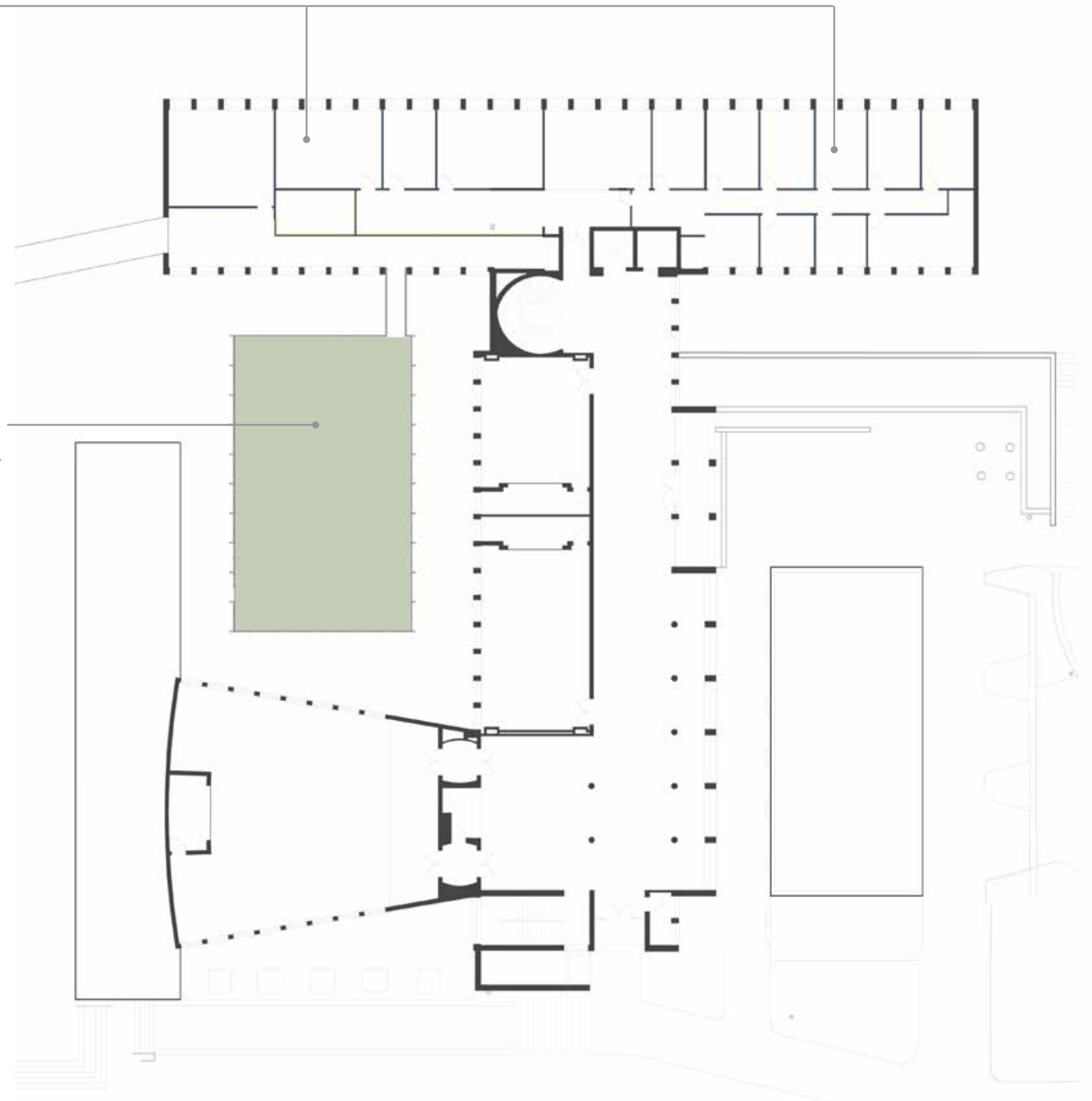
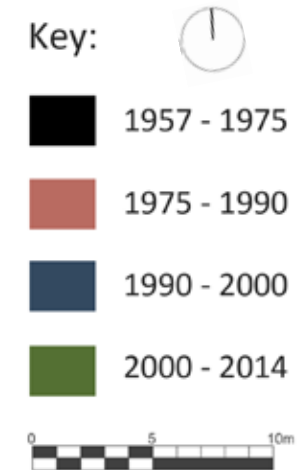
Figure 16 (opposite page): Entrance / exhibition foyer - 2013.



Basement (Lower Ground) Floor Plan depicting four phase of change.

open studio spaces parti-
tioned and converted into
offices

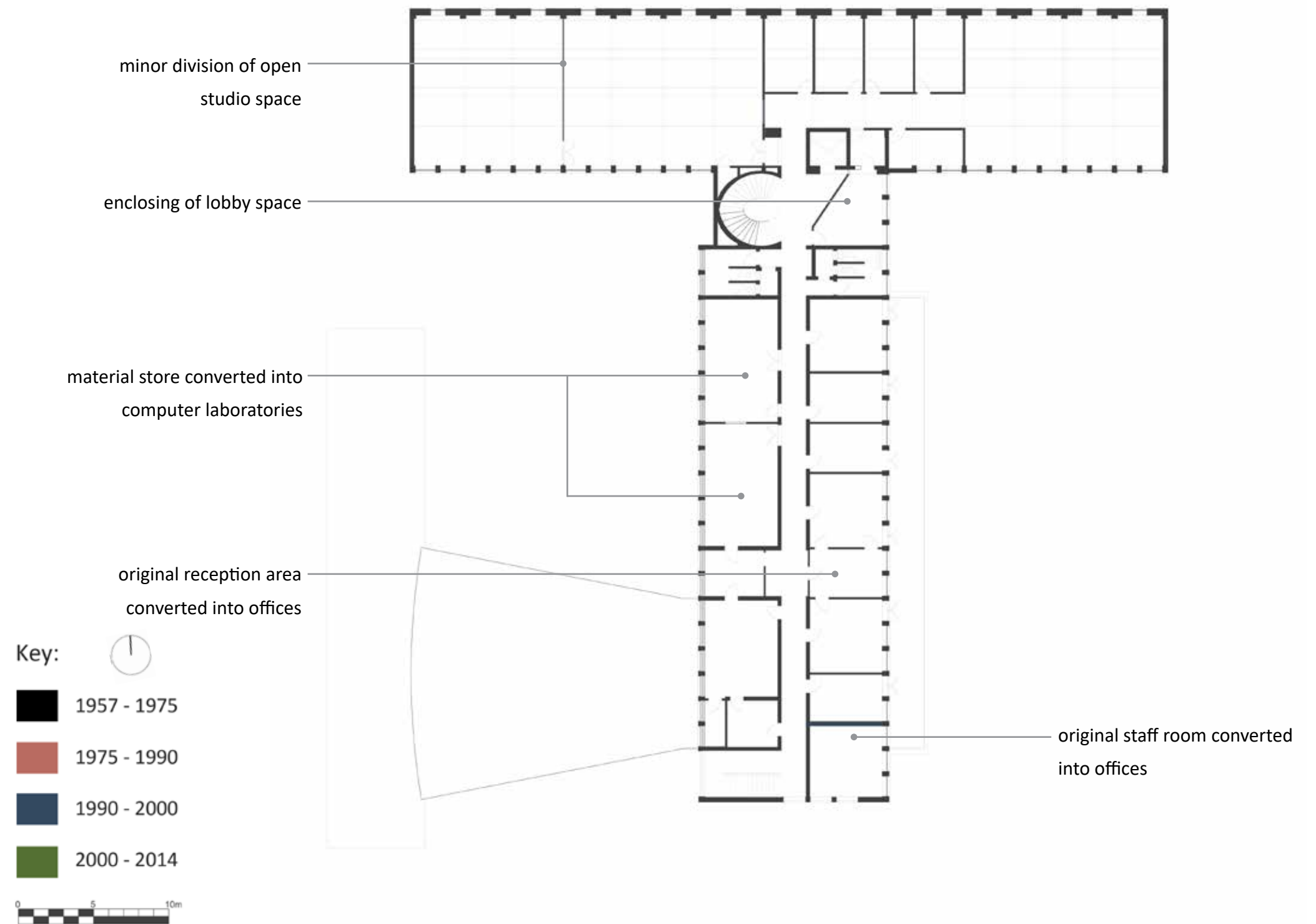
prefabricated structure
extends to ground floor



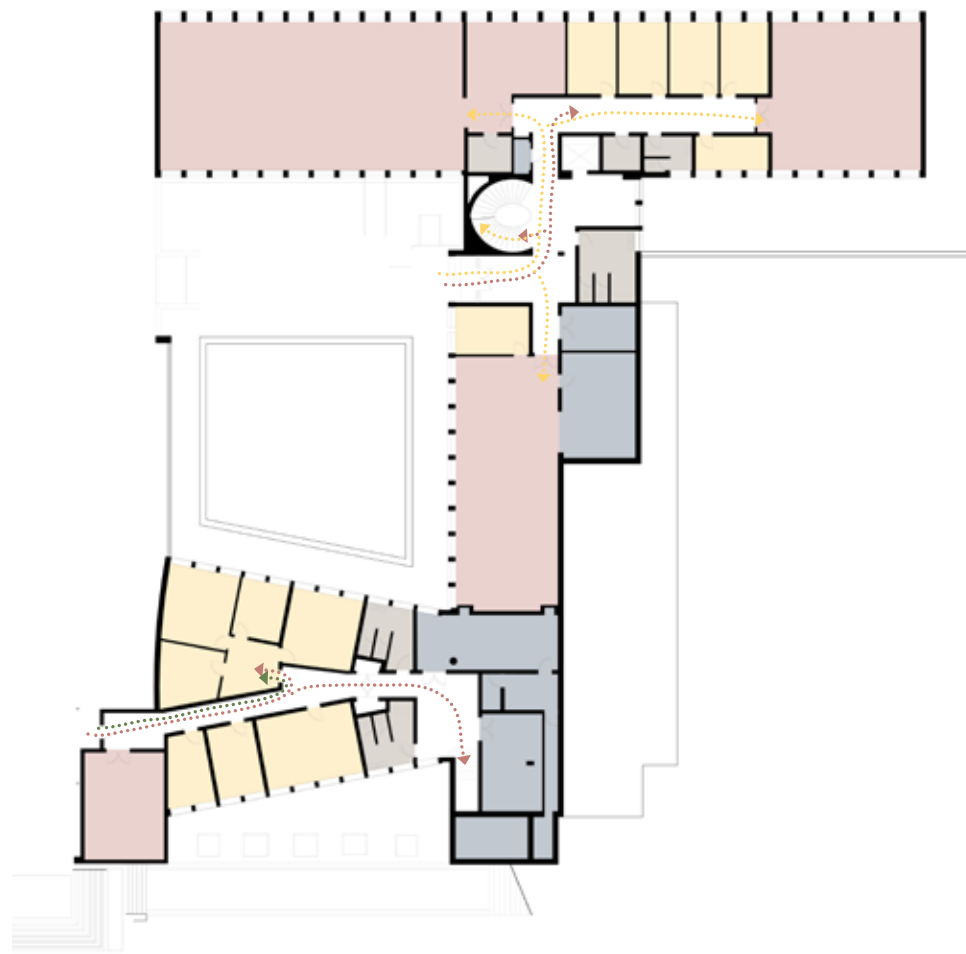
Ground Floor Plan depicting four phase of change.



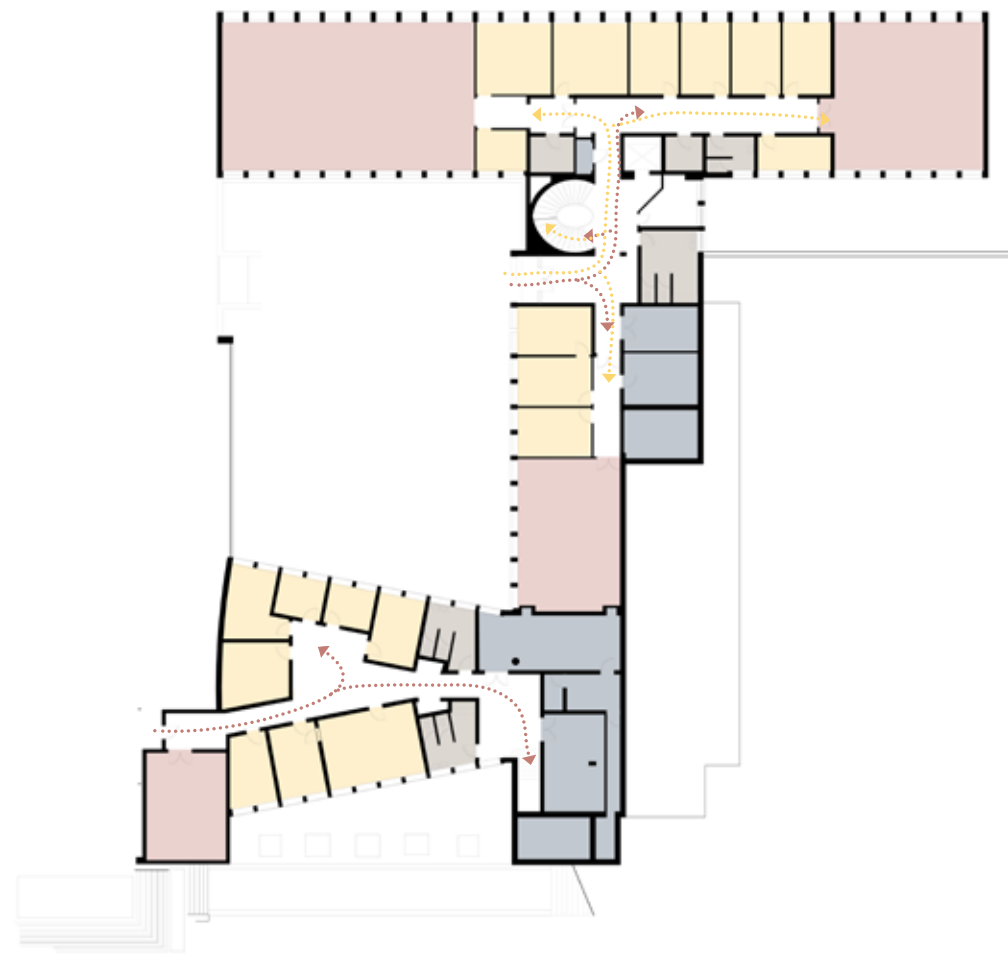
First Floor Plan depicting four phase of change.



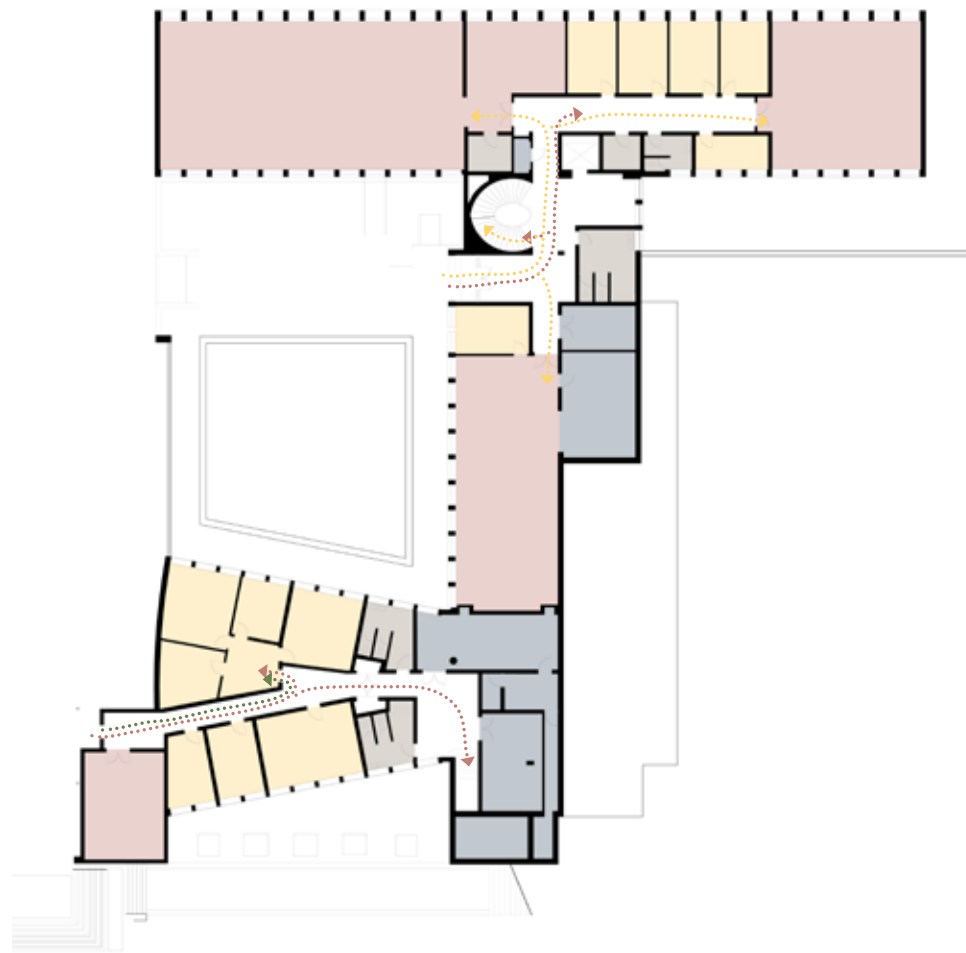
Second Floor Plan depicting four phase of change.



1957 - 1975 Basement Floor Plan



1990 - 2000 Basement Floor Plan



1975 - 1990 Basement Floor Plan



2000 - 2014 Basement Floor Plan

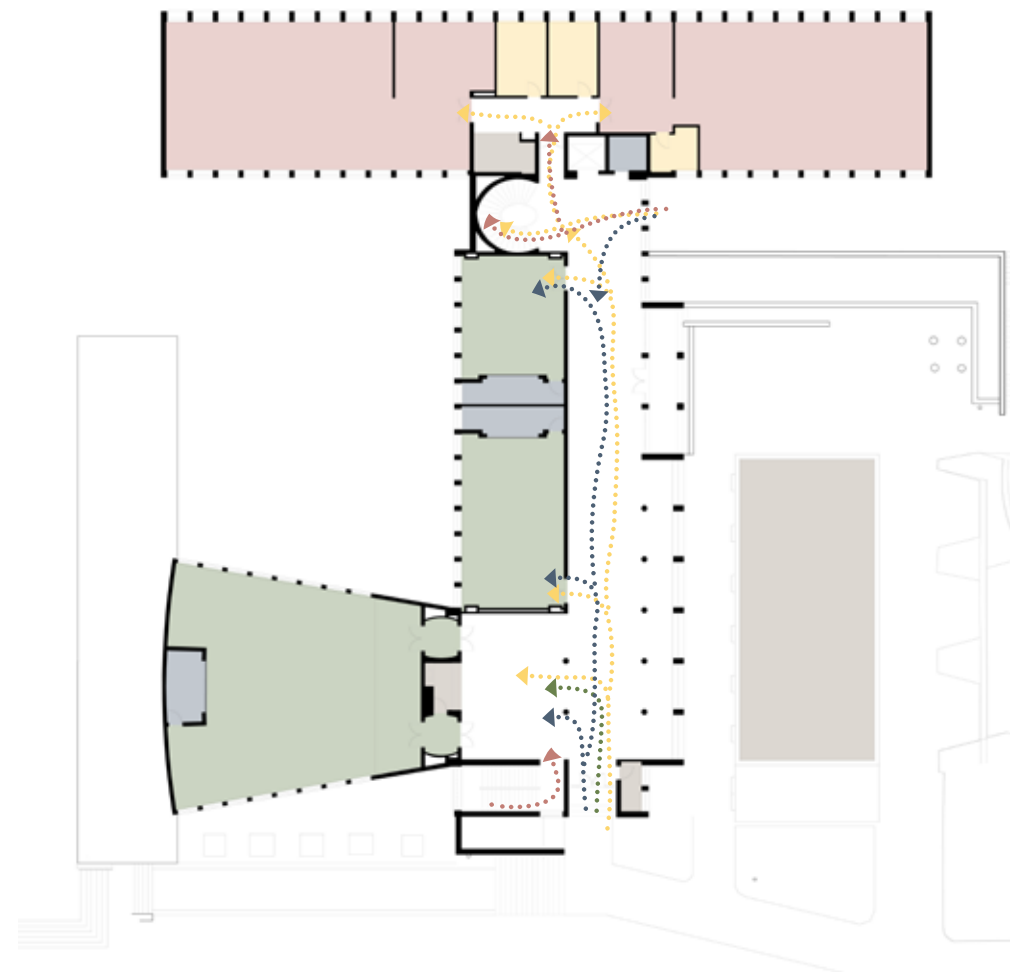
Users Circulation:

- Department Students
- Staff
- University Students
- Visitors

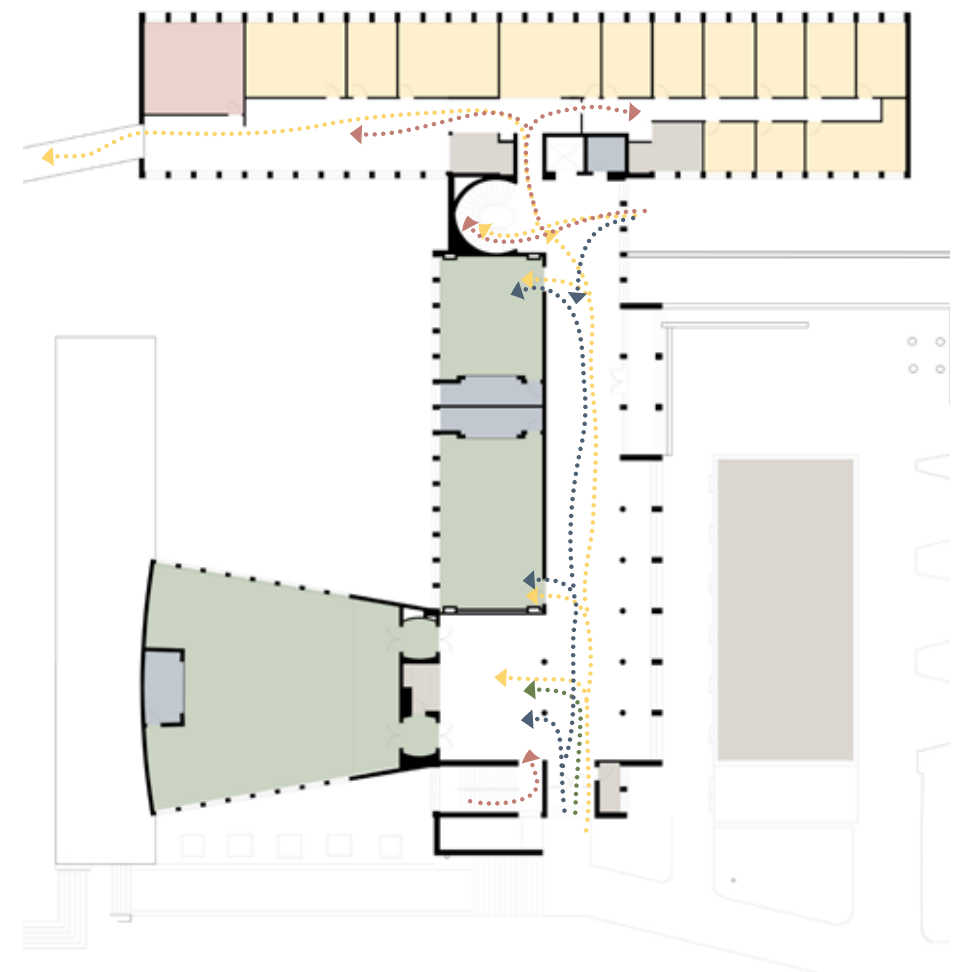
Functions:

- Offices
- Studios / Meeting rooms
- Equipment
- Lecture rooms
- Other

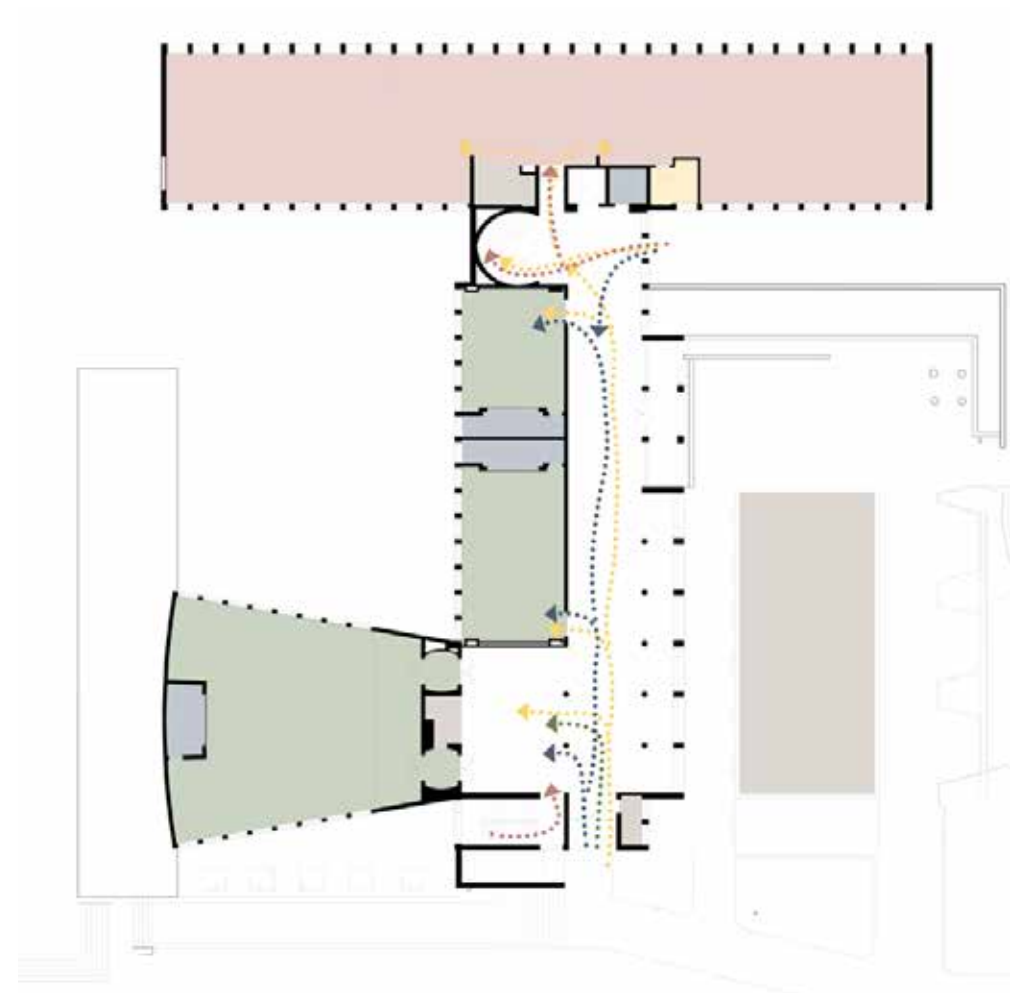




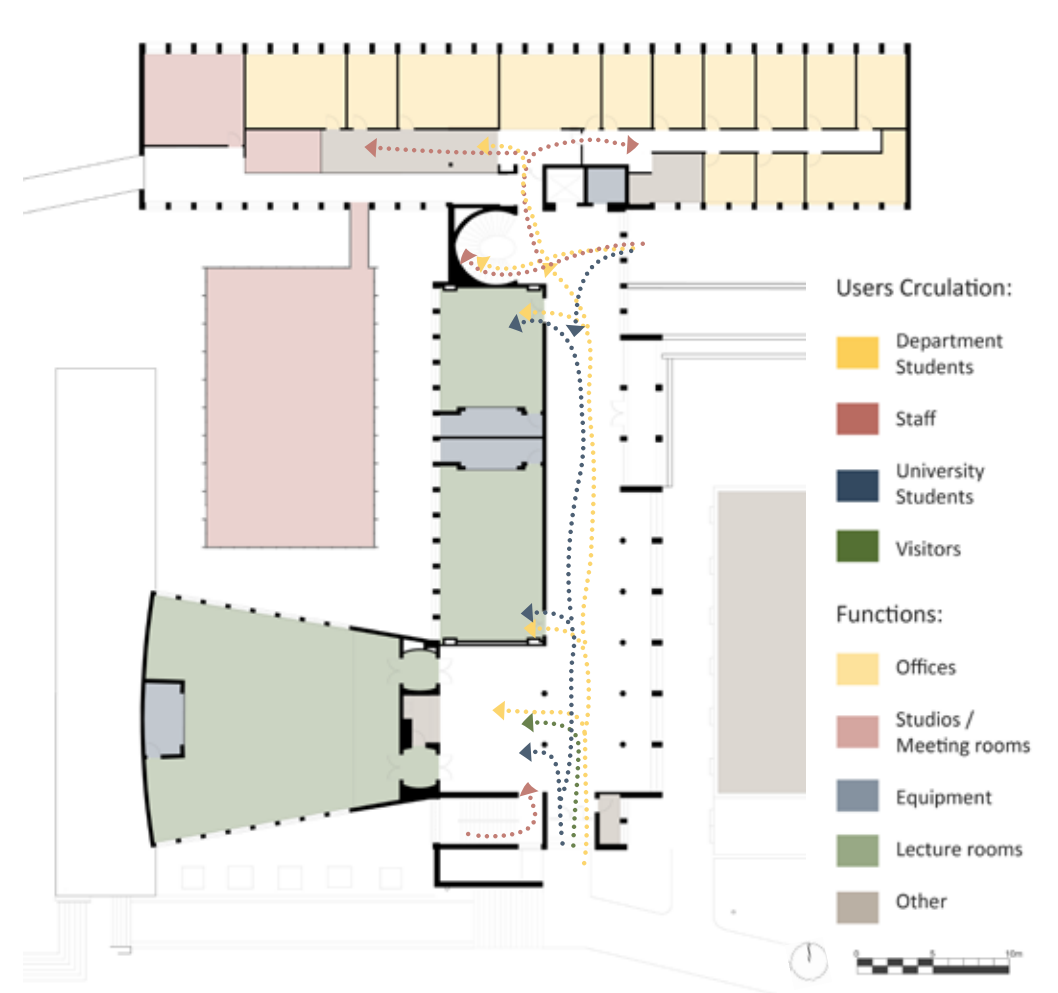
1957 - 1975 Ground Floor Plan



1990 - 2000 Ground Floor Plan



1975 - 1990 Ground Floor Plan



2000 - 2014 Ground Floor Plan

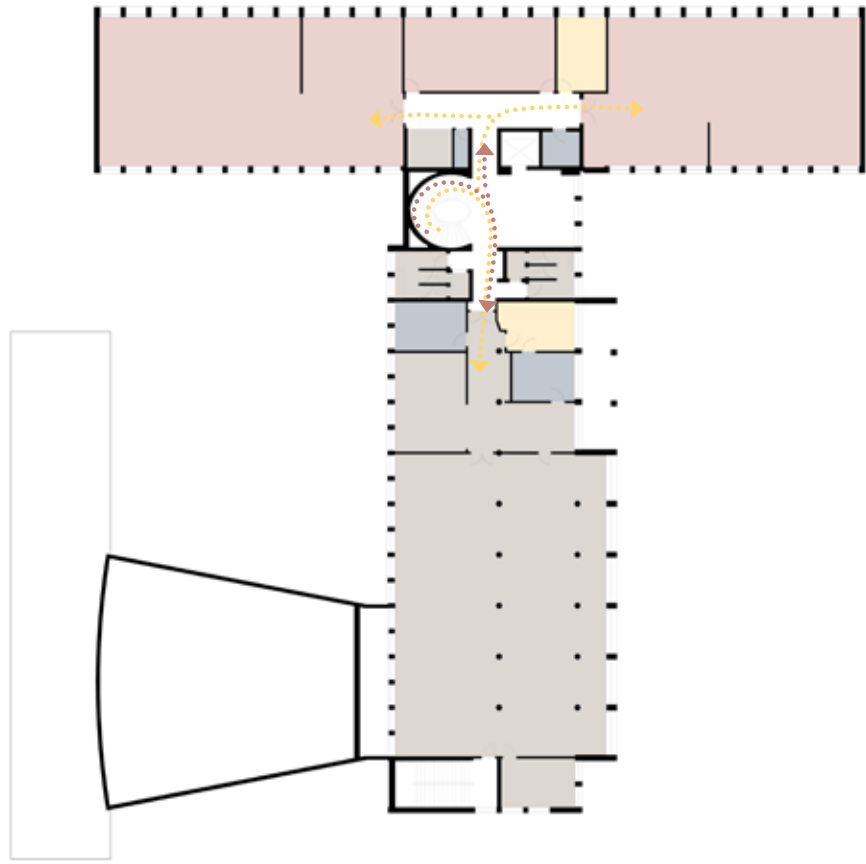
Users Circulation:

- Department Students
- Staff
- University Students
- Visitors

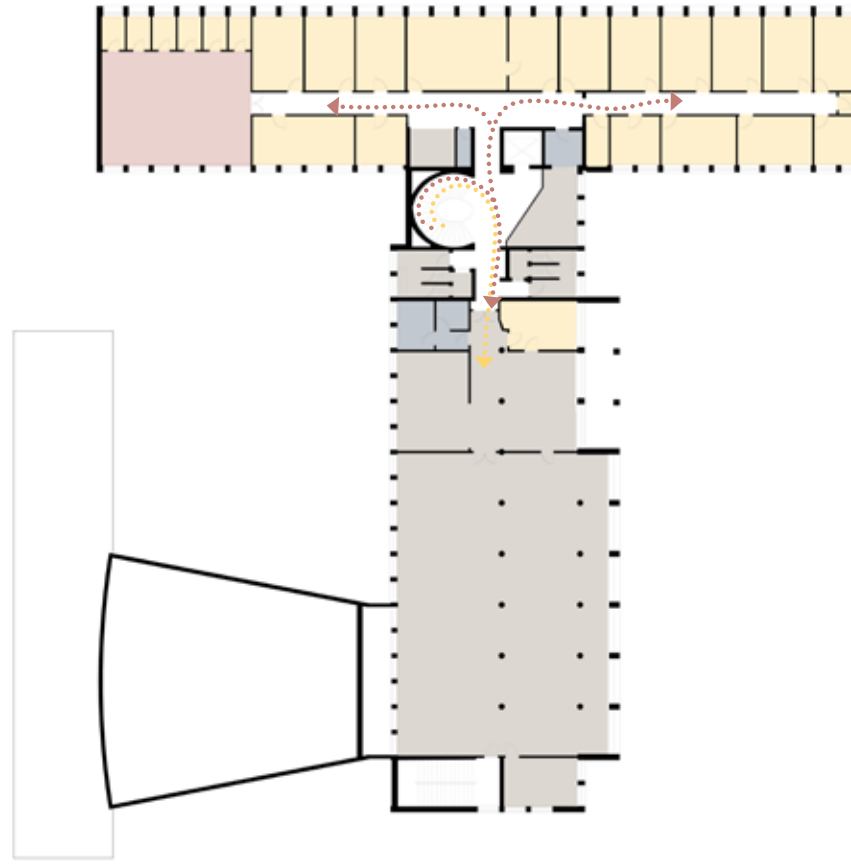
Functions:

- Offices
- Studios / Meeting rooms
- Equipment
- Lecture rooms
- Other

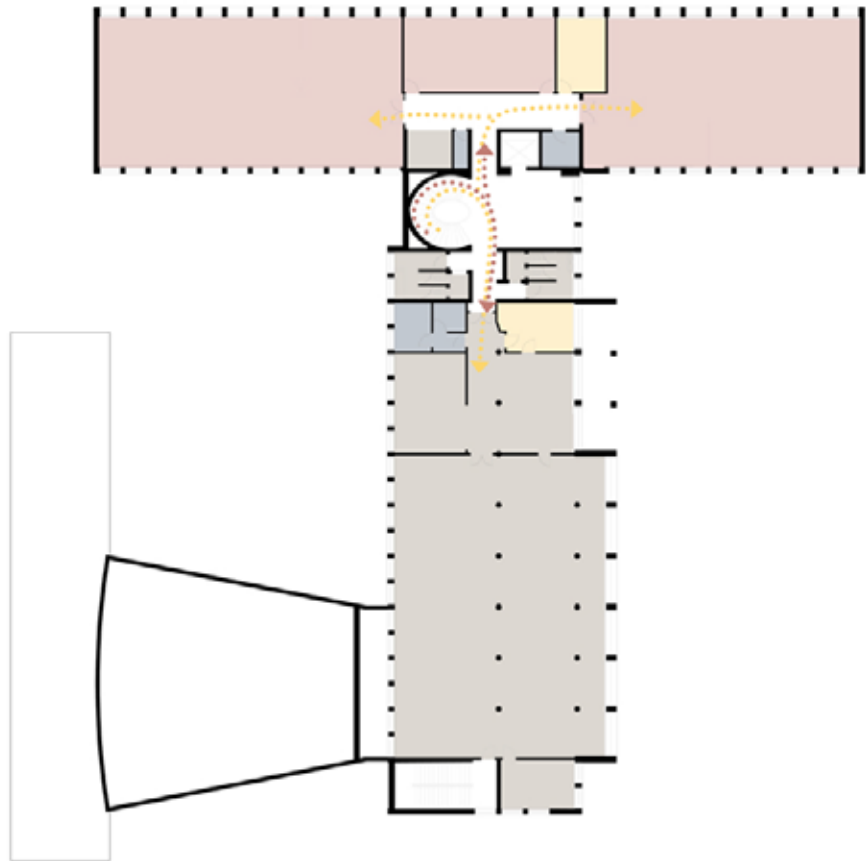




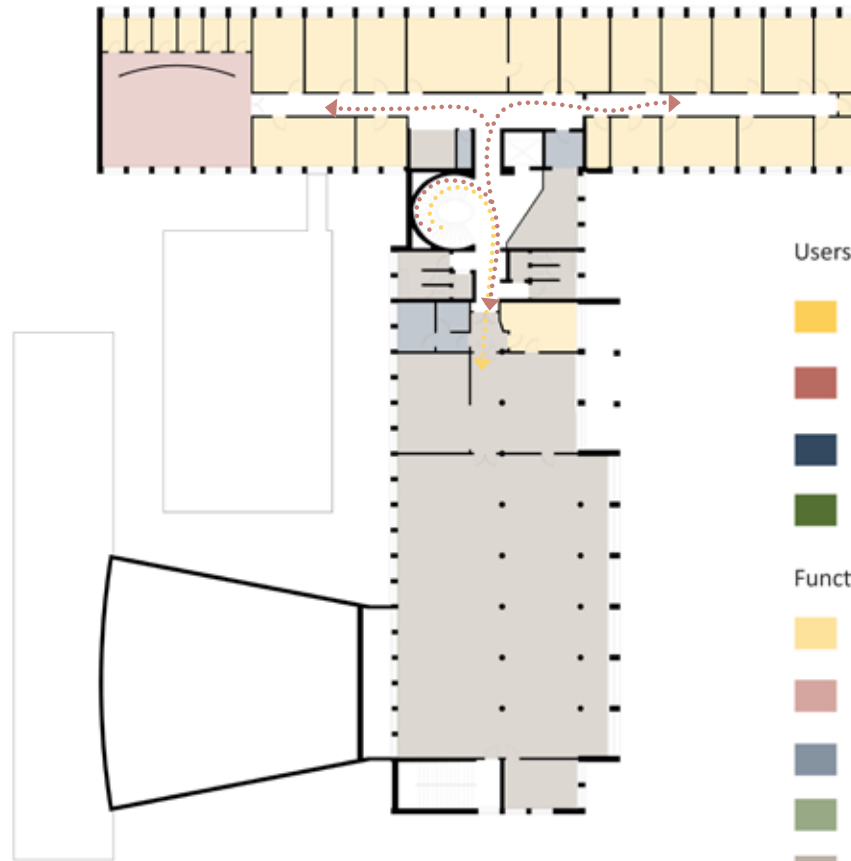
1957 - 1975 First Floor Plan



1990 - 2000 First Floor Plan



1975 - 1990 First Floor Plan



2000 - 2014 First Floor Plan

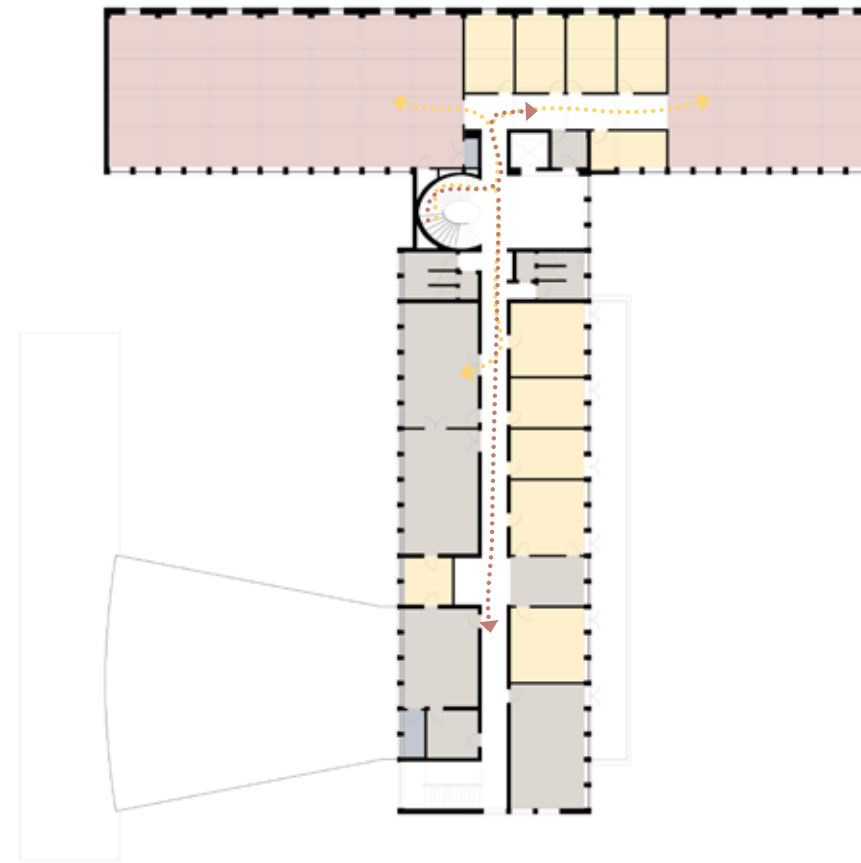
Users Circulation:

- Department Students
- Staff
- University Students
- Visitors

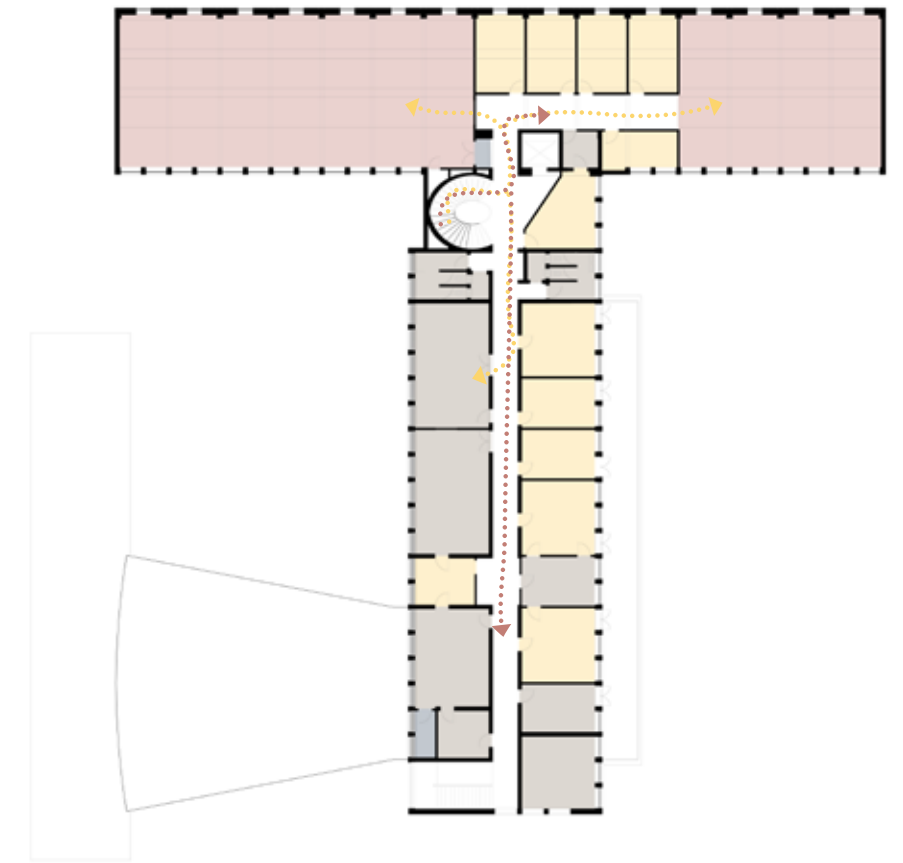
Functions:

- Offices
- Studios / Meeting rooms
- Equipment
- Lecture rooms
- Other

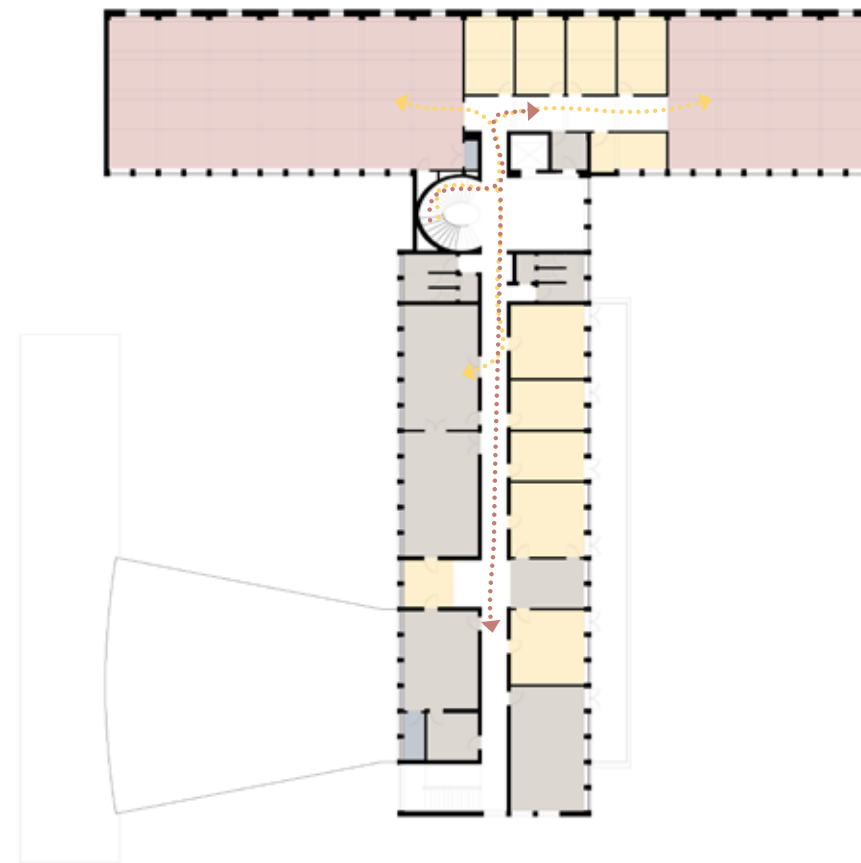




1957 - 1975 Second Floor Plan



1990 - 2000 Second Floor Plan



1975 - 1990 Second Floor Plan



2000 - 2014 Second Floor Plan

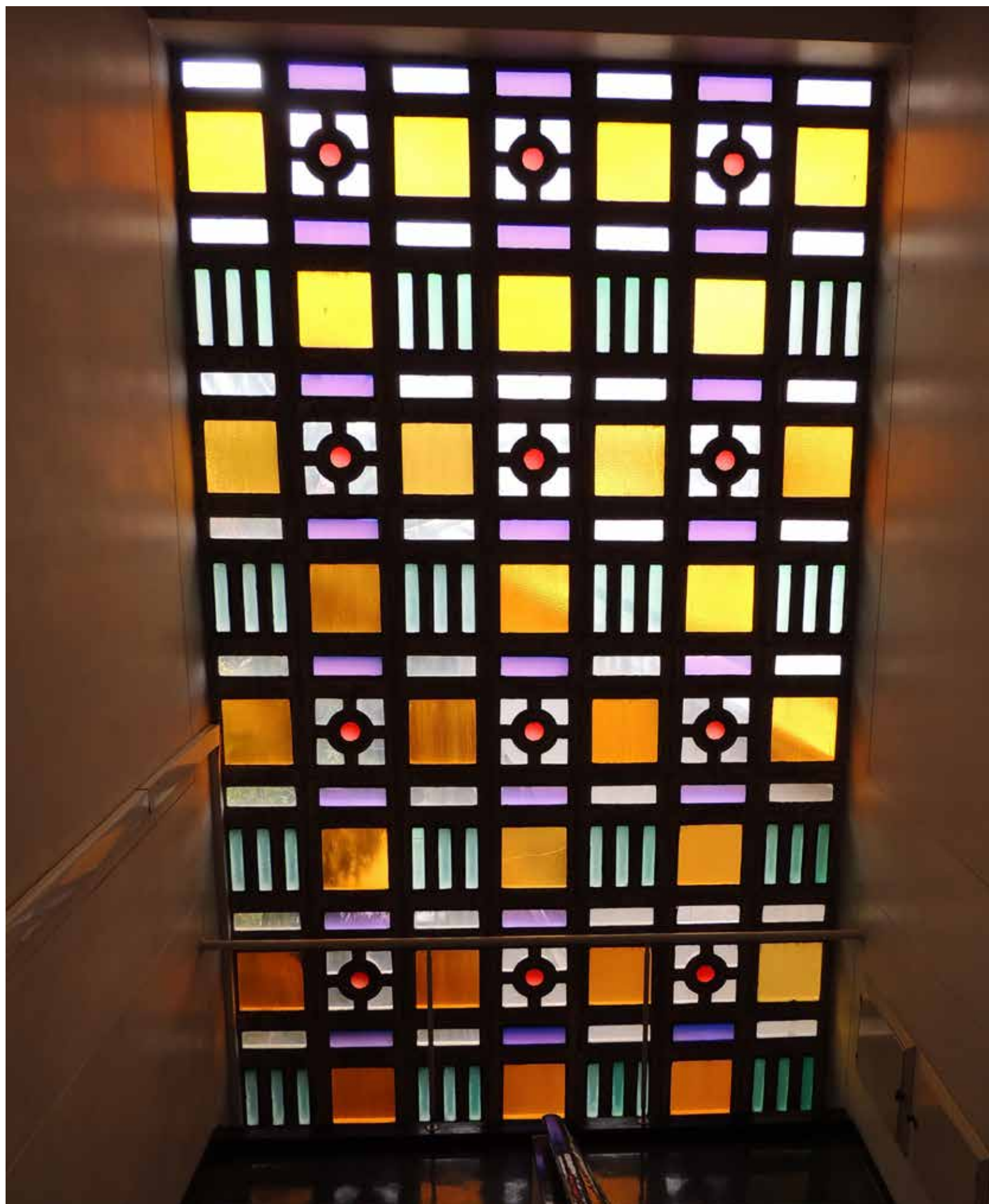
Users Circulation:

- Department Students
- Staff
- University Students
- Visitors

Functions:

- Offices
- Studios / Meeting rooms
- Equipment
- Lecture rooms
- Other





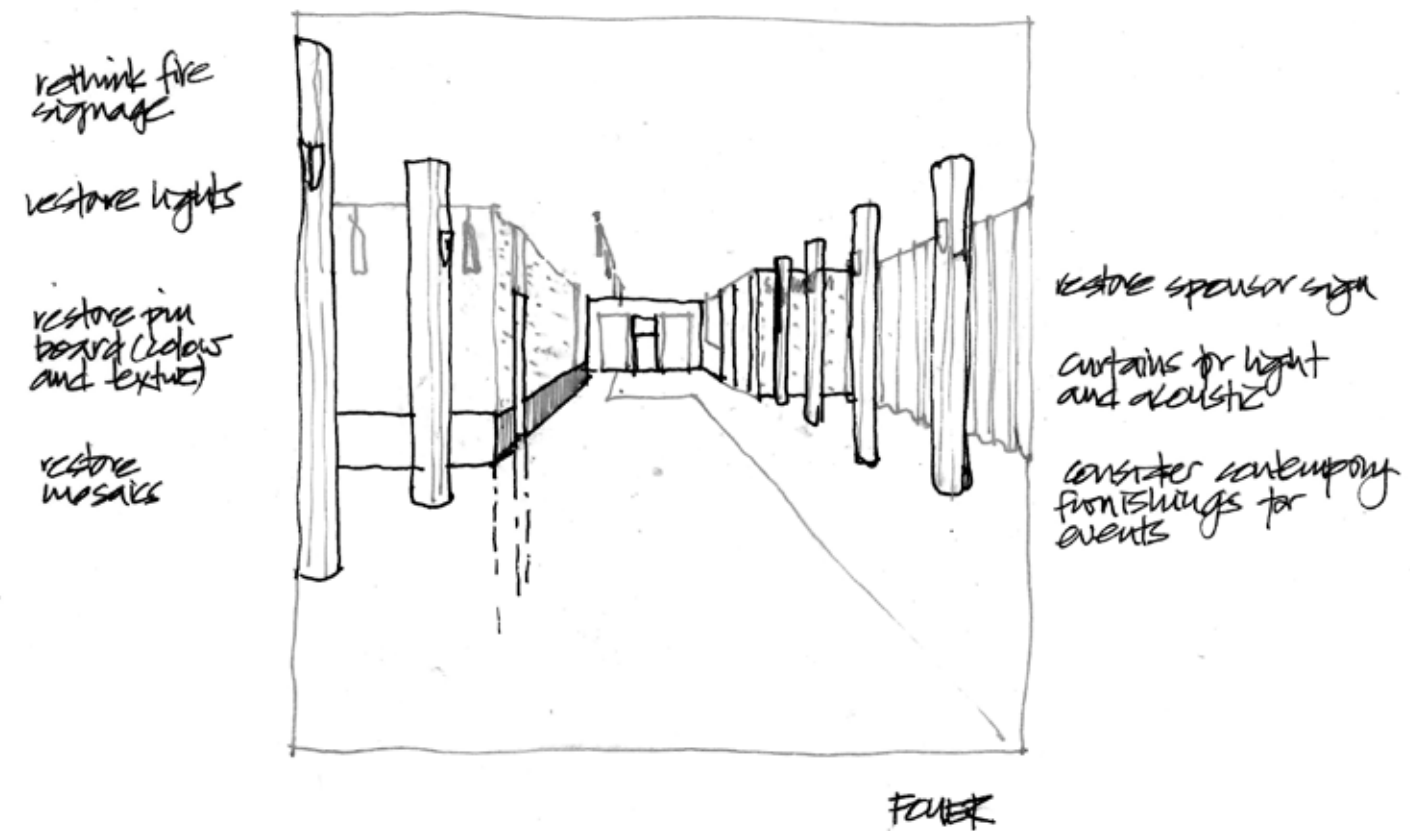
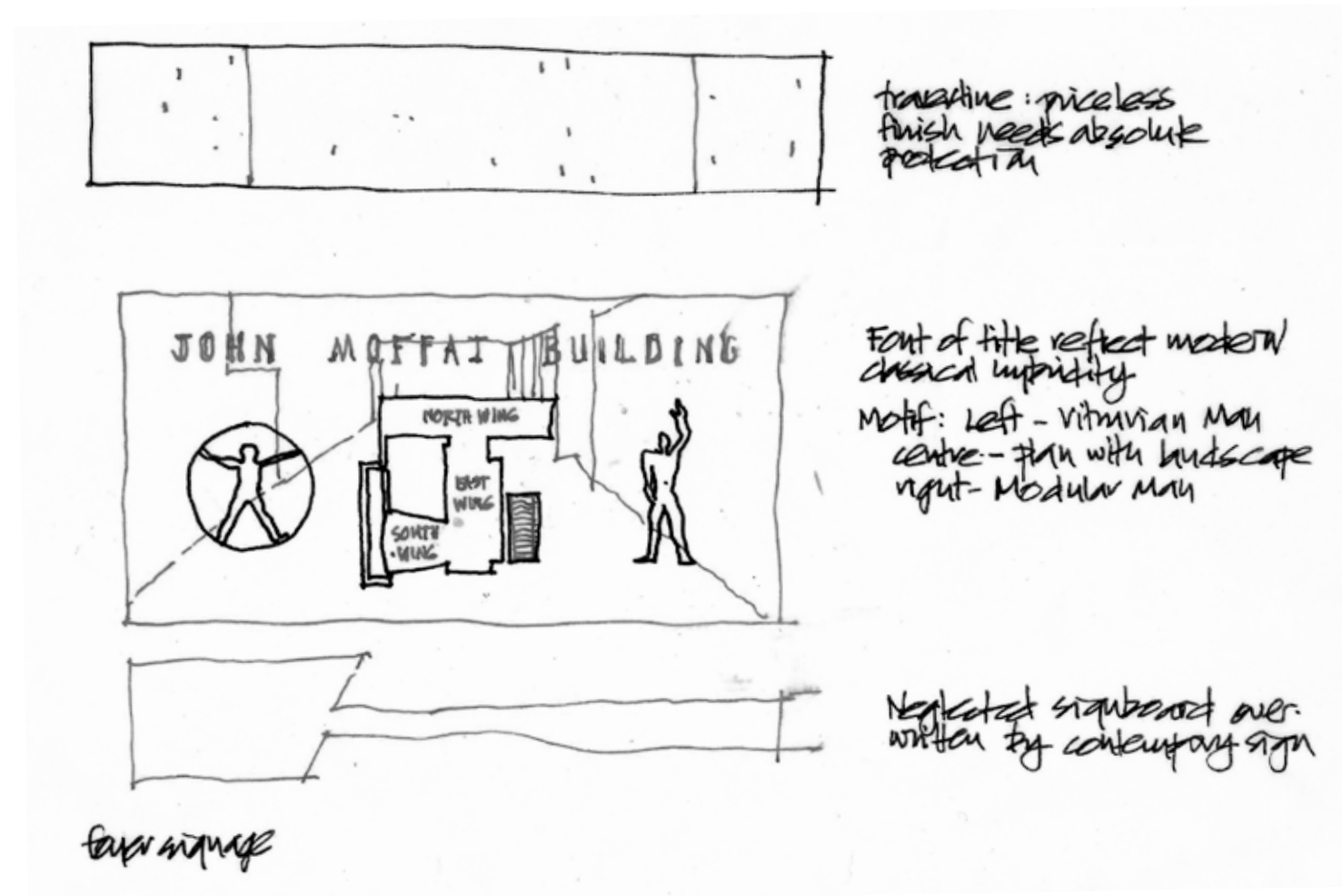


Figure 17 (opposite page): Southern stair well - breeze soleil glass window. (© Candice Keeling 2013).

Figure 18 and 19 : Images by H. le Roux of materiality in John Moffat foyer.

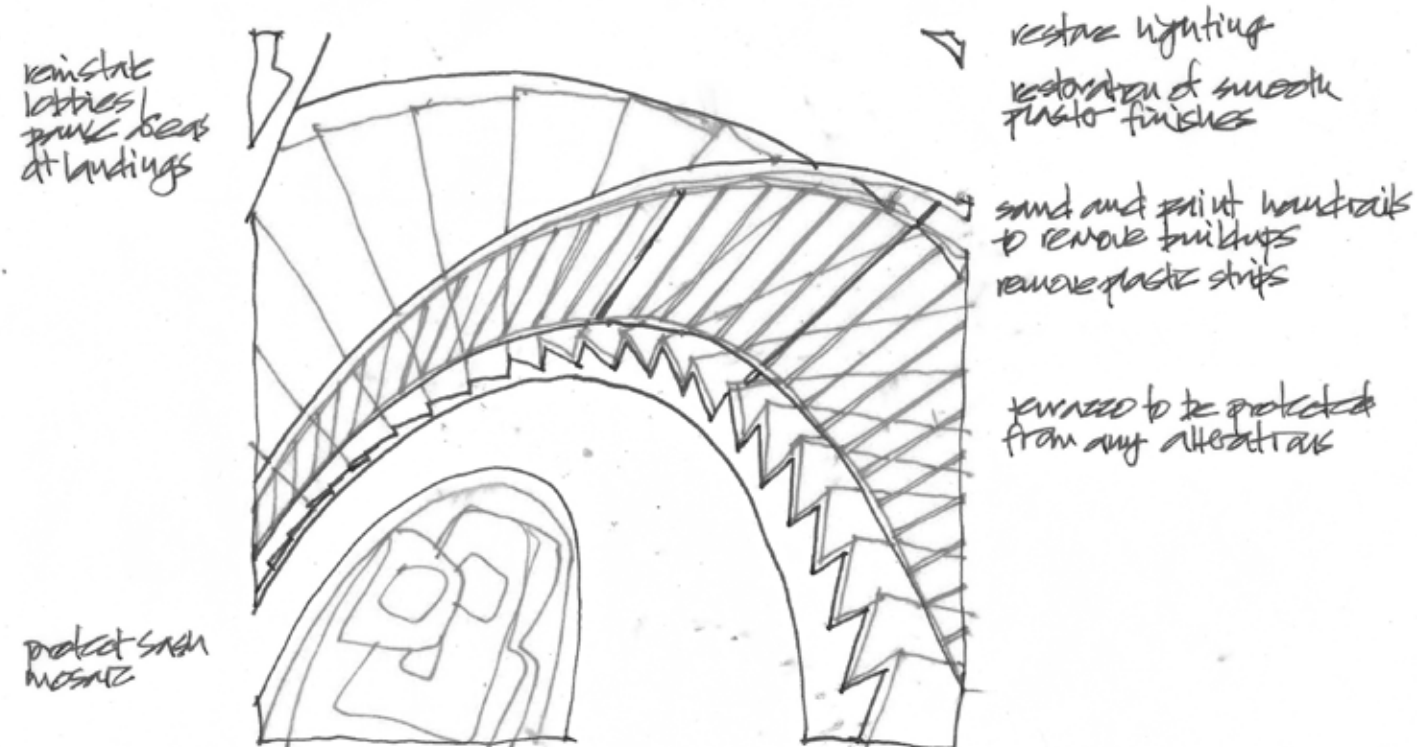


Figure 20 : Images by H. le Roux of materiality in John Moffat second floor studios.

Figure 21 : Images by H. le Roux of materiality in John Moffat central staircase.

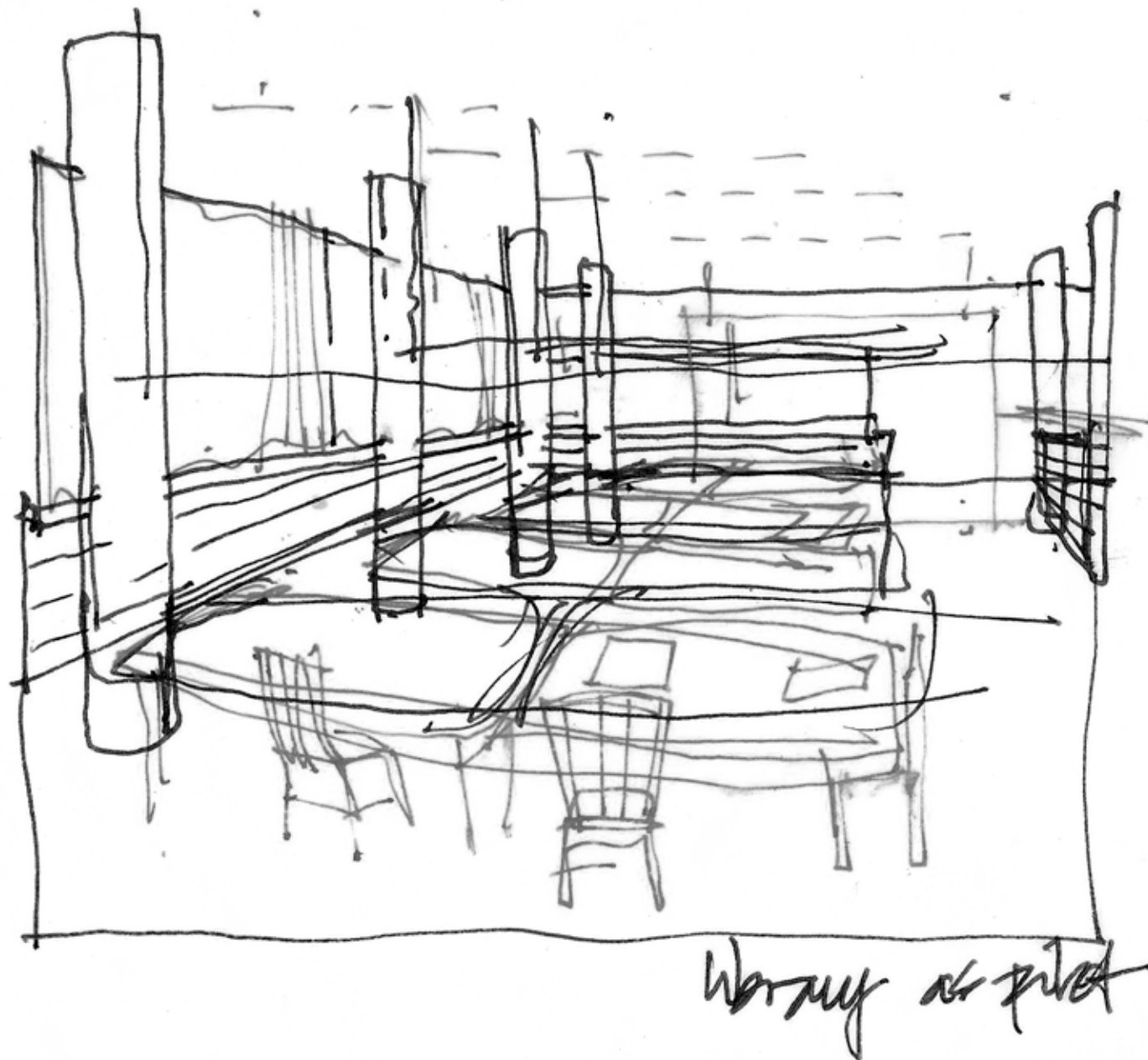
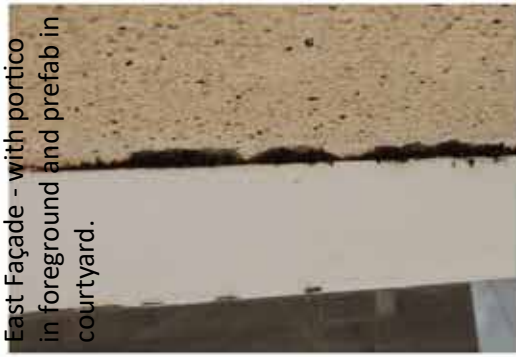


Figure 22 : Images by H. le Roux of materiality in John Moffat library.

Material / Fitting / Fixture	Historical References (see historical text for more information)	Current Situation	Recommendations
Concrete / Terrazzo Facing	The concrete shell of the building is clad with a precast combed terrazzo in an off white shade. This material was chosen due to its ability to retain its colour even when wet - Howie, W.D. (1959), page 20.	Some spawling has occurred due to rusting of fixings and some areas have damage and chips in the finish. Parts have been painted in a cream colour that is starting to bubble and peel. Concrete has been used to fill in damaged areas (this was noted on the eastern façade). Additionally staining has formed under cills or lips.	The terrazzo finish should be cleaned and the holes repaired with a matching finish (not concrete as has been done in the past). - repairs should be done in the near future while cleaning of the surface is aesthetic.
Mosaics (external)	The openings on the façades were accentuated with glass mosaics in various patterns and colours, however, plain blue panels are the most prominent - Howie, W.D. (1959), page 20.	The majority of the lower level mosaics appear to be in a good condition, while those located on the upper levels have tiles that have fallen off.	The remaining mosaics should be inspected and existing tiles made secure - this should be done immediately. Following this the missing tiles should be replaced with matching glass tiles.
Modern additions	None.	Over the years numerous additions have been added to the building such as new signage, burglar bars, disabled access and air conditioners. New adjacent structures have also influenced how the building is approached and the surrounding views. The main change has been the studio block in the early 1990s and the bridge connecting the two buildings.	The unnecessary signage could be removed and future connections should take into account the existing structures, particularly the John Moffat Building. This is an aesthetic change.
Discolouration of façade	None.	There are various forms of discolouration throughout the building. These include mould, graffiti and rust.	The surfaces should be cleaned of all graffiti and marks - aesthetic change. However the mould and any biological growth should be dealt with immediately.
General maintenance issues	None.	General maintenance is required throughout both the interior and exterior of the building. Aspects to look at included repairing damaged components and finishes.	The general maintenance of the building should be looked at in the near future before it deteriorates further.

Priority	Approach	Images					
		North Façade.		North Façade.		East Façade.	
		East Façade.		East Façade.		East Façade.	
		View of portico and studio annex.		Bridge connecting studio annex and John Moffat.			
		West Courtyard entrance.		East Façade - with portico in foreground and prefab in courtyard.			
		Window in west courtyard.					

	Material / Fitting / Fixture	Historical References (see historical text for more information)	Current Situation	Recommendations
EXTERIOR: FAÇADE	Architectural elements or spaces	Pond and seating -Fassler's design of the water element and how it responds to the surroundings- Herbert, G. and Donchin, M. (2013), page 196 and 197. Staff Garage - Mentioned in the text - Howie, W.D. (1959), page 18. West Courtyard - A description of the materials are mentioned in the text - Howie, W.D. (1959), page 18.	The pond is still a big feature towards the eastern side of the building and is in a decent condition. The staff garages have disappeared and only the structure remains -loosing the impact it originally had. During the 1990s a new prefabricated structure was erected in the Western courtyard destroying the original open space.	The pond requires constant maintenance, however, this appears to be done on a regular basis. The staff garage falls under general maintenance of the façade of the building. The Western courtyard paving and space needs to be rethought.
	Waterproofing - roof, verandas and structure	None.	There is a waterproofing problem where the lecture theatre block connects to the building and foyer. Damage is visible in the small kitchenette located on the ground floor. Additionally the various flat roofs have water collecting and not draining correctly in areas.	This is an immediate concern and should be looked at as soon as is possible.
GLAZING: GENERAL	Glass panes	None.	Over the years the glass panes have been replaced as they have broken with new glass - they hold little value within the context of the building.	The glass does not hold much value and can be replaced. There is no reason this cannot be with a more energy efficient glass such as double glazing.
	Sun louvers (northern side)	Tinted glass louvers were recessed into the walls on the northern side of the building, these were to assist in the climatic control within the inner spaces. The use of glass allowed unobstructed views northwards to towards Parktown ridge, the recessing of the louvers provided protection from hail and allow them to blend into the façade - Herbert, G. and Donchin, M. (2013), page 191.	The majority of tinted glass louvers still remain, however, they are severely neglected and require maintenance on the metal structure, additionally, the putty has become old, brittle and is falling out - compromising the glass and integrity of the louvers.	The louvers require immediate maintenance and the putty should be replaced before further glass panes fall off of the building. The missing glass panes should be replaced with ones to match the existing.
WINDOWS	Window frames	The windows were fixed to the precast concrete frame of the building and contribute to the reading of the modular system used throughout the structure - Howie, W.D. (1959), page 24.	Over the years the window frames have been repainted numerous times and the result is that they do not close properly. Additionally some parts have been damaged and rust has occurred.	The window frames can be stripped back to the metal, sealed and painted. This will improved their ability to close and therefore, the energy efficiency of the building. The rusted areas should be dealt with before further damage occurs.

Priority	Approach	Images		
		North Façade. 	North Façade. 	East Façade. 
		Peeling paint. 	Spilled paint. 	Peeling paint. 
		West courtyard paving. 	Pond. 	Portico with new landscaping. 
		Flat roof over meeting room. 	Flat roof waterproofing. 	
		Foyer window. 	Eastern façade. 	Entrance doors. 

Material / Fitting / Fixture	Historical References (see historical text for more information)	Current Situation	Recommendations
Window putty	None.	The putty has become brittle over the years and is detaching from the window frames. In a few places this has resulted in the glass falling out of the frames.	The window putty throughout the building needs to be inspected and replaced. Due to concern that glass will fall out of frames, this should be seen to immediately.
Decorative	There is no mention in the texts of the coloured glass wall that faces west or details of the direction panel located between the lift openings. However, the entrance doors into the foyer with the sand-blasted patterns in the controversial Da Vinci's Vitruvian man and Le Corbusier's Modular man are extensively cited - Herbert, G. and Donchin, M. (2013), page 191 to 192 and Howie, W.D. (1959), page 21.	The coloured glass wall has lost some of the panels and only one of the entrance doors with the sand-blasted pattern remains. However, the direction panel is undamaged.	The direction panel and coloured glass window should remain, with new glass to match inserted into the wall where glass has fallen out. The sand-blasted detail should be reinstated on the three doors where the glass has been replaced. Aesthetic.

Lights	Two main types of lighting were used in the foyer area. Track lighting providing maximum flexibility to illuminate the walls (pin boards) and general lighting mounted on columns similar to that in the main lecture theatre - Howie, W.D. (1959), page 23.	Over the years the lighting has been modified and the original lights replaced with modern versions.	The track lights used fulfil their purpose and are not unattractive. The lights attached to the columns are poorly fitted and badly chosen for a wall application. New lights made to match the original design should be installed. Aesthetical.
Pin boards	Pin boards were placed on the brick walls in the foyer, these were constructed out of a loosely compressed chip board with a reduce glue content. This was named and marketed as Ray-décor - Howie, W.D. (1959), page 25.	The pin boards appear to be the original boards, albeit a different colour than when the building was completed.	These appear to be in a good condition and should be maintained.
Mosaic columns	The columns with their vertical stripes (and the central circular staircase) were features added by Fassler which derived from a visit to the Allianz Building in Munich - Howie, W.D. (1959), page 22.	The mosaic columns have some damaged around the light fittings and have accumulated some dirt build up over the years.	The columns require a good cleaning and possible maintenance where applicable.

Priority	Approach	Images					
		North Façade.		North Façade.		North façade louvres.	
		Anodised aluminium frame of entrance door.		General steel frame.		Concrete frame on western facade.	
		Window on South façade.		Putty falling out of frame.		Putty and supports falling out of frame.	
		Coloured glass window.		Information panel.		Entrance doors.	
		Replacement column light.		Entrance / crush foyer.		Entrance foyer.	

Material / Fitting / Fixture	Historical References (see historical text for more information)	Current Situation	Recommendations
Lecture room doors	None.	Some of the doors have been modified over the years as the locking mechanisms and pivot points have suffered wear and tear. These have been changed with little regard to the original material.	The damaged doors should be repaired - particularly where metal sheets have been placed. This is an aesthetical consideration. General maintenance should be undertaken.
Ironmongery of doors	A master key system was used for the majority of locks throughout the building for ease of access for staff members while, a special 'Assa' swing-door lock was used on the theatre and library doors - Howie, W.D. (1959), page 25.	The original ironmongery remains, however, changed have been made to many of the doors as additional stronger security was required.	The numerous changes should be removed and a standard approach determined for dealing with old locks and how to proceed forward. The damaged doors should then be repaired. Aesthetical.
Anodized glass door frames	The entrances from the forecourt (east) and walkway (south) are via gold and silver anodised aluminium doors - Howie, W.D. (1959), page 21	The door frames appear to have remained.	The frames appear to be in a fair condition - a good cleaning and general maintenance should be undertaken.
Travertine wall	The travertine was used to accent walls throughout the main (exhibition) foyer and crush foyer spaces - Howie, W.D. (1959), page 22.	The travertine walls are in a reasonable condition.	The stone appears to be in a fair condition - a good cleaning and general maintenance should be undertaken.
Linoleum floor	The floors throughout the building were finished in 'Krommine' a marble type linoleum. In the foyer the linoleum was laid in an elaborate pattern using a variety of colours - Howie, W.D. (1959), page 22.	The original linoleum floor remains, however, it is showing numerous signs of use and the colours appear to have faded over the years.	The floors in the foyer have discoloured and marked over the years, however, due to their historical importance they should be cleaned and maintained in their current state.

Priority	Approach	Images		
		Entrance foyer facing north. 	Detail of pin board. 	Entrance foyer facing south. 
		Detail of mosaics on column. 	Entrance foyer facing east. 	Entrance foyer facing north. 
		A1 lecture doors. 	Corner detail. 	Insensitive maintenance. 
		Numerous additions to locking mechanism. 	Floor hardware. 	Detail of door handle. 
		Detail of frame. 	View of entrance door. 	Detail of frame. 

Material / Fitting / Fixture	Historical References (see historical text for more information)	Current Situation	Recommendations
Timber panelling	Oak veneer panelling was used for the walls in the main auditorium; this was backed with one inch of felt to assist with the acoustics. The panelling was designed to be removable so to enable access to service the blinds - Howie, W.D. (1959), page 22.	The timber panelling remains in tack, albeit with a few nicks and scratches.	The panelling is in a fair condition - a good cleaning and general maintenance should be undertaken.
Lectern	The lectern was constructed out of Kiaat, and fitted with controls to animate the blinds, ventilation, lights, speakers and 16 mm cine projector - Howie, W.D. (1959), page 22.	The original pieces are still within the rooms and in a fair condition.	The lecterns appear to be in a fair condition - a good cleaning and general maintenance should be undertaken. The main auditorium lectern does not work as when it was first built - if modern connection need to be installed - these should be done so that they do not damaged the original material.
Built in furniture	All of the three lecture theatres table tops were constructed out of Kiaat, while standard tip up seats constructed out of chrome plated steel frames with 'Vynide' covers comprised the chairs. The three theatres all had different coloured seats which complemented the varied linoleum flooring -Howie, W.D. (1959), page 19.	The original desks are in a far condition, most of the chairs are the original, with a few replacing those that have broken.	The table tops appear to be in a fair condition - a good cleaning and general maintenance should be undertaken. The chairs require a thorough check and are to be repaired where applicable. If new fabric is required this should match that of the original chairs.
Blinds	A black out blind system was used in the lecture theatres, this was a result of the architects wanting a space that could benefit from having natural lighting and not permanent darkness or electrical lighting - Howie, W.D. (1959), page 22.	None of the blinds remaining are those of the original design, and there are various kinds in the three rooms.	The various types of blinds used serve the required purpose but are unsightly. The original system failed and perhaps this should be looked at and suggestion made on how to update the historical system - with new blinds installed throughout the three rooms. Aesthetical.
Terrazzo tread	The stairs were constructed with a combination of cast in situ treads and precast risers, all in a grey-green terrazzo - Howie, W.D. (1959), page 22.	The terrazzo tread has been damaged primarily on the edges.	The stairs are in a fair condition, the damaged areas are not able to be repaired with a matching material. This should be left as it is and a good cleaning and general maintenance should be undertaken.

Priority	Approach	Images		
		Signage removed in entrance foyer. 	Signage above A1 lecture room in travertine. 	Lift surround and cladding. 
		View of foyer from south entrance. 	View of foyer from north. 	Detail of inoleum. 
		Detail of side panelling in A1. 	Back wall of A1. 	Door to projector room in A1. 
		Lecture desk in A2. 	Desks in A1. 	Lectern in A1. 
		Desk in A2. 	A1 lecture room. 	Desk in A1. 

Material / Fitting / Fixture	Historical References (see historical text for more information)	Current Situation	Recommendations
Handrails	None.	The handrail is in a fair condition.	The handrails appear to be in a fair condition - a good cleaning and general maintenance should be undertaken.
Mosaics (basement level)	Located at the base of the staircase was a specially designed mosaic by Cecily Sash - Howie, W.D. (1959), page 22.	The mosaic was repaired a few years ago and is in a good condition.	The mosaic was repaired recently, however, it should be cleaned and maintained on a regular basis.
Lighting	None.	The lighting throughout the staircase is varied and does not appear to be that which was originally placed within the space.	There is no uniformity in the lights used within this space. A decision should be taken and linked to that of the foyer area. Aesthetical.
Partitioning	None.	The partitioning was added over the years since the studios moved to the new building and the art faculty moved to new premises.	This was a necessary change, however, as the building changes yet again these can be demolished and the spaces opened again.
Bespoke timber fittings	Built in furniture was also designed by Tomaselli and constructed out of Oak or Sapele Mahogany. It was treated with a cellulose sanding sealer and wax finish - Howie, W.D. (1959), page 22.	Some of the original furniture still remains in the offices.	What is left of the original furniture and fittings appears to be in a fair condition - a good cleaning and general maintenance should be undertaken.

Priority	Approach	Images					
		Detail of blind in A2.		Blinds in A1.		Blinds in A2.	
		Side detail to staircase.		Detail of terrazzo finish.		View of staircase from second floor.	
		Detail of handrail.		Detail of fixings.		Detail of balustrade.	
		Location at base of staircase.		Cecily Sash mosaic.			
		Wall light.		Light at top of staircase.		Light under staircase at lower ground floor.	

Material / Fitting / Fixture	Historical References (see historical text for more information)	Current Situation	Recommendations
Ironmongery	A special lock and master key system was used throughout the building; this allowed access to all staff communal areas as well as faculty specific spaces - Howie, W.D. (1959), page 25.	The majority of locks have been replaced over the years and new security added to doors and entrance areas.	Depending on how the building is secured in the future these additions can possibly be removed. Aesthetical.

Furniture	The tables in the reading areas of the library were designed by Fassler out of Sapele Mahogany, these were matched with dark blue upholstered chairs - Howie, W.D. (1959), page 22.	The original furniture remains, however, the chairs have been recovered with a brown material.	Generally the various pieces of furniture appear to be in a fair condition, however, many of the chairs are unstable and require fixing - a good cleaning and general maintenance should be undertaken on both the loose and fixed furniture. This should be completed in the near future to prevent further damage or deterioration.
Mosaic columns	The columns within the library space were treated with blue and white glass mosaic tiles - Howie, W.D. (1959), page 22.	The mosaic columns are in a fair condition.	The columns require a good cleaning and possible maintenance where applicable.
Panelling	The various components of the library were in wood; the south wall was finished in slatted oak panelling and all the book shelves (also oak) were adjustable - Howie, W.D. (1959), page 22.	The wooden panelling is intact and remains unchanged.	The panelling is in a fair condition - a good cleaning and general maintenance should be undertaken.
Celling	Sound absorbent acoustic ceiling tiles were positioned above the reading area - Howie, W.D. (1959), page 22.	Based on the historical text the ceiling appears to be that originally installed.	As the layout of the library remains, the ceiling layout is applicable. This should be retained and maintenance undertaken if required.

Priority	Approach	Images			
		Partitioning in first floor studio.		Reception area in ground floor studio.	  
		Original studio board on second floor.		Built in furniture on second floor.	
		Doors on lower ground floor.			
		Built in shelves on southern wall.		Lose furniture in Library.	
		Detail of mosaic column.		View looking northwards.	
				Detail of desk and chair.	
				View looking southwards.	

Material / Fitting / Fixture	Historical References (see historical text for more information)	Current Situation	Recommendations
Roof lights	The studios on the second floor were constructed with saw-tooth roof lights. The windows were fixed to the steel girders and structural frame - Howie, W.D. (1959), page 24.	The roof lights remain unchanged.	The roof lights appear to be in a fair condition - a good cleaning and general maintenance should be undertaken.
Tiles	The design of the original tiles matches the description of the tile layout used by Fassler in the New Dental School and Hospital in 1943 - Fassler, J. (1943), page 3–12.	Some of the bathrooms have the original tiles, while others have new ones laid in a conventional pattern.	All original tiles should be retained and maintenance undertaken where applicable, furthermore, these require a good cleaning. The modern bathroom tiles appear to be in a good condition and general cleaning and maintenance is suggested.
Fittings	None.	Very few of the original fittings remain, such as the urinals in the first floor bathroom outside of the Library.	Only one bathroom appears to have retained the original fittings (urinals). These are to be retained. Cleaning and general maintenance should be undertaken particularly to that older fittings.
Windows	None.	Some of the window panes have been replaced as they have broken over the years and the frames repaired as needed.	The glass does not hold much value and can be replaced. There is no reason this cannot be with a more energy efficient glass such as double glazing. This does not include the coloured or decorative panes. Where panes have fallen out, these should be replaced with new matching panes.
Lighting	Various types of lighting were used throughout the building (those used in the foyer has already been mentioned). The main theatre had a curved roof with recessed louvered lights and side wall sconces that matched those in the foyer. The studios, offices and library were equipped with fluorescent light fittings that provided more evenly dispersed lighting - Howie, W.D. (1959), page 22.	Many of the fluorescent tube lights have been changed since the building was constructed as well as many of the other lights. The only original lights appear to be those in the main lecture room.	Some of the older lights require maintenance and cleaning. The new fittings can be replaced as required.

Priority	Approach	Images	
		Original door in Library. 	Detail of panelling. 
		Ceiling in reading section. 	Two ceiling types. 
		Detail beam and skylight. 	Beams and skylights. 
			Sawtooth skylights. 
		Original tiles on lower ground floor (in Fassler pattern). 	New tiles on lower ground floor (southern side). 
		Mens bathroom on lower ground floor.  	Original tiles on lower ground floor (northern). 
		Urinals on lower ground floor. 	Original urinals on first floor.    

Material / Fitting / Fixture	Historical References (see historical text for more information)	Current Situation	Recommendations
Paint colours	Various colours and paint finishes were used throughout the building, these were reliant on the use of the spaces. Examples of paint include enamel, P.V.A and a special stippled anti-reflective finish for the stair case area. The majority of spaces were painted in an eggshell colour, however, colours that were mixed on site were chosen for some walls - Howie, W.D. (1959), page 22 and 23.	The majority of the building is an off white colour with some strong paint colours appearing every now and then - it is unclear if any of these are the original colours.	It is unknown if any of the mixed on site colours remain in the building, this should be explored further should changes be made to rooms and spaces.
Electrical installations	None.	Many electrical installations have been added over the years. The majority of these have occurred without regards to the building or the manner in which they were installed. These are predominantly surface mounted additions.	In most cases this is unsightly and detracts from the original design intentions. A general approach needs to be establish to deal with the additions and future electrical work.
Security additions	None.	Various kinds of security instillations have been added throughout the building to prevent unwanted entry into certain spaces.	Depending on how the building is secured in the future these additions can possibly be removed or changed to a uniformed approach. Aesthetical.
Curtains	Curtains were used extensively throughout the building. The foyer or exhibition space has soft lace curtains while certain areas had curtains with custom dyed linings (to match the wall colours) - Howie, W.D. (1959), page 23.	No curtains remain, however, some spaces have blinds.	Various types and kinds of blinds have been used throughout the building. A standard window treatment or set of guidelines needs to be established and implemented when spaces are refurbished. It would be nice to reinstate the foyer lace curtains. Aesthetical.
Heating	Underfloor heating was placed in all spaces. This allowed heat to be felt throughout rooms regardless of furniture placement and during vacation periods only the rooms needing heat to be turned on. The staff offices and Art studios (where nude models were used) required supplementary fan heaters - Howie, W.D. (1959), page 26.	The original heating system has become too expensive to run.	A new way to heat the building needs to be explored. Part of this is how to make the building more energy efficient.

Priority	Approach	Images			
		Security gate to offices on second floor.		Electrical board on lower ground floor.	
		Windows in south stairwell.		Orange and grey on ground floor.	
		Numerous light fittings.		South and North façade (respectively) .	
		Burglar bars to windows on western façade.		Wire in cladding in entrance foyer.	
		Burglar bars on lower ground floor.		Electrical boards on first floor. Off white on walls.	
		Pivot window on 2nd floor.			

Material / Fitting / Fixture	Historical References (see historical text for more information)	Current Situation	Recommendations
Flooring	The majority of floors throughout the building were finished in a 'Krommine' marble type linoleum. Other materials used included tiles and travertine - Howie, W.D. (1959), page 22.	Some parts of the original linoleum have been replaced over the years, as well as, some changes in other floor finishes.	The majority of linoleum should be retained with a general cleaning and maintenance. However, certain areas may need to be replaced, this should be determined on a case by case basis.
Signage	The lettering used throughout the building was "specially designed and carried out in gold anodised aluminium with enamel inserts in various colours according to the setting. The same lettering design was skilfully applied by the sign writer to the glass direction board. Elsewhere the door serial numbers and name panels are in cream on transparent plastic" - Howie, W.D. (1959), page 23.	Throughout the building there are numerous types and kinds of signs. These appear to have been added bit by bit, with disregard of the whole of the building or the existing signage. Additionally unsightly florescent strips have been placed on the staircase.	A standard system should be employed throughout the building and implemented when the areas are refurbished / changed. This should be based on the original lettering and what is remaining of it. The original lettering is to be retained.

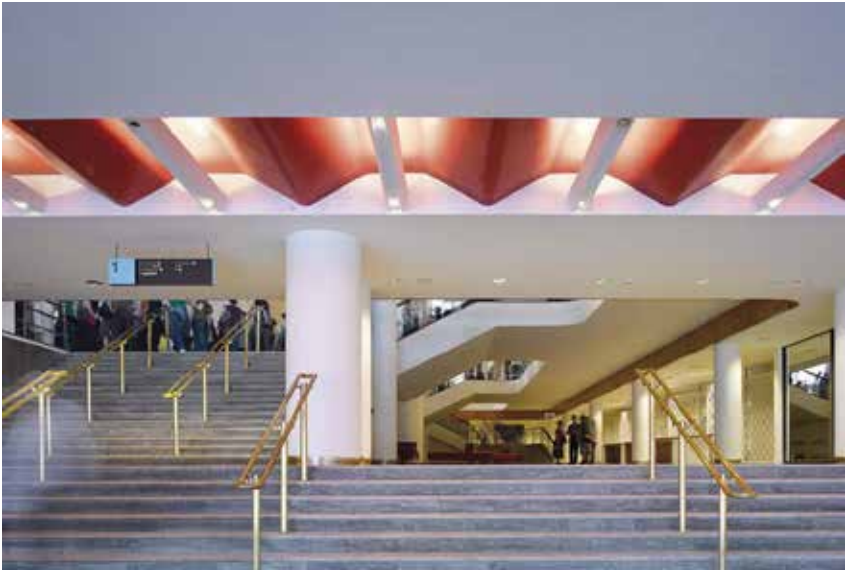
Priority	Approach	Images	
		Office on ground floor.	Office on second floor.
		Office on lower ground floor.	
		Heater on second floor (art studio).	

Signage throughout the building.

Floor to bathroom.

Linoleum on ground floor.

Change of material between staircase and landing.



4.1 Value of the building.

After fifty-seven years, the architecture of the John Moffat Building still fulfils its design intention and the objectives of the design team. Which was to “produce a work of architecture which sat well in its context, respecting its neighbours, a work not of an ephemeral fashion, but one which would age with grace, and framework of accommodation practically efficient and spiritually congenial, in which teachers could educate, and coming generations develop intellectually and creatively.”⁶⁰

The building is significance as an architectural artefact, through the innovative materials used, the way in which it was designed and even the technical innovations formulated during its construction. This can be seen in the:

- 4.1.1. Innovative materials and building techniques used – examples of these include the underfloor heating, the blinds in the lecture rooms and the pin boards.
- 4.1.2. Hardwearing Materials – the finishes to the exterior were chosen for their durability and ability to maintain their appearance. While those in the public spaces, such as the main auditorium were chosen to resist heavy traffic and wear and tear.
- 4.1.3. The collaborative design approach – based on the teachings of Walter Gropius and the precedents set in the architectural faculty; the John Moffat is almost a style of its own that was drawn from the six team members and how they interacted with each other’s individual styles.

4.2. Capacity for change.

From the onset the building was designed for change and adaptation in order to accommodate the requirements of future generations.⁶¹ The section depicting the changes over time (building analysis) gives a good indication on how this has happened over the years based on four major periods in the John Moffats lifespan.

However, there are consequences to this change:

- 4.2.1. Spaces have become fragmented over time, losing the original design intentions.
- 4.2.2. Open spaces or areas have become divided and no longer used for their intended purpose.
- 4.2.3. Since the building was constructed there have been advancements in how to approach climatic consideration. This has also been compounded by how the maintenance has been performed over the last fifty years. A clear example of this is the windows, which do not close and loose large amounts of heat during the cooler months and the underfloor heating which is now too expensive to utilise.

Figure 23 (opposite page): Restored modernist buildings. Top and far left Allies and Morrison Royal Festive Hall London; Centre and bottom right Villa Tugendhat. [Allies and Morrison Architects (2014) and Creative Commons. (2014)].

60 - Herbert, G. and Donchin, M. (2013), page 197.

61 - Herbert, G. and Donchin, M. (2013), page 198.

4.3. Decision making frameworks.

“As a didactic as well as a social environment the building worked well”⁶² – this can still be the case today. This document provides an understanding of how the building came about, what makes it an important structure and the areas that require immediate attention in order to maintain it. Beyond the long term plans for the building there are aspects that requires immediate repair and maintenance throughout both the interior and exterior of the structure. These should be dealt with as soon as possible and not only when areas are refurbished or changed.

How the building is conserved needs to be carefully considered, various factors influence this decision, however, some are more important than others:

- 4.3.1. A uniformed approach on how to refurbish the building needs to be complied. This can include how to deal with aspects mention in the material chapter such as the electrical conduits, heating requirements, new fire laws and security issues.
- 4.3.2. How the public, historical users (old students and staff members), current users and future users perceive the building.
- 4.3.3. Can the conservation of the building be used to teach the current and future students about issues relating to modernism architecture and its preservation?
- 4.3.4. Maintaining the intended use of the building – that of a working building – and not transforming it into a museum to modernism in South Africa.

4.4. Scenarios for alternation.

The John Moffat building once again is at a point where a transformation is required. How these changes occur should reflect the historical use of the building - whether it is by going back to a period in time or following the precedent of change. Some scenarios have been proposed:

- 4.4.1. Refurbishment of key spaces back to their original / intended purposes, starting with the exhibition foyer and the three lecture rooms.
- 4.4.2. Looking at the historical design of the building and converting it back to using the intended teaching spaces – the studios in the north wing – and in the process revive the notion of studio teaching.
- 4.4.3. Clarifying how the Modern Movement envelope and services can be re-modernised to fit into the digital age in which it now finds itself.

62 - Herbert, G. and Donchin, M. (2013),
page 195.

4.5 Further research and outputs.

The restoration of John Moffat, if done with proper expertise and skill, could grow expertise within the School as well as be material proof of that expertise. It is essential that this research potential is maximised through the whole process.

Suggested areas for additional work in relation to the existing knowledge resources of the School are:

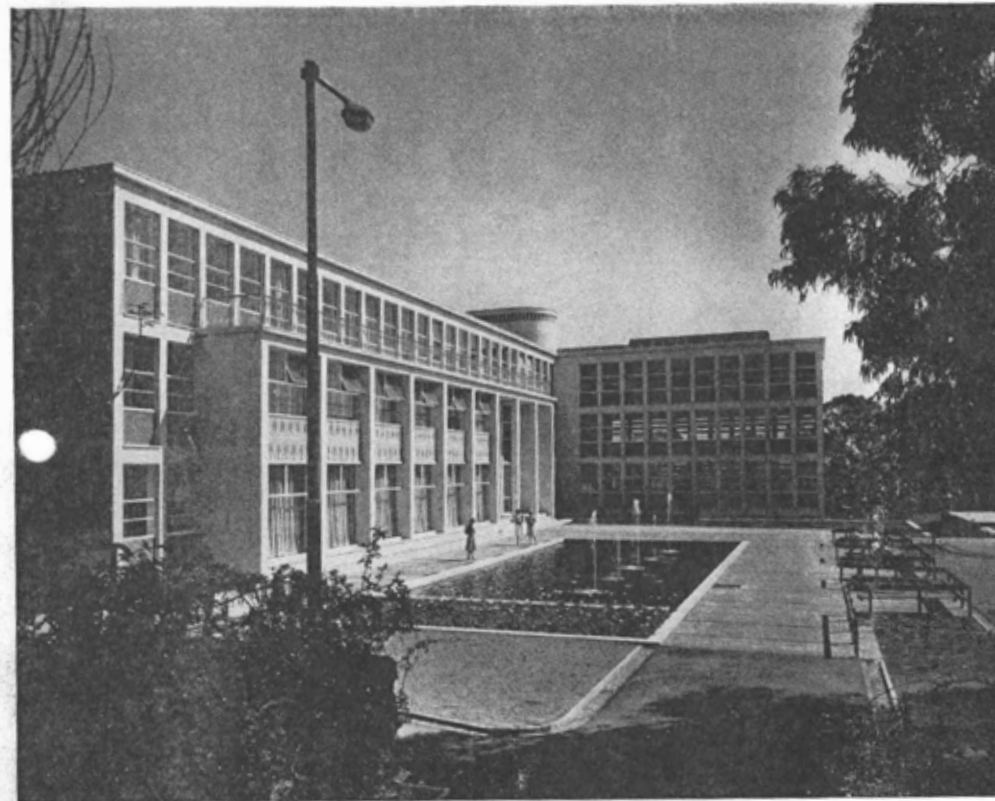
- 4.5.1 Articulating the relationship between architecture and other disciplines in the School and on campus through spatial design.
- 4.5.2 Relating restoration to energy and resource sustainability.
- 4.5.3 Relating restoration to contemporary design.

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The John Moffat Building

UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG

THIS GENERAL VIEW IS FROM THE SOUTH-EAST LOOKING FROM THE APPROACH ON THE UPPER CAMPUS LEVEL

ASSOCIATE ARCHITECTS: Professor J. Fassler, W. D. Howie, G. Herbert, J. M. Shunn, U. Tomaselli and J. Morgenstern, M.M.I.A., A.A.R.I.B.A.

CONTRACTORS:

FOUNDATIONS: French and Hollingshead, Ltd.

SUPERSTRUCTURE: J. C. Bitcon and Co. Ltd.

QUANTITY SURVEYORS: Farrow, Laing and McKech-nie, M.M.C.Q.S.

CONSULTING ENGINEERS:

STRUCTURAL: M. Marcus, M.I. Struct. E., M. (S.A.), I.C.E.

ELECTRICAL: N. P. Smit, M.I.E.E., A.M. (S.A.) I.E.E.

VENTILATION, FOUNTAINS: D. A. Hill and Partners.

S.A. ARCHITECTURAL RECORD, NOVEMBER, 1959

The decision taken by the University Council in 1954 to accommodate both the Faculty of Architecture and the Department of Fine Arts in the new building has continued an association that dates from the establishment of the Department of Architecture in 1921.

It seems a far cry from the days when Professor G. E. Pearse initiated courses in the newly created Department in the "Tin Temple" on what is now known as Plein Square. The profession in the Transvaal is indeed indebted to the stalwarts of the Association of Transvaal Architects and in particular to Mr. D. M. Burton and Mr. D. M. Sinclair, who persuaded the then Principal of the Witwatersrand University College, the late J. H. Hofmeyr, to establish a Chair in Architecture, in spite of the inability of the Association fully to subvent the development. I understand that Mr. Burton was not merely active in pressing for the creation of this Chair but also assisted financially in its foundation.

The Department of Architecture was initially a member of the Faculty of Engineering and from its inception provided a course in the History of Fine Arts that proved attractive to students outside the department. Later the Faculty of Arts decided to inaugurate courses leading to the degree of B.A., with Honours in Fine Arts, which courses were provided by the Department of Architecture. Courses in the History and Appreciation of Art and drawing from Life were offered as well as those in Art History for students reading for the B.A. degree. By 1945, such was the students' response that the organisation of these courses became a major undertaking and it was decided to establish a Department of Fine Arts within the Faculties of Arts and Architecture.

A revision of the regulations for the degree of B.A. Honours in Fine Arts inaugurated courses in painting which, together with those existing, made it possible for the first time for a student to register at this University for practical training as a painter. The University thus came into line with others offering degrees in Fine Arts and this resulted in an increase in the number of students interested in careers in Art.

With the establishment of a Chair in Fine Arts in 1957 the Department emerged as a fully independent part of the University.

In its early years the Department of Architecture was greatly assisted in the establishment of its library by Lady Phillips, who, keenly interested in fostering the Arts, provided not only plaster casts but also contributed towards the purchase of the library of the late J. M. Solomon; by the Association of Transvaal Architects; by the Witwatersrand Council of Education; by Mr. Burton, and, of course, others who have since contributed to its collection. The Architecture and Fine Arts library now exists as a divisional library housed in the new building under the control of the University Librarian.

By 1927 the Department of Architecture had increased in stature sufficiently to merit the recognition by the Royal Institute of British Architects, thus exempting graduates from its final examination. Courses in Quantity Surveying were commenced when the University of Pretoria established a Chair in Architecture in 1942, and terminated the by-lateral agreement between the two Universities whereby qualifications in Quantity Surveying had been awarded by the University of Pretoria and in Architecture by the University of the Witwatersrand.

In 1940 the Department was raised to the status of a Faculty and in the same year the Registration Council of Great Britain, under the Architect's Act, gave full recognition to the Faculty's courses leading to degrees, diplomas and certificates. The next important development was the establishment in 1946 of a

post-graduate Diploma in Town Planning for architects, civil engineers and land surveyors, which is recognised by the Town Planning Institute of the United Kingdom as exempting diplomates from its final examinations.

For many years valuable assistance was given to the University of Natal when students wrote the senior examinations of the University of the Witwatersrand until a Chair was established in Durban. The Faculty has also been pleased to share its experience in town planning education with the other South African Universities embarking on similar courses.

During the course of these significant developments the two departments were struggling with unsympathetic accommodation and inadequate facilities; for some twelve years, junior groups were housed in huts on the Campus; while lecturing facilities were rudimentary. There was a grievous lack of empathy in the departments, so essential to the development of a spirit and purpose in teaching organisations of a professional nature.

In 1954 the University Council gave the new building priority in its post-war building programme and the staff responded enthusiastically to the instruction to proceed with its design. In naming the new building after John Abram Moffat, who practiced Architecture in Johannesburg for many years before ill health forced his retirement to his farm in the Lydenberg area when he died in 1941, the University pays tribute to his profession and his generosity. His will stipulated that, subject to certain specific bequests, the proceeds of his estate be paid to the University fifteen years after his death and that the use to which the funds accruing be put should take a permanent form. The University benefited by approximately £100,000. By naming the largest lecture theatre the Dorothy Susskind Auditorium a tribute was paid to Mrs. Susskind in appreciation of her work as Chairman of the University Towns Festival, held in 1955, to help raise funds for the University Appeal.

THE BUILDING

The location of the building was influenced by a number of basic considerations. Important among these was the creation of a divisional library for Fine Arts and Architecture housed in the building. Since it served both these Departments and the University at large, particularly students in the Arts Faculty, reasonable proximity to the Central Block as well as to the Library was desirable. This was also a factor affecting the large lecture theatre. Moreover, as the largest theatre was to accommodate public lectures, public access and parking which would not congest the main drive was necessary. The site meeting these requirements, and which in addition had interesting features of topography and view, was adjacent to the Library on the fringe of the central Campus space and served by a roadway on the west. Having been used as a spoil dump for the excavations of both the adjacent swimming bath and the library stack room it was a neglected waste that was visually most unattractive and uninviting.

The programme for the building was based on the annual intake of 40 Students in Architecture and 25 in Quantity Surveying. Together with 43 in Town Planning, this gave the Faculty a maximum of 320, while the Department of Fine Arts required accommodation for 45 in practical classes and 270 in academic classes. The divisional library to house 10,000 volumes, lecture theatres seating 290, 80 and 40 respectively with a seminar for 30, the administrative wing, studios, the Materials Museum, exhibition space and staff drawing offices, constituted the essentials.

Six members of the Department of Architecture became associate architects for the project. Five different sketches were prepared by individuals or pairs. The best ideas

Howie, W.D. (1959). The John Moffat Building, University of the Witwatersrand, Johannesburg. South African Architectural Record. November, 16-27.

were incorporated in the final sketch plan. These included the set-back of the East Wing to create a forecourt and the arrangement of the exhibition foyer and lecture theatre suite among others. The location of the largest lecture theatre nearest the Campus and accessible from the road met the convenience of B.A. students and of the public on the occasions of public lectures and congresses.

PLANNING

The plan was resolved into the basic T-shape with all the studios, the seminar, crit room and associated staff accommodation in the North Wing, permitting the architectural studios to be lit from both sides and the arts studios to have south light with supplementary roof lights. The East Wing contained the exhibition foyer with lecture theatres, the library the administrative offices and ancillary spaces, while the Dorothy Susskind Auditorium with the staff drawing office underneath developed as an articulated fan shaped form to the South. On the West are the staff garages which define the West courtyard.

The exhibition foyer and lecture theatre suite was thus on the ground floor, the library with its controls and an ante-room providing Fine Arts with display facilities for illustrative material referred to in lectures or special exhibitions, is given prominence in the scheme on the first floor level while the administrative offices, utility units and Materials Museum are situated on the second floor.

The lower ground floor includes a Crafts room so placed to facilitate the delivery of bulky materials and cleaning, since the floor is drained to an outlet for sluicing down. Offices beneath the auditorium presently occupied by the Department of Statistics will accrue to the Department of Town Planning when it is eventually established.

The form of the building produced a series of semi-enclosed and enclosed external spaces which lend themselves to attractive landscaping. The pool, fountains and seats on the East front are intended to form a precinct within the Campus where students can relax between lectures.



LOWER GROUND FLOOR PLAN

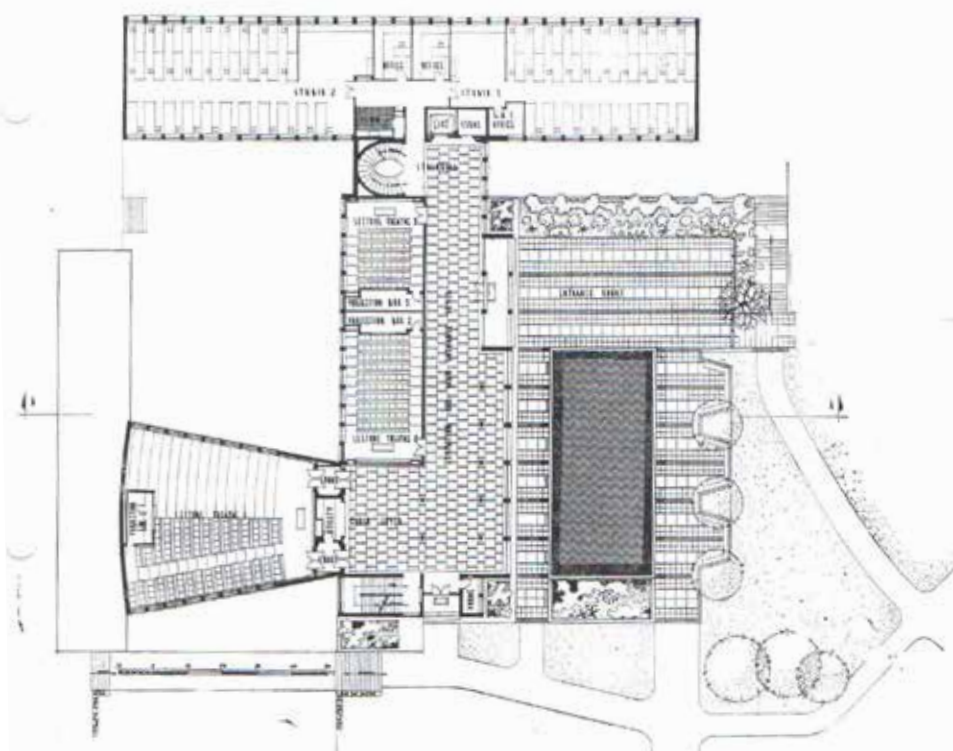
SUPERSTR

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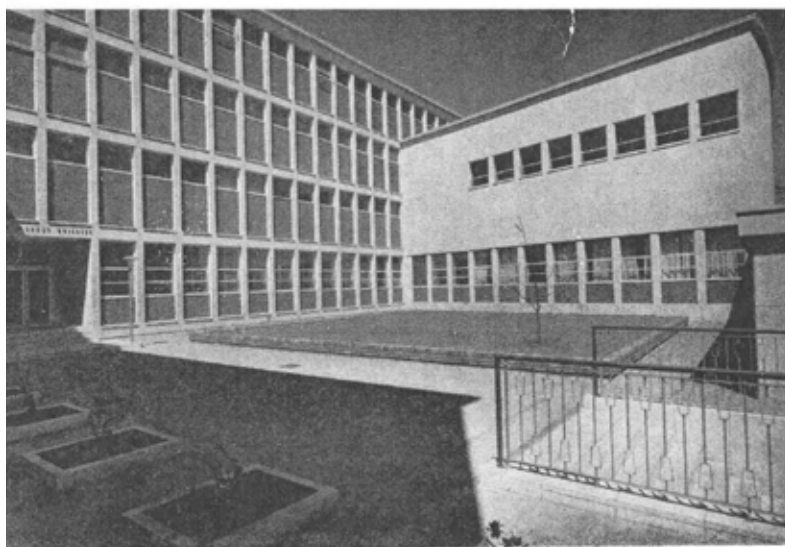
CROSS SECTION A-A.



GROUND FLOOR PLAN.

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The West Courtyard, with the entrance at lower ground floor level. Facings and kerbs are off-white terrazzo while the modular openings have white windows separated from the blue glass-mosaic spandrels by yellow cills. The main auditorium is in the background with the corner of the staff garages on the right. Pavings are patterned in brushed concrete and brick, and the lawn, raised to counter drainage problems in hard shale, has a brick surround.

DESIGN

The introduction of the new building into a Campus of traditional character and classic motifs posed the question as to whether the design should reflect current architectural theory, relying entirely on its contemporary merits or whether the building should be designed with cognisance of its setting, one in which an attempt be made to create harmony with its neighbours. The architects chose the latter, more exacting, approach. An interesting parallel was seen recently in the work of Paul Rudolph who faced the same dilemma when he designed the new Jewett Arts Centre at Wellesley College in Boston, U.S.A. He decided to create a wholly contemporary building which would blend into the "collegiate gothic" Campus. By siting, massing, by detailing and proportion and by sympathetic scale he succeeded in creating a stimulating and harmonious asset.

In the John Moffat Building the approach had the same motivation. An attempt was made to design a contemporary building which would nevertheless be in harmony with its Campus setting. In its height, its scale and its simple massing and in the proportion of its modular openings it has an affinity with that which exists. A "fashionable design" was avoided so that the building should not rapidly date, but rather, that it should exhibit a timeless character. The responsibility for creating a suitable and harmonious environment for the young student was fully appreciated.

The general design represents a conscious pursuit of the thematic variation of the basic module, and a careful integration of all components with this modular theme. The thematic variations may be seen in the design of the library unit with its related mosaics, in the pavings and garden seats and in the fact that the courtyards of the library unit and the theatre wing bear the same proportional relation to those surfaces as the main cornice does to the full facade. The projection of this cornice throws a strong definitive shadow on the sunlight surfaces, and by reason of its undercut profile and contained shadow it persists as a strong terminal definition on the shadowed elevations. This characteristic is symptomatic of the deliberate exploitation of light and shade

to enrich the external surfaces — an important aesthetic device in this sunlit country.

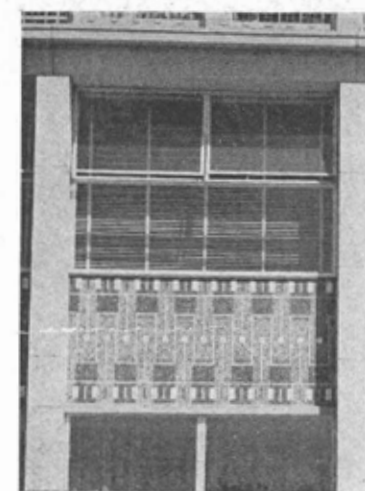
The openings on the facades derive from the 5 ft. 6 in. module which was found most suited to both studio and office planning, and which was adopted as a control throughout the plan. The proportions of these openings are slightly in excess of a double square and bear marked similarity with the solids and voids of the Central Block and the adjacent Library building, and occur repeatedly in subsidiary elements throughout the building.

The structure consists of a simple system of reinforced concrete columns and beams supporting floor slabs comprising "Shofco" precast prestressed beams with hollow block infilling over the uninterrupted spans of 33 ft. and less.

FINISHES AND DECORATION

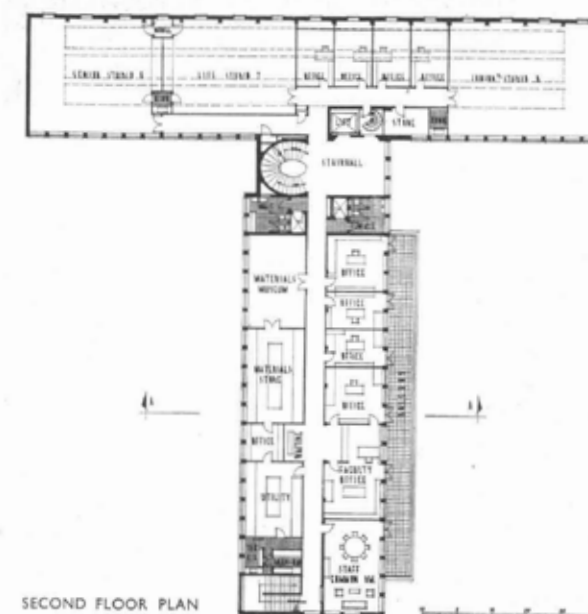
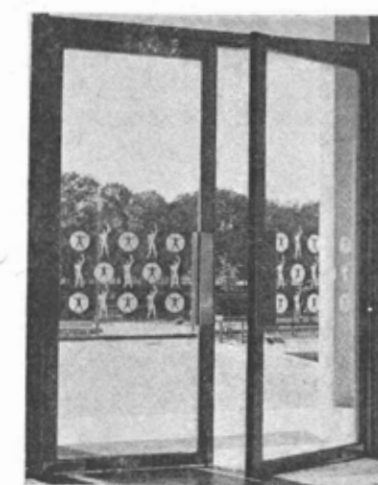
The external finishes were chosen for their appearance and durability so as to avoid costly maintenance. The building is sheathed in precast combed terrazzo in a warm off-white shade which retains its colour even when wet. The glass mosaic spandril panels, generally in a quiet shade of blue, with the white windows relieved by the yellow pressed steel cills, form a pleasing contrast. The group of six red mosaic panels on the North and the broad mosaic surfaces on the East marking the library, with their intricate running design of pale blue lines on a honey coloured background enriched with darker brown and blue surfaces and accentuated by white glazed tiles, the precast concrete grilles on the West and the wrought metal balustrading picked out in silver, blue and pale amber, amplify the basic theme stated by the repetitive window openings. On the unfenestrated end walls the modular theme is sustained by the joint pattern in the terrazzo facings, emphasised by a sequence of narrow vertical recesses which give interest and scale to these surfaces.

The Dorothy Susskind Auditorium is lined with Oak veneer panelling, removable for access to the blackout shutter installations and has specially shaped slats backed by 1 in. felt for acoustic control on the rear wall. The standard tip-up seats are upholstered in light blue "Vynide" with Kiaat counters, and chromium plated steel frames. The lectern is in Kiaat and the floor grey linoleum. The other theatres have similar treatment on the rear walls, the

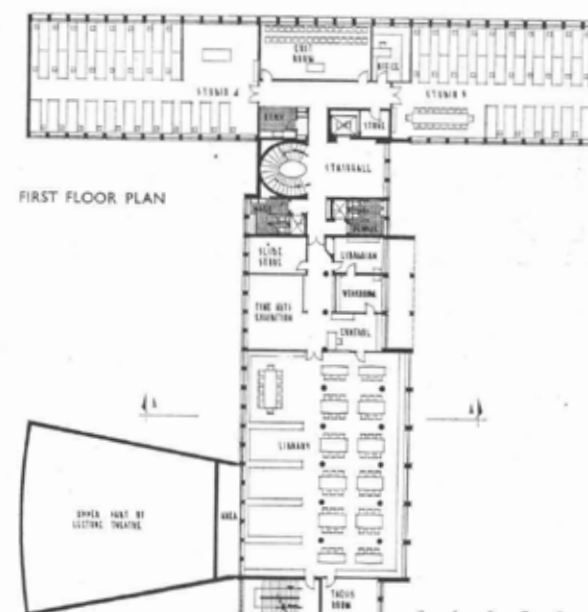


Above: Detail of the East Facade. The thematic variation of the basic modular opening is seen both in the large scale of these openings and in the design of the mosaic panels. These include a running pattern in pale blue on a honey-coloured background with accents of dark blue and brown, relieved by the repeated contrasts of the white glazed tiles.

Below: The entrance from the forecourt. The doors are in gold and silver anodised aluminium and have been decorated with a sand-blasted pattern comprising Da Vinci's proportional man and Le Corbusier's Modular man. This also serves a utilitarian purpose of preventing people walking into the glass of the doors.



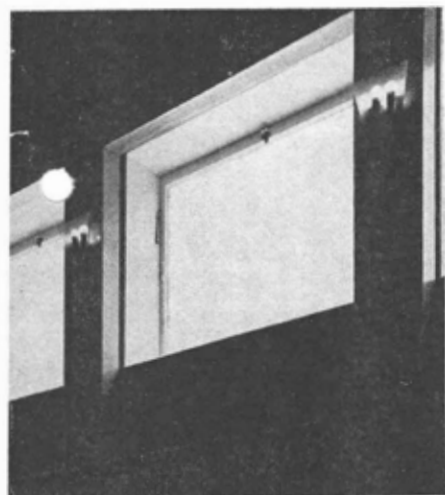
SECOND FLOOR PLAN



FIRST FLOOR PLAN

THE DOROTHY SUSSKIND AUDITORIUM.

Removable Oak veneered laminated panels cover the side walls and shaped Oak slats over 1 in. felt provide acoustic control on the rear wall. The curved reflective ceiling contains recessed louvred lights on a dimmer circuit to provide glareless illumination for use during illustrated lectures without impairing the projected picture. General lighting is by rear cove and brackets, with spots for the front wall containing fixed double screen, glass chalkboard and grilles masking forced ventilation inlets and speakers wired to 16 mm. cine projector. Dual slide projection is provided in the projection room. The floor is pale grey linoleum, seats pale blue "Vynide" with Kiat counters, and the lectern and doors are in Kiat. —Below is a detail showing the electrically operated steel blackout screens partly closed.



seats are in dark blue and grey respectively with floors of grey and tan asphalt tiles respectively and similar lecterns. The same suppliers provided the seats in the Great Hall in 1939.

Floors elsewhere throughout the building amounting to some 5,000 square yards, are in "Krommine" marble type linoleum, that in the exhibition foyer being laid in pattern of light grey squares having sequences of light blue and yellow accents in the centre and separated by dark grey stripes, all in a dark blue marginal surround.

The main elliptical stair has *in situ* treads and precast risers in grey-green terrazzo while the wall was given a special stippled plastic finish to avoid the disturbing reflections otherwise apparent.

The library has end walls of slatted planelling and a series of bays with bookcases, having adjustable shelves, all in Oak. Contrast is given by the Sapele Mahogany of the tables and blue upholstered chairs. A feature of the reading room was the use of a sound absorbent ceiling. The effect is most apparent and the conditions for study and concentration are eminently satisfactory.

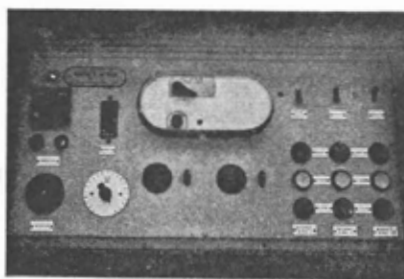
The Materials Museum is being developed as an important teaching aid to which manufacturers and suppliers are enthusiastically contributing. The walls are panelled in pale grey pegboard, which together with matching shelves of varying sizes carried on "Sparrings" fittings provides complete flexibility of display.

The staff offices have been equipped with appropriate built-in furniture in which Oak and Sapele Mahogany are used in effective combination. These fittings were treated with cellulose sanding sealer with a wax finish.

The plastered wall surfaces generally were finished in eggshell enamel following careful pre-preparation to obtain a superior finish. P.V.A. finish was used in the Crafts room to facilitate subsequent cleaning.

In the selection of colours for painting the architects took particular pains. Each space was treated on its own merits and colours were mixed on the spot. There was scarcely a standard

shade used and while the range of applied colours is considerable the effect is never aggressive. The same quality may be seen in the curtaining which includes some beautiful David Whitehead designs prepared by John Piper as well as examples from the well-known House of De Haes of Holland. All curtains have special dyed linings to tone with the colour schemes and were made up by the local suppliers.



Detail of the standard lectern control panel. At left is the summer-winter ventilation control, with microphone jack below wired to the loudspeakers. The ceiling light dimmer control follows, then the power points with the intercom speak-listen unit above. At right the light switches are above the buttons controlling the blackout blinds, with a set to operate a future screen curtain.

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The lettering used in the building at entrances and in the foyer was specially designed and carried out in gold anodised aluminium with enamel insets in various colours according to the setting. The same lettering design was skilfully applied by the signwriter to the glass direction board. Elsewhere the door serial numbers and name panels are in cream on transparent plastic.

SPECIAL PLANNING FEATURES

The entrance and exhibition foyer, together with the crush foyer, *en suite* with the lecture theatres, was deliberately planned on generous lines to cater not merely for the large number of students using the theatres but, since the internal wall surfaces



have cloth covered pin boards, to permit the display of current design exercises in all years of study once these have been appraised and criticised. Students are thereby kept in touch with what is happening in courses other than their own. The space is also available for mounting special displays and exhibitions for both academic and public occasions. The facilities thus offering, together with the small service kitchen relating to the auditorium, having a marble counter and "Modernfold" doors in a travertine surround, has already made the building a venue much in demand for official congresses. The lighting of this space is designed for the purpose and includes recessed ceiling floods, background lighting by repetitive wall brackets and pendants and spot lights on a sliding conductor for flexible illumination arrangements.

The lecture theatres were designed to meet the specific requirements of illustrated lectures as these constitute a large proportion of the programmes of both departments. Nevertheless the architects did not desire permanently darkened theatres as there is



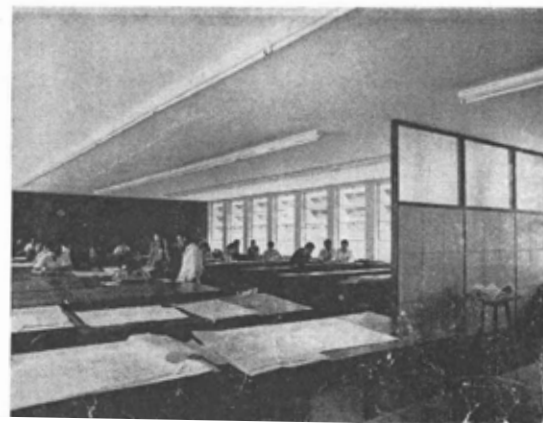
The Architecture and Fine Arts Library, housed in the building, is a divisional unit under the control of the University Librarian. It accommodates 10,000 volumes with a high proportion of large folios. The bookcase fittings with adjustable shelves and the slatted panelling on the end walls are in Oak, with contrasts in the Kiasat doors. The tables and chairs, with blue upholstery, are in Sapele Mahogany. Columns have blue and white glass mosaic sheathing and the floor is in light blue linoleum. The ceiling is entirely covered with highly absorbent acoustic tiles with dustproof fluorescent light fittings.

Opposite: The Materials Museum has pale grey pegboard panels with Kiasat cornice and adjustable shelves of various sizes. The room is designed for complete flexibility of display so that the exhibits may be arranged to coincide with the lecture syllabi, and accommodate the extensive collection of the various items.

Left: A view of the senior painting studio, with a "life" class in progress. The model is clothed and resting. These studios on the top floor have windows to the south with saw-tooth roof lights. The structure comprises steel girders and frames to which the windows are fixed, carrying precast concrete units forming the ceiling and sloped surfaces. The light from the small windows on the north elevation is controlled by individual shutters. Individually switched fluorescent lights give artificial lighting control.



Right: A typical architectural studio. The view shows the North windows with their neutral tint glass louvres which control sun penetration and even out the light intensity on both sides of the rooms. Continuous fluorescent strips give evenly dispersed shadowless lighting. At right is seen a corner of the briefing space. Face brick is used on side and end walls, where different colours and bonds have been exploited in the different studios. Drawing desks are at intervals corresponding with the modular window mullions.



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much in favour of the atmosphere and psychological characteristics which derive from natural lighting of these rooms. Each theatre has its own projection room equipped for dual projection. This arrangement is essential when making comparisons or illustrating a building with its plan. Standard Liesegang and 35 mm. Leica projectors with long-throw lenses provide for the various slides and book illustrations. The largest theatre has a Filmsound 16 mm. cine projector, wired to dual speakers, while a Bell and Howell silent projector is available for the smaller rooms.

In order that students may take notes during illustrated lectures, a system of louvred recessed ceiling lights was adopted. These avoid undue spread of light and consequent glare and sight of the light source which is so discomforting to an audience. They are arranged on a dimming circuit so that the intensity may be adjusted to provide sufficient illumination in the room without affecting the clarity of the projected picture. Electrically operated sliding steel shutters rapidly provide the necessary black-out and when these are closed the plant providing forced ventilation (and heating) is switched on. All these operations are controlled by the lecturer at the lectern, which in addition has an intercom connected to the projection room. Consequently in a matter of seconds the theatre may be adjusted to the demands of the various lecturing programmes.

The theatres are equipped with "Nucite" tempered glass chalk boards sprayed with enamel containing aluminium oxide abrasive, which are claimed never to wear smooth, warp or fade.

The layout of the studios, with drawing tables at modular intervals, includes in each case the partitioned recess used for informal discussions, programme briefing and display of pertinent information. Lighting is by continuous fluorescent fittings disposed to give even shadowless lighting over the whole area. Sun control on the north is provided by neutral tinted glass in aluminium frames. These both even out the light intensities from both sides of the room and avoid the objectionable "blinker" effect of solid louvres.

Supplementing the briefing spaces in the studios is the Crit Room, having fluorescent lighting and absorbent ceiling panel, where formal design criticisms take place. One difficulty encountered early in the design stage was the absence of a suitable reasonably priced material which could be used to pin up drawings. The author induced the ultimate supplier to experiment with a reduced glue content in a loosely compressed chip board. The

result was an attractive panel faced with a soft veneer, used for all pinning surfaces and now marketed under the name "Raydecor."

Some mention of the lock and master key system of the building appeared in an earlier article*. The Departments of Architecture and Quantity Surveying, of Fine Arts and the Library, required careful co-ordination of their demands, since each enjoys its own special accommodation but shares certain common facilities. In addition to grandmasters each is separately masterkeyed, while the key to each staff office is also the pass key for departmental facilities, thus avoiding cumbersome bunches. The inconvenience of having to open a locked door while carrying lecture material or a brief case led to the use of the key-in-the-knob "Schlage" equipment. Some 150 "Novo" locksets, many with "Riviera" escutcheons were used. Special "Assa" swing-door locksets were used on the theatre and library doors.

Testing and experimental laboratories as such do not form part of the complex since these facilities are available in the engineering departments on the Campus.

TECHNICAL FEATURES

Most important of these was the introduction of electrical floor heating throughout the building, including corridors. The architects' approach to this problem was strengthened when the author received instructions to use electrical heating and avoid the installation of coal-fired boilers with all that these entail.

Various forms of electrical heating from convectors to radiant panels were considered. By reason of the furnishings no form of heating unit beneath the window cills could be contemplated, neither on the score of efficient operation, since in some cases students would be within two feet of the surfaces, others fifteen feet away, and the fact that the units would be masked by desks, nor on the score of accidental damage and tampering. High level units were not considered suitable as these would not warm the

"A Comprehensive Door and Door Furniture Schedule," S.A. Architectural Record, Vol. 44, No. 5.

The building is warmed by electrically heated cables in the floor. The cables are shown led round adjustable rollers on a steel channel member which straightens the cables when the bolts to the column struts are taken up. Wires are pressed down onto the slab surface and the first 1/2 in. thickness of screed applied, as the illustration indicates. When set the roller units are removed and screeding completed. Subsequently the final screeding making up a finished thickness of 1 1/2 in. is applied. Some 1,000 feet of cable make up each circuit.



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areas near the floor, and cold feet are not conducive to comfort or concentration.

It was thus decided that heating built into the floor was the most suitable solution to the problem, giving complete flexibility of furniture arrangement and freedom from interference or damage and having a centralised control. A further advantage of the system was the flexibility of application, since for periods of the year studios would not require heating but the administrative and staff offices and the library would. Consequently sections of the building can be switched out and when staff rooms require heating in such sections they use the independent built-in "Temp-dair" convectors.

These were the design problems passed to the Electrical Consultants. At the time the designs were prepared little information on electrical floor heating could be found to give a reliable solution to the various problems and a considerable amount of research was entailed.

Effect of Floor Heating

The Structural Engineering Consultant was concerned at the possible damage accruing should the installation overheat, and, since the floor was built up of prestressed beams with hollow tile infilling, there was some point to his anxiety. The architects too were concerned at the possibility of hair cracking developing on the plastered ceiling surfaces. The National Building Research Institute had carried out observations on concrete slabs exposed to the sun, and from this information it was decided that the temperature of the floor heating cables should be limited to 150° C.

The Electrical Consultants gave the assurance that such temperatures could be calculated and advised that the floor temperatures would not get out of control nor the cables overheat. On the final installation it was found that temperatures were as calculated while providing excellent comfort conditions in the building and not causing ceiling cracks.

Effect of Floor Heating on Floor Coverings

Temperature calculations indicated that floor finishes would not be affected. That used was $\frac{1}{4}$ in. cork linoleum laid with adhesive. No excessive temperatures were measured even when a carpet and underfelt were on the floor or the surface covered by solid furniture.

Liability to Damage

Although precautions were taken in the pre-location of floor spring hinges, spring door stops and other floor fixings it was realised that the cables could be damaged by bolts, etc., let into the finished floor. The Electrical Consultants were satisfied that such breaks could be rectified and in fact several cables were damaged by sub-contractors and were successfully repaired.

Thickness of Floor Finish

The Electrical Consultants advised a minimum cover of screed plus finish of $1\frac{1}{2}$ in. over the cables, and in some cases only $1\frac{1}{4}$ in. was obtainable.

General Arrangement

The system was the non-withdrawable type in which the floor heating cables were laid directly on the concrete floor slab and covered with plaster screed. The cables were taken to terminal boxes built in to the outside walls at skirting level at intervals of approximately 15 feet. The terminal boxes were connected to distribution boards by means of rubber insulated wire in conduits cast into the concrete slab. At the distribution boards miniature circuit breakers were used. The boards were in turn connected by means of paper insulated cables to the transformer supplying the heating system, located in the basement substation.

Construction Problems

The problem of laying out approximately 1,000 feet of cable from a coil in parallel lines across the building at a pitch of some 5 inches so that the two ends relate accurately to the terminal box was encountered. To do this by hand with a minimum of flexing of the cable, even with the aid of chalk marks locating the spacing of the lines was tedious and unworkmanlike. The cable once laid had to be located and temporarily held down by placing bricks on the lines at intervals. On reaching the end of the circuit the adjustment of the complete length of cable throughout its run of some 36 parallel lines in order to bring the free end in accurate relationship with the terminal box was even more tedious. Moreover in order to avoid displacement of the lines once laid and damage during construction it was necessary to cover the cables with about $\frac{1}{4}$ in. of plaster screed immediately after laying, no easy task on the loosely laid cable. This meant of course that a section of the floor had to be cleared to permit the laying of the cable and that plasterers had to followup with the screed immediately.

The author finally evolved the method whereby a series of rollers of diameter equal to the particular pitch involved and spaced at corresponding intervals along lengths of steel channel units located on opposite sides of the floor section. The cable was then led off the drum mounted on a cradle and round the rollers, which thus established the parallel lines and facilitated the adjustment of the free end in relation to the terminal boxes. The channel units were then drawn towards the outside edges of the adjustment of the free end in relation to the terminal box. The floor section by means of bolts strutted off the concrete column, thus pulling the cables tight and straight between opposite rollers. Cables were then pushed down on to the concrete surface by 9 in. x 1 $\frac{1}{4}$ in. planks propped off the slab above so that the former lay flat on the concrete and at the bottom of the screed. The plasterers then screeded the central section and when this was set the channel unit rollers were removed, the loops of cable bedded down and the screeding completed.

It was found in practice that the work went very smoothly once the first circuit had been done and the method fully understood by the electricians, plasterers and the building contractor.

Cost

The following are the final costs of the floor heating installation:

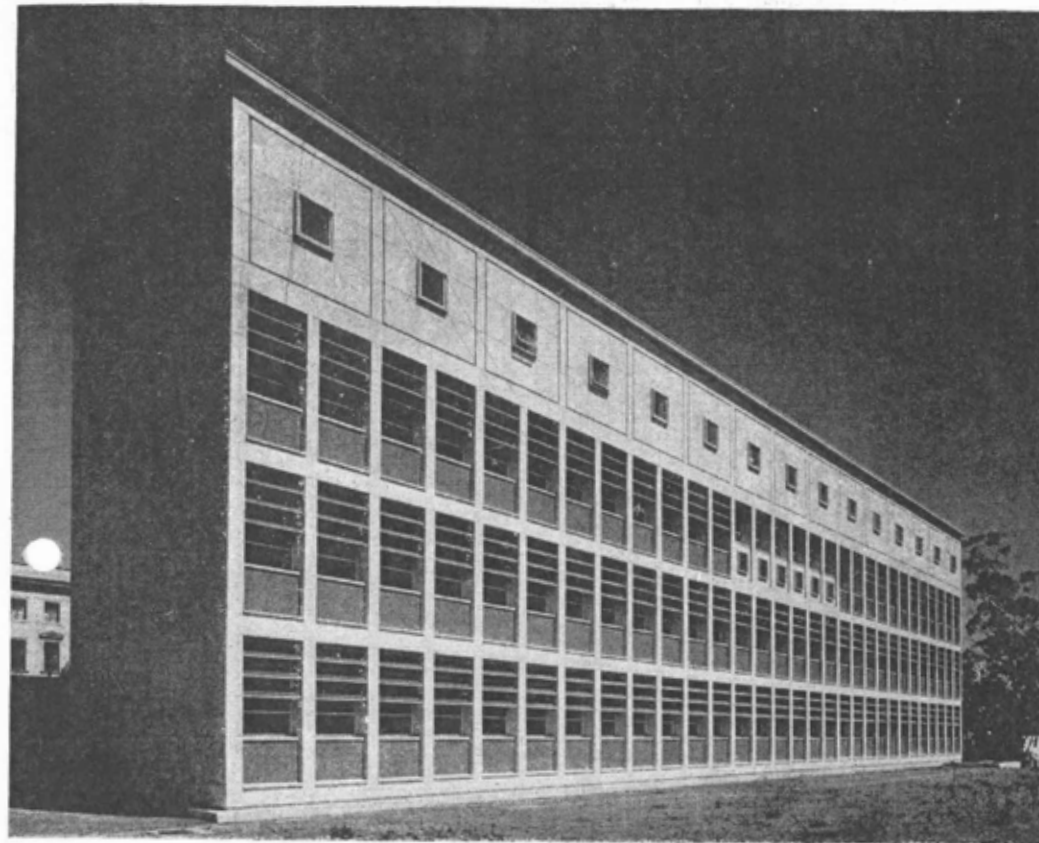
	s.	d.
A. Installation costs per square foot of heated floor area		
Floor heating cable installed, including terminal boxes and connections	2	3
Share of power supply, including switchboards, cables and transformer	3	0
TOTAL	5	3
B. Running costs of floor heating installation:		
Costs of electricity consumed for one 30-day month based on present Johannesburg electricity tariff, which was recently increased (per square foot of area)	1	35d.

The foregoing costs may be compared with those which have been obtained for equivalent electric heating installations (it should be noted that the floor heating installation was designed to match in cost and performance an equivalent installation of convector type heaters).

Initial Cost for Convectors

Ordinary convector heaters installed complete (Cost per square foot of room heated):

	s.	d.
Convector plus connection to distribution board	1	9
Share of power supply equipment, including switchboards, mains and main power transformer	3	6
TOTAL	5	3



Photography by J. G. Boss.

Running Costs of Convectors

Cost for one 30-day month based on present Johannesburg tariff and on 200 running hours per month.

Electricity per square foot of room floor area	From:
1-4d. to 2-3d.*	

paper published in 1958 gives the following installed costs for floor heating equipment in the United Kingdom. Unfortunately it is not made clear whether the costs are inclusive of the power supply equipment but it is thought that they were not inclusive:

Directly embedded system	2s. 9d. to 3s. 6d. per sq. ft.
Withdrawable system	7s. 0d. to 8s. 6d. per sq. ft.

Operating Experience

It was found that floor heating system produced very comfortable conditions as the rooms and corridors were uniformly warm and there was no sensation of temperature gradient from floor level to upper level. There was also an absence of cold draughts across the floor. The sensation of warmth at the feet was pleasant and the floor was pleasantly warm. Apart from the supplementary

* Depending on occupancy of rooms and assigned utilization of heating.

The North elevation of the studio wing. The Art studios, with small north windows occupy the top floor. A visual accent is provided in the centre of the facade by the six red mosaic panels, the remainder having blue glass mosaic spandrels as elsewhere. The deep recesses of the openings accommodate and provide hail protection to the aluminium framed neutral tint glass louvres, six of which were temporarily missing when the photograph was taken.

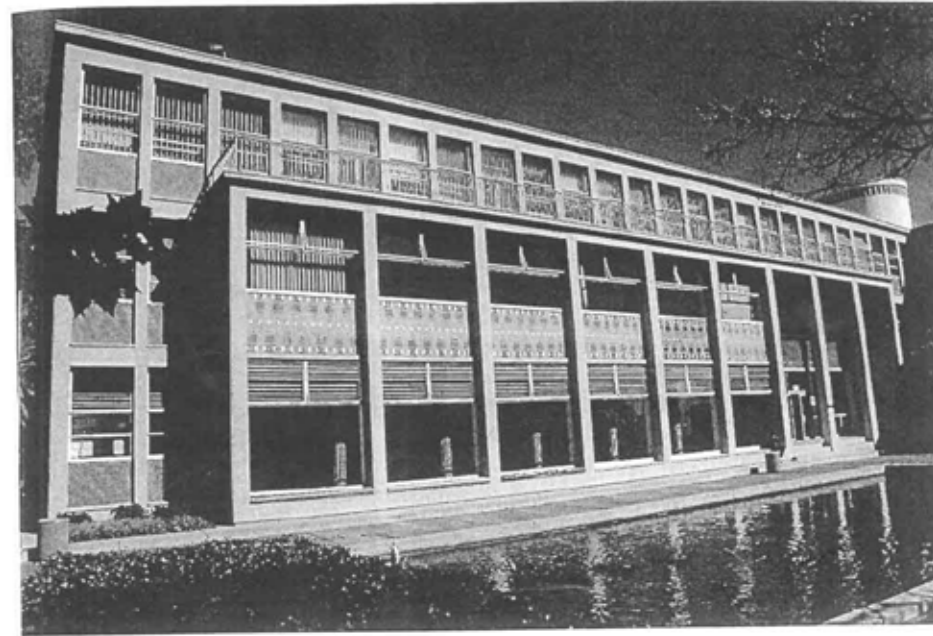
heating in the staff offices, fan heaters were installed in the Art studios for the benefit of nude models to ensure that it would be possible to maintain the studio air at comfort temperatures at all times. Owing to the large window area of these rooms there was a considerable area of infiltration and it was necessary to ensure that the air be kept warm.

The architects acknowledge the helpful services of W. J. Carter, B. S. L. Gloag and L. Gruzd in the preparation of drawings and pay tribute to the sustained enthusiasm of Mr. Gruzd whose intimate knowledge of the scheme and ubiquitous presence was valuable during building; also to the contractor and sub-contractors and in particular to Mr. A. Sutherland, the general foreman.

W. D. H.

**Working as a Team:
From the Transvaal Group to the John Moffat Building**

Gilbert Herbert



We regard the architecture which resulted from Fassler and his team's collective design as the finest building created at Wits in the second half of the twentieth century.

—Professor Alan Mabin, Head of Architecture and Planning, Witwatersrand University, referring to the John Moffat Building on the occasion of the celebrations marking its fiftieth birthday.

INTRODUCTION

In this account we look at the design of the John Moffat Building, built in the late 1950s as the home of the University of the Witwatersrand's Faculty of Architecture and Town Planning, against the background of an ethos of cooperation and teamwork which characterized the School of Architecture, its staff and its students. We also look at the close ties between the School and the small band of practitioners who pioneered the Modern Movement, an overlapping alliance initially known as the Transvaal Group.

Herbert, G. and Donchin, M. (2013).
The Collaborators: Interactions in
the Architectural Design Process.
Ashgate Publishing Limited: Eng-
land (page 147 – 203).

This chapter has been written by Gilbert Herbert, who wishes to insert this personal note: 'It has been my practice, when writing an academic paper, to avoid the use of the first person. This chapter is an exception to my general custom. The first person is used here because I was personally involved in the story for much of the period under discussion: as a student and then a teacher from 1942 until 1961, when I resigned from the staff at the School, on emigrating to Australia. I was also one of the architects in John Fassler's team which designed the John Moffat Building. Ultimately, for a short period, I knew the building from the user's perspective, as a teacher discussing students' work over the drawing board, pontificating in its lecture theatres, or researching in its library; and as an architect working in its collaborative workspace, Studio Seven.'

THE SCHOOL OF ARCHITECTURE AND THE TRANSVAAL GROUP

When as a freshman in 1942 I entered the School of Architecture—then housed in the imposing neo-classical Central Block of the University of the Witwatersrand—it was already the stuff of legend, as the focus of the cultural revolution, architecturally speaking, which had transformed South Africa from a provincial back-water into one of the leading forces of *avant garde* architecture outside of Europe. That revolution had taken place in a few short years, from 1928 to 1932, the principal arena was the School of Architecture at the University of the Witwatersrand, and the principal actors were the Head of the School, Professor Geoffrey Eastcott Pearse, the Senior Lecturer, Stanley Furner, and the young lecturer, Rex Distin Martienssen.

Geoffrey Eastcott Pearse (1885–1968), the first Professor of Architecture in South Africa, like many of his generation, had no formal university training, but acquired his professional skills through a process of apprenticeship while attending part-time courses at Institutes in England and South Africa. His professional status came when he passed the Final Examination of the Royal Institute of British Architects in 1912. He chose his mentors well. At the Regent Street Technical Institute his teachers included A.E. Richardson and Banister Fletcher, and the offices he worked in included that of Leonard Stokes, then President of the RIBA and, on his return to South Africa, the prestigious firm of Baker and Fleming.¹ Because of his associations his approach to architecture was traditional, eclectic, but with a strong affinity to classicism. Back in South Africa after the Great War (he had a commission in the Royal Engineers, serving in the Middle East) he practised architecture and taught courses at the University College. When full University status was granted, he was appointed to the chair in 1921. Pearse's role in the revolution was a permissive rather than an active one. He recognized modernism as the wave of the future, and while it was not to his taste he was tolerant and wise enough to let it take root in his School.

Pearse made do with part-time assistance until 1925, when Stanley Furner (1892–1971), an English architect, was appointed Senior Lecturer.² While Furner's education had been no less traditional than Pearse's, his experience and outlook was wider. He taught for a short while at the Architectural Association, and then

moved to a post at the Bartlett School. Furner was a forward-looking man, widely read, and he brought to the fledgling school at Wits (as the University of the Witwatersrand was informally known) not only a knowledge and appreciation of the *avant garde* of Central Europe, but also the writings of Le Corbusier. In 1928 he resigned, to go into private practice, in the highly-regarded firm of Kallenbach, Kennedy and Furner. When in 1931 Pearse took six months' leave to take up a Carnegie grant, he persuaded Furner to temporarily come back to the School, and take charge. Furner, through his dissemination of the writings of the leaders of the modern movement—presented with critical understanding—was the catalyst of the revolution that was to take place, but not its main instrument. The key figure in this dramatic transformation was the young South African architect, Rex Martienssen, who had just been appointed to the staff of the School. Furner and Martienssen were well acquainted, as the young man had worked in Furner's office during the summer vacation.

MARTIENSSEN AND THE TRANSVAAL GROUP

Rex Distin Martienssen³ (1905–1942), born in the Cape Province but educated in Johannesburg, enrolled in the degree course in Architecture at the University of the Witwatersrand in March 1923. His progress as a student was chequered, disrupted by his inability to pass the required course in mathematics (switching to the academically less rigid Diploma course, then back to the Degree course when the mathematics requirement was dropped), and completed his final year in 1928. This stumbling career ended triumphantly with his winning of the A.S. Furner Prize for originality in design. His subsequent academic career, as a charismatic lecturer and a scholar, was brilliant, and his research was rewarded with the first master's degree in architecture (1939) and the first doctorate in architecture (1941) in South Africa. His academic studies were reinforced by the experiences of overseas travel, on a students' tour (accompanied by his friend Gordon McIntosh) in the winter of 1925–26, and with Norman Hanson in 1930, where at Stuttgart, with Mendelsohn's Schocken Store and the Weissenhofsiedlung they had an epiphany, experiencing at first hand the 'shock of the new'. In 1933 Martienssen was in Europe once again, and in Paris met Le Corbusier for the first time. This contact proved to be a turning point in Martienssen's career.

Le Corbusier became the godfather of the movement, who through his writings and his architecture, and finally, through his personal patronage, gave direction to the emerging new architecture, and defined its language of expression, its grammar and its vocabulary. Le Corbusier was the epitome of the artist as individual, the unique genius, the lone wolf, or—to mix our metaphors—the cat who walked by himself. Pierre Jeanneret was his right-hand man, his assistant, but there is no



Fig. 4.1 Professor G.E. Pearse

doubt which of the two cast a giant shadow, and which worked in the shade. In this, Le Corbusier—like Frank Lloyd Wright—was the towering individual who had helpers and disciples, but never real partners in the creative act. Now while Le Corbusier was Martienssen's guiding light, the *fons et origo* of the emerging modern movement in South Africa, Martienssen lacked the egoism of the master, and worked best when surrounded by allies and associates. Consequently, the way in which South African architecture evolved was that of a movement whose leader was first among equals. Martienssen was the acknowledged leader, but the force was that of a consortium, not a formal association but a loosely constituted alliance of progressive practitioners and teachers and students of the School of Architecture, a coterie of kindred spirits which Le Corbusier dubbed *Le Groupe Transvaal*. Martienssen himself would perhaps have preferred a more ordered arrangement, but his colleagues were happy with the flexibility of their ad hoc associations.⁴ This penchant for informality was later to characterise the professional exercises in collaboration, culminating in the design of the John Moffat Building. At the core of the Transvaal Group was a senior echelon: Rex Martienssen, Norman Hanson, and Gordon McIntosh; a fairly large intermediate category, whose most important members were John Fassler, Bernard Cooke and Duncan Howie; and a younger group, all School of Architecture students, including Monte Bryer, Kurt Jonas and Roy Kantorowich.

This group was characterised by its team spirit and group solidarity. While this was generated and encouraged by Martienssen, the philosophy of teamwork did not derive from Martienssen's mentor, Le Corbusier, but rather reflected the philosophy of Walter Gropius, the apostle of team-work. We have a paradox here, for the relationship of the Transvaal Group to Gropius was ambivalent. Two houses by McIntosh, the first modern work associated with the Transvaal Group, were dubbed his Gropian houses. Looking for international recognition, the approval of Gropius was sought for the South African movement, and the group received in return a warm letter, generous in its commendation.⁵ Initially the Gropius-Mies-Corbusier triumvirate were the guiding lights of the movement, but as the influence of Le Corbusier gained ascendancy, that of Gropius was consistently downgraded.⁶ Nevertheless, while Gropius as an inspirational source of architectural form declined, the team ethos which Gropius advocated became—whether knowingly or not—the spirit in which the Transvaal Group functioned. In later years this ethos was commemorated when the *South African Architectural Record* devoted an entire issue to an analysis of the holistic approach of Walter Gropius.⁷ In the eyes of the Transvaal Group, Gropius, although admired, never attained the heroic status of Le Corbusier, but then, this more modest man—who insisted the age of the prima donna was dead—would not have wished it.⁸ Eventually, as the group matured, the infallibility of Le Corbusier himself was challenged. The critical year was 1942—when the *avant garde* South African architectural world was shocked by the premature death of Martienssen—as the first public questioning of Le Corbusier's authoritarian approach took place in the *South African Architectural Record*, in a debate generated by a critical article by Roy Kantorowich.⁹

As we shall see, what is relevant for us in this discussion is how the spirit of collaboration and team-work of the Transvaal Group manifested itself in the School

of Architecture. Before doing so, however, we should also briefly point out that the emergence of modern architecture in South Africa depended not only on theory but in the translation of theory into practice, and that its iconic works were produced not only by talented individuals but by small partnerships of practising architects working in harmony. Most notable of these were the architectural firms of Hanson-Tomkin-Finkelstein and Martienssen-Fassler-Cooke, triads of partners whose collaboration was based on a common education, personal friendship, congruence of approach, and complementary talents. We are not talking of teamwork in the sense of Gropius and the Architects Collaborative, or of today's mammoth architectural firms, those organizational conglomerations dealing with huge practices. Rather, we are dealing with small intimate groups of colleagues working together, with little draughting or technical assistance, handling a limited output of modest projects. They operated in different contexts: Hanson's partnership was a commercial practice, exposed to all the constraints that implied, while Martienssen's team was cushioned from the market place by its protective academic shield.

COMBINED OPERATIONS: COLLABORATION IN THE SCHOOL OF ARCHITECTURE

The Architectural School of the University of the Witwatersrand,¹⁰ which I entered in 1942, was one of contradictions. As was only natural, there was keen competition between the students when it came to the originality of our design projects, and the grades they received. On the other hand, there was a remarkable *esprit de corps* among the student body, and pride in the school as a collective corpus, with its own unique identity and its own ethos. There could be a *Department of Mathematics*, a *Faculty of Engineering*, but Architecture was a *School*, in the best creative and academic sense.¹¹ This spirit manifested itself in different ways. Group projects were encouraged. Major design projects were often undertaken by teams of two or three students, where our individual talents—this one a consummate planner, this one a wizard at perspectives—were melded for the common good. Students from more senior years would casually walk into the studio, and offer their more mature criticism or advice. Scanning the *Architectural Record*, which published a generous selection from the Annual Exhibitions of Student Work, one is aware of the extent of this cooperative work. Even the final fifth year project—we called it the thesis—was often undertaken as a group. My own thesis was undertaken with one other colleague, but I note some earlier, albeit extreme cases, which involved groups of five to ten students. Working together in the studio was a way of life, and late night sessions, as deadlines for submission drew near, generated a sense of intimacy and cohesion.

STAFF-STUDENT COLLABORATION

There was, however, another level of cooperation, in which students were directed and motivated by a democratic corporate body, the Students Architectural Society,

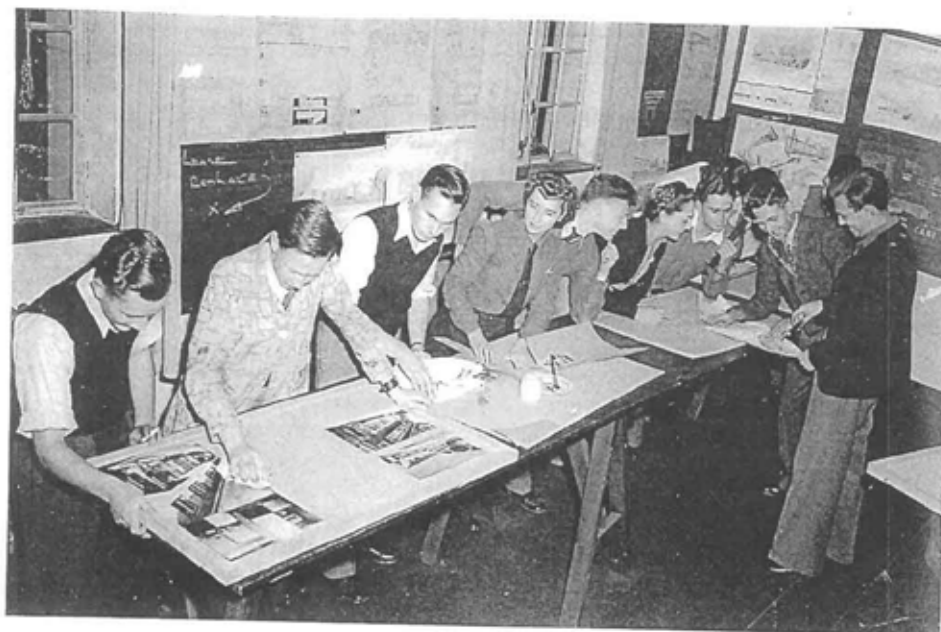


Fig. 4.2 Students preparing exhibition

founded in 1925. On entering the School I was soon aware of the rich history of achievement of this Society. Under Kurt Jonas, its dynamic chairman, it had initiated two legendary events. The first was the Congress and Exhibition of Abstract Art, held in 1937, which 'was concerned with establishing the essential unity of all the arts, including architecture, in terms of an abstract aesthetic'—a very Gropian concept. This was followed by an ambitious Town Planning Congress in 1938, for which the students prepared plans for 'a model native township for 20,000 inhabitants', and the Transvaal Group, 'a new business centre for Cape Town'. The Society continued well into the next decade with its presentation of major exhibitions. To name a few: 'Rebuilding South Africa', in 1943; the exhibit showing the South African approach to housing in a larger 'National Housing Exhibition' organised by the US Office of War Information and the South African Institute of Architects; the comprehensive 'Architecture in South Africa Today', opened by the Mayor of Johannesburg in the Selborne Hall in August 1946; and 'The Art of Architecture', in 1948. The time-consuming preparation of these exhibitions was carried out with the full support of the teaching staff, and often with the cooperation of the profession. The Society also initiated several series of public lectures not only on South African architecture, but on topics such as Native Housing, Contemporary Russian Architecture, Art and Architecture, Art and Engineering, or Russian Culture and Architecture. It also organised major symposiums—often in association with the Institute of Architects.

Finally, there was the students' contribution to the *South African Architectural Record*. This monthly journal was officially the organ of the Transvaal Institute of Architects, but in practice it was very much a School magazine. We shall deal with

it again, when we consider its production as a cooperative staff endeavour, but at this point in our discussion it is relevant to stress the students' role. Not only did student work appear annually, but the lectures sponsored by the Student Society contributed much to its intellectual content. In addition there was a specific student section, the monthly Students Forum, whose material ranged from valuable essays on historic buildings to correspondence on National Housing and an interview with Maxwell Fry.

Not only did the collaboration of staff and students characterise the more traditional areas of academic activity—lectures, exhibitions, publications—but it extended to some less usual channels. The first was a product of the times. In the 1940s South Africa was heavily involved in the war, with its forces engaged in East and North Africa, then in the Italian campaign. Many students—I amongst them—volunteered for service and enrolled in the Rand University Training Corps, as an interim measure before going into the regular army. Pearse, who was second-in-command of the corps, explained its purpose and methods. 'In 1940 the University was asked to recruit students for various branches of the army and air force ... Training took place every Saturday morning at Milner Park and lectures were given in the evenings twice a week. In January and July the different Units went to the various military centres for training.'¹² Most of the architectural students went into the Engineering Corps. We had weekly training sessions in the fields across from the campus, where we learnt such arcane skills as making machine gun emplacements or laying minefields; and in the long vacations we went for extended periods to regular military camps: the Engineering Corps base at Spitzkop, and the camouflage school at Voortrekkerhoogte. Our immediate officers were two of our teachers, Capt. John Fassler and Lieut. Duncan Howie.

The natural camaraderie which existed between soldiers, and the intimate relationship with officers who were well known to us from the design studios and lecture theatres, contributed to the sense of unity which characterised the School.

On campus the School undertook combined operations of another sort. A programme of practical building experience was initiated, and for several weeks each year—until we ran out of projects and budget—staff and students worked side by side constructing small buildings to our own design down at the sports fields: a brick-built scoring box at the cricket grounds, or steel-and-concrete pavilions in the style of Mies van der Rohe next to the tennis courts. Shoulder to shoulder, staff and students laboured together, digging foundations, mixing concrete by hand, erecting scaffolding and laying bricks—the latter a Fassler speciality.

During the war the School of Architecture was a small department, with less than a hundred architectural students and a limited staff. During the whole period of my studies (1942–1946) I was taught the core subjects (design, construction, architectural history and urban planning) by only four architects: Professor Pearse, Rex Martienssen (the senior lecturer), John Fassler, and Duncan Howie. This tight-knit group (diminished by the death of Martienssen in 1942) was only expanded after the end of the war, when returning service-men swelled the intake of students, and in the years 1946–48 some new lecturers were appointed, including those most relevant to the John Moffat story.



Fig. 4.3 Gas Warfare drill: Capt. Fassler, Lt. Howie, University students



Fig. 4.4 Practical building exercise: staff and students working side by side



Even in this expanded form, the staff of the Architectural Department remained relatively small, especially as the number of architectural students by 1948 had grown significantly, to 264. One of the consequences of the limited size of this group of teachers was that personal relationships on the whole were cordial, and cooperation—professional and intellectual—became a norm. This of course was fortunate, because the enforced intimacy could equally have led to rivalry, disputations, and back-biting. Many of the teachers and their wives visited each other's homes, participated in their celebrations, and loyally attended each other's public lectures and exhibitions. Some of us, reinforced by the more intellectually-minded professionals such as Norman Hanson and Roy Kantorowich, met regularly (usually at Professor Fassler's house, once over a weekend at a colleague's farm) as an informal Discussion Group to debate cultural issues of the day. As professional architects we served together on committees of the Transvaal Provincial Institute of Architects.

ACADEMICS AND PROFESSIONAL PRACTICE: A QUESTION OF BALANCE

At this time, the University's policy in relation to private practice was that full-time members of the academic staff could practise on a modest scale, but were not permitted to maintain an independent external professional office. In other words, understanding that the architects on their staff needed to maintain their professional skills in real-world situations, the University allowed the academic staff to undertake projects, but only to the extent that these did not interfere in

Fig. 4.5 Staff Party for Richard and Dione Neutra
Left-right: Bette (Spence) Pinfold (seated), Carl Pinfold, Duncan Howie, Valerie Herbert, Sheila Fassler, Gilbert Herbert, Ugo Tomaselli
At back: Graham de Gruchy, [unidentified], Wilfred Mallows, [unidentified], Lesley Gruzd, John Fassler

any way with their commitment to full-time teaching. Within these parameters, on those rare occasions when a member of staff received a commission he could not handle by himself there were two courses open to him: he could collaborate with a colleague, or with an outside firm. For modest commissions, in-house collegiate collaboration became a norm, and many smaller jobs were carried out in this way. We shall look at some examples, when we discuss such ad-hoc partnerships between members of the John Moffat team, prior to the undertaking of that major project.

A loose framework was set up for these associations, with the establishment of what was called Studio Seven, which provided draughting space in which staff could carry out their professional work. This was an ingenious solution which kept commercial activity on campus, but separate from the academic facilities. In the post-war era, when accommodation was at a premium, Studio Seven was located in a separate part of Hut TSA, one of the temporary huts which housed the student design studios. Later, as we shall see, more generous space for Studio Seven was included in the programme for the John Moffat Building, the School's new home.

For larger commissions, requiring the support structure of an established professional office, association with an existing practice was often the chosen path. In general, staff members did not have a private office of their own, and if they conducted a modest private practice as a one-man undertaking it was usually from their own homes.¹³ Collaboration with outside firms usually came at the latter's initiative, and ranged from residential buildings to much larger projects which were usually undertaken off-campus, with administration and supervision usually the responsibility of the commercial partner. We shall look at an example of such an ad-hoc association between a member of staff and an outside practitioner, one taken from my own experience, before we deal with two major cases, the one unique (the design of a commercial project, Escom House, by Professor Pearse and his colleagues), the other generic and enduring, the role of academic staff in the design of University buildings.

I worked in association with Nathan Fink (the Finkelstein of Hanson-Tomkin-Finkelstein) on two occasions. When he was invited to participate in a limited competition for the design of the Oxford Synagogue, he asked me to join him. I conceived the design, and produced all the drawings, setting up an improvised studio in the basement of my home. Again, in the case of the Cinerama Theatre in Johannesburg, a project contemporaneous with the John Moffat Building, it was Fink who was offered the commission. This was possibly on the strength of his previous experience with cinema design,¹⁴ but another reason perhaps was that he had previously worked professionally for the client, Shim Lakofski. As Lakofski's daughter Denise Scott-Brown, the well-known architect, recalls, her mother was at the Wits architectural school for a couple of years, and got to know many of the heroes of the Transvaal Group. When she married, she hired her old friends, Hanson-Tomkin-Finkelstein, to design the Lakofski house. It was probably Hanson who was responsible for the bravura design, but it was Finkelstein who signed the official drawings as the owner's architect. At Fink's invitation, I became his associate architect, and in this role designed the Cinerama Theatre, did the working drawings, and all the details. During the design process Fink maintained contact

with the client, and took over the main burden when it came to the realisation of the Cinerama project. For instance, he handled the technical problems, dealt with the requirements of the City Engineers Department, checked the sight-lines, managed the contract, coordinated the consultants, and supervised the construction.

ESCOM HOUSE, JOHANNESBURG, 1935

Before we look at the University projects in whose design the School of Architecture was involved, we must deal with a particularly significant building undertaken by Pearse and his colleagues, not for the University but for a large quasi-governmental organization, the Electricity Supply Commission (Escom). The Escom House experiment in collaboration was unique, in the sense that it involved a commercial client outside the accustomed academic framework.

The circumstances in which Pearse and some of his University colleagues became involved in the design of the Escom office tower, at the time the most prominent building in Johannesburg, are not clear.¹⁵ The design history of this prestigious 21-storey building involved three stages. Preliminary plans were prepared by the Commission, which subsequently formed the basis of the scheme prepared by Mr. P. Rogers Cooke. Ultimately the project was carried out with Professor G.E. Pearse and his staff as consultants, after extensive revisions had been made to the interior and exterior treatment of the building.¹⁶ P. Rogers Cooke, a well-known Johannesburg architect, had in the 1930s been responsible for a series of major theatres in Johannesburg, Pretoria, Cape Town and Durban. The most impressive, the Colosseum in Johannesburg, of 1933, was a majestic structure part Art Deco, part monumental Egyptian, housing a 2,279-seater 'atmospheric' auditorium, and was long regarded as the flagship of the African Consolidated Theatres chain. By 1935 Cooke's design for Escom had taken form, and a splendid watercolour perspective by H.L.G. Pilkington was exhibited at the annual South African Academy. Then, for reasons that are not immediately apparent, but go beyond the scope of this study, Cooke's connection with the project severed when construction according to his design had already begun, and had reached foundation level. The new architects were committed to retaining the existing column layout.

When Pearse took over the project late in 1935, he called upon his University colleagues to work with him. John Fassler headed the special design office where, under Pearse's direction, he prepared the working and detailed drawings.¹⁷ He was joined by Bernard Cooke (no relation to Rogers Cooke) as part of the design team, Rex Martienssen, who designed the main entrance and other minor details, and the sculptor Willem de Sanderes Hendrikz, a lecturer in the Fine Arts Department associated with the School, who did the art work.

Considerations of building regulations, zoning laws, sight lines and permissible volumes, together with economic imperatives, determined the form of the building. The stepped form with its central tower and its vertically linked windows also owes much to American skyscraper design. The vertical fenestration and undecorated surfaces recall the News Building in New York by Raymond Hood, but the most direct prototype is the Milam Building in San Antonio, by George Willis.

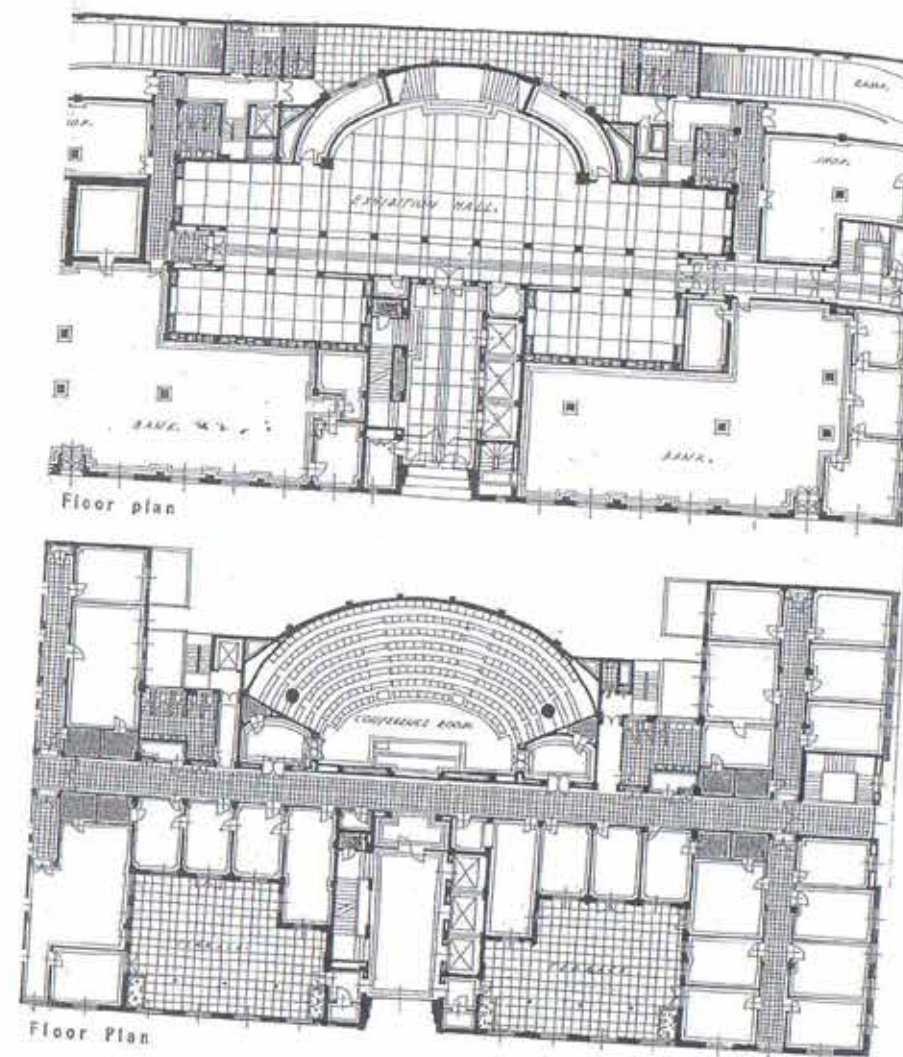


Fig. 4.6a Escom House: plans



Fig. 4.6b and c Escom House: interior of Hall of Achievement

This too is a 21-storey reinforced concrete structure—the tallest in the USA when opened in 1928—and was the first high-rise air-conditioned office building of its day. There is a hint of Art Deco in Escom House, perhaps a heritage of the original Rogers Cooke design. Its main external distinction was the monumental entrance designed by Martienssen, which brings to mind not only the entrance to Gunnar Asplund's Stockholm Library, but also the entrance designed for a Magistrate's Court, submitted for a competition by Martienssen, Fassler and Cooke in 1934. Despite the involvement of these three as individuals in the design process, this is not a Martienssen-Fassler-Cooke project, and the formal treatment owes nothing to the Corbusian canon so beloved by the Transvaal Group.

Fassler had become increasingly interested in the application of advanced technologies in both structural and environmental control. In his published account of the design of Escom House we note the emphasis on technical innovations.¹⁸ Special attention was paid to the integration of air-conditioning throughout the office areas through the provision of horizontal and vertical ducts, the creation of zones of control, and the installation of air-conditioning plants at five different locations ranging from the 15th floor to the basement—a split installation which presages by many years that of the United Nations Building in New York.

It is in the modernity of the interior that we sense the more significant signs of the University staff's design intervention. In addition to rentable office space the building accommodated the administrative headquarters and offices of Escom itself, the Steel Sales Company of Africa, ISCOR, and the Union Steel Corporation. The main public spaces were two banks on the ground floor, sympathetically designed by the Corporation's architects, a double-volume exhibition hall, the Hall of Achievement, on the ground floor, and a Conference Room seating 200 above.

The Hall of Achievement was a permanent exhibition space characterised by its highly-sophisticated materials: stainless steel handrails and trim, glass block panels, and recessed lighting. The height of the free-standing columns was accentuated by vertical striping in black and white marble, an effect immortalized in a fine water-colour perspective by John Fassler. The space was dominated by a large mural sandblasted on black glass, designed by Willem de Sanderes Hendrikz. Another element in the design of the functional spaces was an arc-shaped auditorium, fully equipped as a motion-picture theatre. We shall come across the integration of art work by a close associate of the architects, and the motif of vertically-striped columns, when we deal later with the John Moffat Building.

The Escom House undertaking, and its successful conclusion, was a valuable experience for Pearse. It was also a test by which the University could measure his worth not only as an academic but as a practising architect. It no doubt eased the way for him, step by step, to become involved in the development of the campus, an on-going process we shall now examine.

UNIVERSITY CONTEXT: THE BEGINNINGS OF THE CAMPUS AT MILNER PARK

The campus of the newly-established University of the Witwatersrand was laid out in the 1920s with substantial rectangular buildings in the neo-classical style set



Fig. 4.7
University of the
Witwatersrand,
1930

symmetrically on a central axis, dominated by the impressive Central Block. The history of the founding of the University and the design and erection of its first buildings has been scrupulously chronicled¹⁹ and it is not necessary to recapitulate that story here. We shall, however, name the architects responsible for the design of the early buildings on campus—the firm of E.M. Powers and N.T. Cowin working in association with F. Emley and F. Williamson²⁰—and shall be looking at the Central Block, for it plays a significant role in the account that follows.

At the beginning of the 1930s the imposing façade of the Central Block, with its dominant portico of eight Corinthian columns, was little more than a shallow edifice screening a temporary structure behind, which provided the principal accommodation—the administration, the Departments of Geography and Law, the Anthropological Museum, and the University Library—until such time that funds could be raised for the completion of the permanent building. In December 1931 a disastrous fire destroyed the central portion of this building and the temporary structures behind, leaving only the façade intact.²¹ Two consequences relevant to our story ensued. There was an immediate imperative to replenish and rehabilitate the contents of the library²² and build a new structure to house it; and an eventual need to fill the vacuum behind the remnants of the gutted Central Block with a permanent building. It was these two projects that saw the beginning of a process that brought Pearse and the School of Architecture together with the official University architects in the designing of the buildings on the campus.

THE UNIVERSITY BUILDINGS: THE INVOLVEMENT OF PEARSE AND MEMBERS OF THE TEACHING STAFF

The University projects we shall be discussing were examples of collaboration of a comprehensive kind, and an enduring nature. From project to project not only did the names of architects recur, albeit in various combinations, but the work was

for the same client, it demanded a working relationship with the official University architects, it often involved university colleagues as professional in-house consultant engineers, and several of the buildings were constructed by the same contractor, John Barrow and Sons.²³

The University Library, 1933

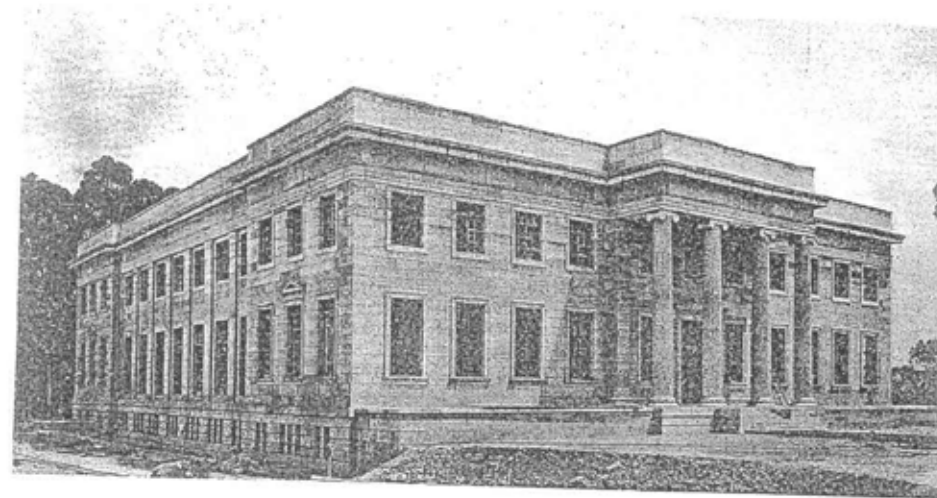


Fig. 4.8 The University Library (later Cullen Library)

The building to house the new University Library (from 1975 called the William Cullen Library) was designed in 1933 by the official University architects, Emley and Williamson and Cowin, Powers and Ellis, with input by the Librarian, Mr. P. Freer. Pearse and his staff were not professionally involved with this University project, but nevertheless had a significant input in the design. Pearse, who had been in America on a Carnegie Corporation Grant, explained what was a somewhat delicate situation:

Soon after my return I was asked by the University to assist in the design of the University Library. As the University architects Messrs. F. Williamson and N.T. Cowin had been appointed to design the building, I found it very difficult to interfere but I managed to persuade them to adopt my proposals and designs for the main reading room and the eastern, northern and southern façades, dealing with these in a classic manner to harmonise with the main buildings instead of using red brick as they had proposed.²⁴

Apart from mentioning that Fassler designed some of the furniture, Pearse does not indicate that the staff of his department was involved in the Library project. However, according to Fassler's daughter Mira Fassler Kamstra (herself an architect), her father played a significant, if unacknowledged role in its design. 'As a first year graduate,' she writes, 'he demonstrated his versatility in designing a Doric [actually Ionic] columned portico and classical façade and thoroughly modern reading and

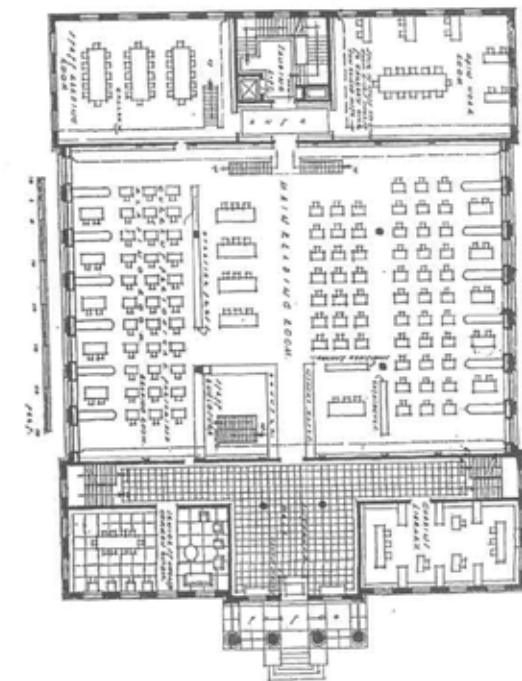
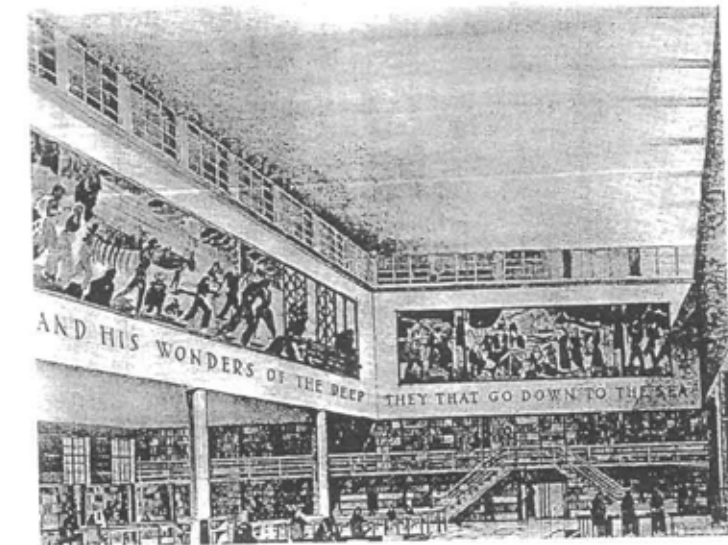


Fig. 4.9 Main Reading Room (perspective: John Fassler) and ground floor plan, Cullen Library

stack room to the new university library.²⁵ Fassler produced a dazzling perspective of the main reading room, with its magnificent murals,²⁶ and the plans as published appear to be from the same hand.

Pearse wrote an article commemorating the building, in which he took the opportunity to take the Librarian to task for his presumption in suggesting that he knew better than the architects how to design a library.²⁷ The article in the main is descriptive rather than judgmental, but where it ventures into that more loaded area it tends to mix low-level praise and restrained criticism. Pearse briefly notes the 'extreme simplicity' of the internal details and fittings, with simple teak tables and Windsor chairs, but is more expansive about the Senior Students Common Room, furnished by the students themselves, 'the furniture having been designed by Mr. J. Fassler, of the department of architecture. The settee and easy chairs are covered with a golden brown hide, the writing tables, fixed to the walls, are of veneered teak with chromium plated tubular steel supports. The long table... is also of veneered teak and the chairs are of chromium plated steel with red leather seats and backs.' This article is in a way a statement of intent. He guardedly approves the University's decision to continue the classical character of the campus, commending the fact that 'in the University Library an attempt has been made to harmonise the building with the existing main buildings on the site, as well as to make it fit for its purpose,' and his brief description of its character—'externally the building has been treated in a quiet and dignified manner with an Ionic portico at the main entrance'—is praise, appropriately modest, for after all it relates to his own design input.²⁸ But his enthusiasm for Fassler's modern furniture is a pointer to the future, the way he thinks the University should go.

The library building, with its classical portico, entablature and fenestration, does indeed show respect for its context, the central axis of the campus, responding in character to the dominant Central Block, and acknowledging its place in the hierarchy of the axis by its modest size, its more restrained detailing, and—a subtle touch—its choice of the Ionic style as against the Central Block's more flamboyant Corinthian. Several University publications have suggested that the design was modelled on the Petit Trianon at Versailles, and this has been picked up by most recent commentators.²⁹ I don't know if this attribution is based on documented sources, but in my view the analogy is an unlikely one. Whatever its sources, however, the Library is an architectural gem, refined and well-proportioned, and is today greatly admired.

Apart from its intrinsic merits, the building of the Library is significant for our story, from two points of view. It is aligned along the central axis of the campus, and is an extension northwards of the classical character of that axis. Its next door neighbour will be the John Moffat Building, the first building in the modern style to be erected on the axis.³⁰ In other words, the architectural character of the Library, and its scale and proportions, establishes the immediate context of the John Moffat Building. Preserving the integrity of that context, while designing something new, will be a challenge that the design team will have to confront. The second relevant point is that the University's decision-making bodies, it would appear, were becoming increasingly appreciative of the contribution that Pearse and his staff

could make to their evolving development of the campus. At the time, it seemed that the University council's policy was to continue to develop the campus along traditional classical lines. However, that policy was soon to be modified, when the next major projects were launched.

The Central Block, Restoration and Completion, 1936

The destruction of the Central Block aggravated the accommodation crisis which ensued from the University's continuing expansion. An international Appeal for Funds was launched by the University in August 1936. It was of limited success, but with the economic situation in South Africa improving dramatically it was buttressed by generous donations from local institutions and a grant from the Government. This encouraged the University to restore and complete the Central Block,³¹ and Williamson and Cowin, representing the two firms who were the University's original architects, were commissioned to undertake the job. It was mooted by the University that Pearse should be appointed an 'associate architect', but when this was opposed by Williamson and Cowin, he was once again named 'consulting architect', a professional nicety, for in fact he became responsible for the project.³² A drawing office was set up at the University, and all work was done on the site, the designs being executed according to plans prepared by Pearse's staff.³³ Jean Welz—newly-arrived in South Africa from Paris, where he had worked for Le Corbusier, and was later a well-known painter—was employed by Williamson as a draughtsman, and was responsible for the modern double-volume entrance foyer and staircases.³⁴ It was a serious design problem, and Pearse thought he made a very good job of it.

Duncan Howie played an important role in this project. 'Many years ago,' it was reported in an article upon his retirement in 1974, 'when he was in the temporary employ of the architects Messrs Williams and Cowin, he was closely concerned with the design and construction of the extensions to the Central Block.'³⁵ He was especially involved in the design of the Great Hall, an elegant 1100-seat auditorium with excellent acoustics. In an oblique way, the solving of the acoustic problem brought Le Corbusier, god-father of the Transvaal Group, into the picture.³⁶ The initial theoretical study and graphic determination, carried out by Howie, was sent for checking to the Sabine Laboratory, which confirmed its effectiveness. A London architect was then appointed as acoustic consultant, but he had no sympathy with modern architecture, and suggested breaking up the side walls with pilasters. Through the combined efforts of Roy Kantorowich, a young member of the Transvaal Group then visiting Europe, and the backing of Martienssen in Johannesburg, with whom he was in constant communication, the English consultant was side-stepped, and the French firm of Gustave Lyon, acoustic adviser to Le Corbusier on such major projects as the Palace of the Soviets, was appointed in his stead. Lyon himself had recently died, but his grandson, François Carpentier, undertook the commission. His recommendations involved only a slight modification to the ceiling's profile, but more significantly the addition of a shell-like sound reflector at the back of the stage (a *concha* acting also as a cyclorama),

Their role in the design of the Central Block served to establish Pearse and his colleagues in the School of Architecture as significant players as the building programme on the campus proceeded to evolve. Endorsement of the new architecture was not something that came easily to Pearse, but he recognised the wave of the future and, as in the reforms which Martienssen was pushing in educational policy of the School, he did not stand in the way of progress. It is true that the stylistic discontinuity of the modern interior showed little respect for the classical façade, but while Pearse accepted this, he was critical of the impurity of the classical idiom of the original building, deploring the fact that the entablature of the pediment did not align with that of the adjacent walls, a solecism he could not forgive.

Bernard Price Institute, 1937

The Bernard Price Institute for Geophysical Research is an unpretentious building whose somewhat austere architectural character belies its historical significance, for it was in fact the first uncompromisingly modern building on the campus. Its provenance is extremely interesting, and derives from the high drama unfolding in the immediate prewar years in Europe. The Institute was founded following gifts from the Carnegie Foundation and Dr. Bernard Price, in order to pursue research work in the field of geophysics, embracing meteorology, radio, lightning, atmospheric electricity and cosmic rays. Dr. Basil Schonland, a world expert on lightning, was to be the first director of the Institute, and the Institute was sponsored by the War Office in London. Claire Fulton explains the connection:

When war clouds gathered in Europe in the late 1930s, the need to develop radar was urgent. Commonwealth countries were secretly invited to send scientists to the UK for a briefing on the new concept of radar. No one went from South Africa. However, Schonland met distinguished New Zealand scientist Sir Ernest Marsden on a ship in Cape Town after the UK briefing. Copies of vague documents and notes made during the UK discussions were all Schonland had to work on. Incredibly, he and his team developed their own radar system, which was fully functional in South Africa just three months after the outbreak of World War II.

The architects of this building were the official University Architects, and Pearse was appointed consultant. Pearse must surely have welcomed the opportunity this appointment offered and, enjoying the support of the University administration, went on to play a major role in the development of the project. As he described it,³⁹ he once again got the University Architects to engage Gordon Chalmers and Jean Welz as draughtsmen, and the latter was chiefly responsible for the planning of the building. Fassler, who had met Welz in 1937, on the occasion of the Abstract Art exhibition, appreciated this opportunity to renew this contact with an architect and artist who, when living in Paris, had personally known Le Corbusier and Picasso. They now met on the construction site of the Institute, and Fassler wrote: 'In the somewhat torrid atmosphere of a wood and iron hut that served as an office for

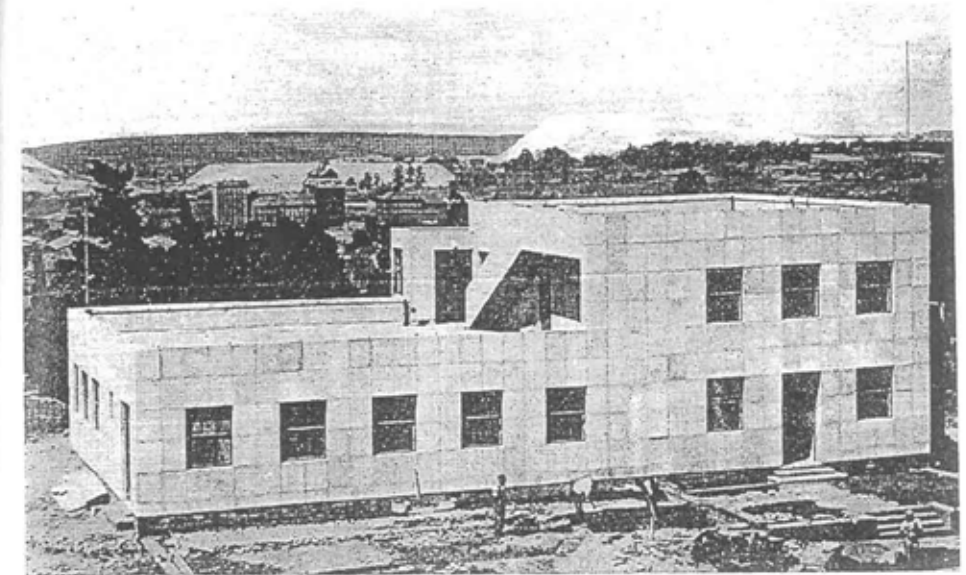


Fig. 4.12 The Bernard Price Institute for Geophysical Research

the architectural staff, we discussed painting, sculpture and architecture whenever we met.⁴⁰

The layout of the plan, the three-dimensional form, the regular fenestration, and the pre-cast concrete surface treatment are basic, but there are elements of grace in the interior: the staircase balustrade, and the fittings in the conference room and library. This modest building—it took just eight months to build and cost only £8,000—kept the door open for Pearse, and through him the School of Architecture, to have a say in the architectural development of the campus.

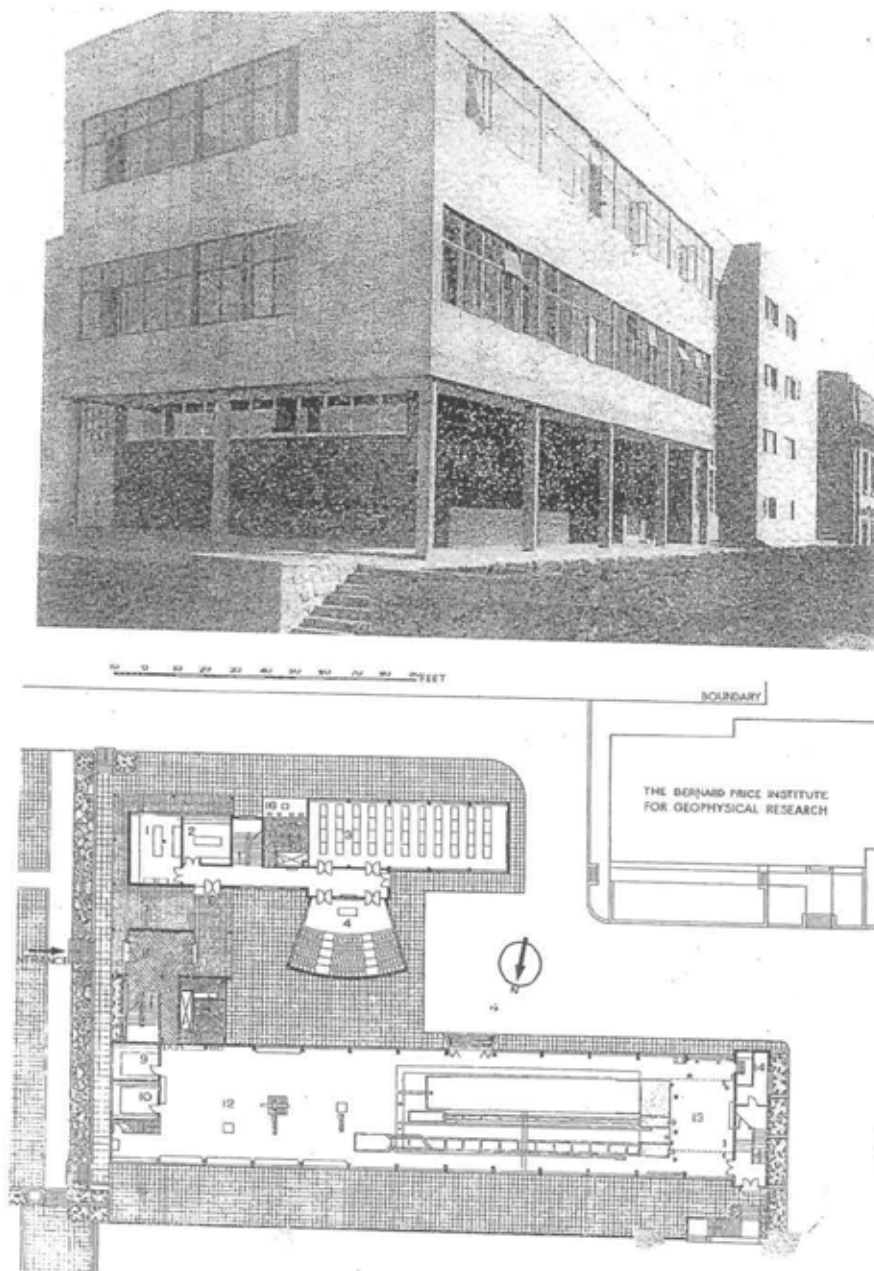


Fig. 4.13 The Hillman Building, view and ground floor plan

The Hillman Building, c.1939

This tolerance of a modern approach to design, hidden behind the classical façade of the Central Block, and the bland exterior of the Bernard Price Institute, became more evident in the next building entrusted to the architects of the School. Located behind the South West Engineering building and adjacent to the Central Block, the Wolf and Hirsch Hillman Engineering Building, completed in June 1941, was 'a building that broke with the classical style of the original five academic buildings of the grand campus design of the 1920s. Although constructed only a few years after the William Cullen library it belongs to a totally different era and makes a very modern statement about purpose and design. It is perhaps Wits' most original international building of the interwar period.'⁴¹

The architect responsible for the design of the Hillman Block was Duncan Howie, who describes the somewhat ambiguous terms of his engagement thus: 'While in the temporary employ of Messrs. Williamson and Cowin, then Architects to the University... and in the absence of Professor Pearse overseas, I was personally entrusted with the design of the Wolf and Hirsch Hillman Building. In the subsequent published accounts of this building my work was recognized in as much as my name was linked with that of Professor Pearse as a collaborating architect.'⁴² It was an austere building, a character dictated partly by the wartime conditions then prevailing, but also by Howie's own approach to architecture, largely derived from considerations of purpose, economics, and ease of maintenance.

The planning is a case study in the skilful application of the principle of articulation: laboratories, staff offices, drawing halls and lecture theatres each planned in a separate wing, the major elements linked by a recessed stair and toilet tower. In an article discussing 'some aspects of the problem and its solution' Howie explained the rationale of the plan, and why, for this complex building of variable scale and functions, he rejected the traditional square plan typical of all major buildings on the campus.⁴³ This is a summary of his main arguments: the square plan with its internal court implied the limitations of the Italian palazzo whose plan, being of an elementary order, cannot meet the dictates of technical organisation, such as the practical and technical requirements of a laboratory. There is an immediate conflict between the palazzo prototype's externally imposed order and repetition and the demands for the specific and functional expression of the internal organisation. Howie's solution: zoning the three main categories of accommodation, the laboratories, the drawing halls and lecture theatres for the students, and rooms for the staff—each with its own specific requirements in respect to ceiling height, orientation, lighting—into three connected wings.

While with this plan form Howie knowingly breaks with the architectural norms of the campus, he still takes pains to relate his building to its context. By a clever play of terraces on this steeply sloping site he correlates the ground floor of the Hillman Building with that of the adjacent, lower, Engineering Block, and by interlocking with the Bernard Price Institute he ties this previously isolated building into the overall logic of the site layout. His choice of simple rectilinear forms and the restrained treatment of the façades—concealed structural elements, flat surfaces faced with precast concrete, long horizontally-banded windows, and staircases in concrete—

framed glass bricks, and with colour and texture focusing on the entrance—results in a building which is severe, but not excessively so. The composition is softened by the imaginative ground floor, and the sympathetic relationship of building to site and landscaping.⁴⁴ The design intention is not to challenge the prevailing character of the surrounding buildings but to harmonise with it. The details of the Hillman Building interior are crisp and pleasing, while the character of the lofty laboratories, appropriately industrial, is reminiscent of the workshops in the Bauhaus Building at Dessau. Generally the uncompromisingly modern aesthetic language favoured by Howie is closer to that of Gropius than to Le Corbusier.

The new engineering block was funded by a generous donation of £35,000 from Wolf and Hirsch Hillman, of Hillman Brothers, an established firm of timber merchants in Johannesburg. It was opened on 18 June 1941 by the Prime Minister, General J.C. Smuts, in an impressive ceremony duly reported in the press, complete with the speeches of Smuts and Dr. P.M. Anderson, Chairman of the Council.⁴⁵

The Dental School and Hospital, c.1941

The Dental School and Hospital for the University was built off-campus close to the railway station. N.T. Cowin and Pearse were the accredited architects—the professor, no longer merely a consultant or associate, has moved up in the hierarchy—with John Fassler as collaborator. This new arrangement was recorded by Pearse in his *Reminiscences*, in a brief note: 'The University has now [1939] embarked on a large building programme and I was appointed consulting architect to prepare sketch plans and working drawings for the new buildings and Williamson and Cowin were to carry them out. On the death of Mr. Williamson, the University decided to appoint me as their architect in partnership with Mr. Cowin.⁴⁶ This new decision affected Pearse's colleagues in the department, not only enhancing their professional prestige, but having practical implications as well. 'He [Cowin] provided the staff, and I, in collaboration with the staff of my department, prepared the necessary sketches. I was then in a position to receive a portion of the fees for the first time, and to share these with my collaborators.'

We have a detailed and well-illustrated account of the Dental School, written by John Fassler, just after its completion.⁴⁷ Fassler's original brief, according to Pearse, had been to prepare the sketch plans, but from his familiarity with every detail of the scheme, so apparent in this publication, he had been involved in much more than the preliminary stages. In this article we are given no commentary on questions of style or aesthetics, but a comprehensive pragmatic account. Fassler analyses the complex uses and functional requirements—spaces, circulation patterns—of a racially-segregated building which is both a school and a hospital. He pays attention to the intricate technical services required now, and in the unknown future, acknowledging the need for flexibility to facilitate change and growth. Considerations of structure and materials are given their due weight. Only when we come down to specifics do we get a hint of Fassler's attention to detail: the colour schemes, the quarter-inch horizontal jointing of the tiling, the lettering of the external and internal signage.



However, from this building, we have much to learn about the architect's approach to questions of form and style. A comparison between Pearse and Howie's Hillman Building and Pearse and Fassler's Dental School, which followed shortly after, is instructive. Seen superficially, with their choice of materials, reinforced concrete structure, and the austerity of their unornamented facades, they are buildings expressive of the same epoch. However, their point of origin is completely different, Howie's that of Gropius and the Bauhaus, Fassler's that of the classical discipline of conservative modernism. It has been suggested that one of the critical breakpoints between the classical tradition and modernism—a watershed if you like—was when vertical windows were replaced by horizontal ones. In the Hillman Building the columns do not interrupt the horizontal continuity of the windows. However, because Fassler emphasizes the columns of the Dental Hospital and the beams are visually suppressed, a vertical expression of classical proportion, rising the full height of the building, results. This is classicism in spirit, not detail. We noted that Howie dismissed the traditional palazzo form as inappropriate for a multi-purpose modern building; Fassler accepted it. The Palazzo-like quality of the Dental School evident in its formal aspects is even more apparent when the plan is considered: a compact, completely symmetrical courtyard plan, not all that different in principle to the prototypical plan of Palazzo Farnese, but just the opposite of the articulated form of the Hillman Block.

While Fassler does not discuss these theoretical considerations, there are in fact two factors which argue for the logic of his design choice. The first is that he is constrained by the context and location, which is not the University campus, but

Fig. 4.14 The Dental School and Hospital, Bok Street

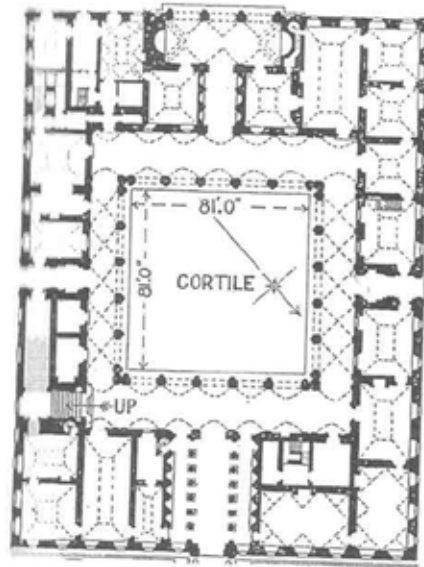
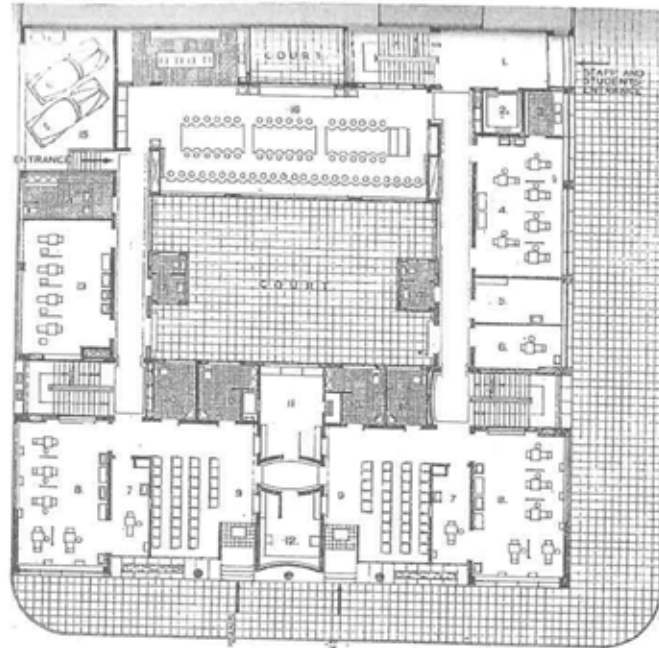


Fig. 4.15 The palazzo plan: the Dental Hospital and Palazzo Farnese, Rome

a typical Johannesburg rectangular urban block. The other factor is anchored in the political realities of South Africa at that time. The worst of apartheid was still to come, but when it came to public buildings racial segregation was rigidly enforced. In such a system, a facility serving both blacks and whites was of its very nature destined to be symmetrical.

THE CHANGING OF THE GUARD: FASSLER TAKES OVER FROM PEARSE

The plan overleaf indicates the buildings on campus in whose design Professor Pearse and some members of his staff participated. The extended Central Block (1936), as its name implies, stands on the middle line of the main axis, facing north. To the west, in ascending order from south to north, are the Bernard Price Institute (1937), the Hillman Block (1939), and the University (Cullen) Library (1933). The first Dental Hospital (1941) is the only other building which falls into this category, but it is not on campus. Its post-war successor—which we are still to discuss—the new Oral and Dental Hospital (1951), at the south-east corner of the campus, is marked on the plan, when its function later changed, as the Wits School of Arts.

We eventually get to the John Moffat Building (the Library's immediate neighbour, shown in the inset below). By now Fassler has replaced Pearse. Before we examine the role of Fassler and his team in the design of that building, we need to review the changing pattern of relationships that developed over the years between the official University Architects, the Head of the School, and the teaching staff.

PROFESSIONAL AND ACADEMIC RELATIONSHIPS

When the University began its development of the campus in the 1930s, after the great fire, it remained loyal to the firms of Emley and Williamson and Cowin, Powers and Ellis, who were regarded as the official University Architects. While the University was aware of and willing to exploit the pool of architectural knowledge that was available in the School of Architecture, it was not yet ready to grant Pearse and his colleagues professional status. When the commission for the *Library* was awarded to the official University Architects, Pearse was asked by the University 'to assist in the design of the University Library,' which he did unhesitatingly, notwithstanding the professional ambiguity which this request entailed. Fassler, presumably at Pearse's request, designed the façade and the reading room.⁴⁸

It was proper that the two firms who were the original architects of the *Central Block* were commissioned to undertake its renovation. However, by this time, the University obviously desired that Pearse play a more direct role, and he was therefore named 'consulting architect'. The designs were executed according to plans prepared by Pearse's staff. Howie, 'while in the temporary employ of Messrs. Williamson and Cowin' was closely associated with the design and construction of the extensions to the Central Block.⁴⁹ This rather clumsy arrangement apparently

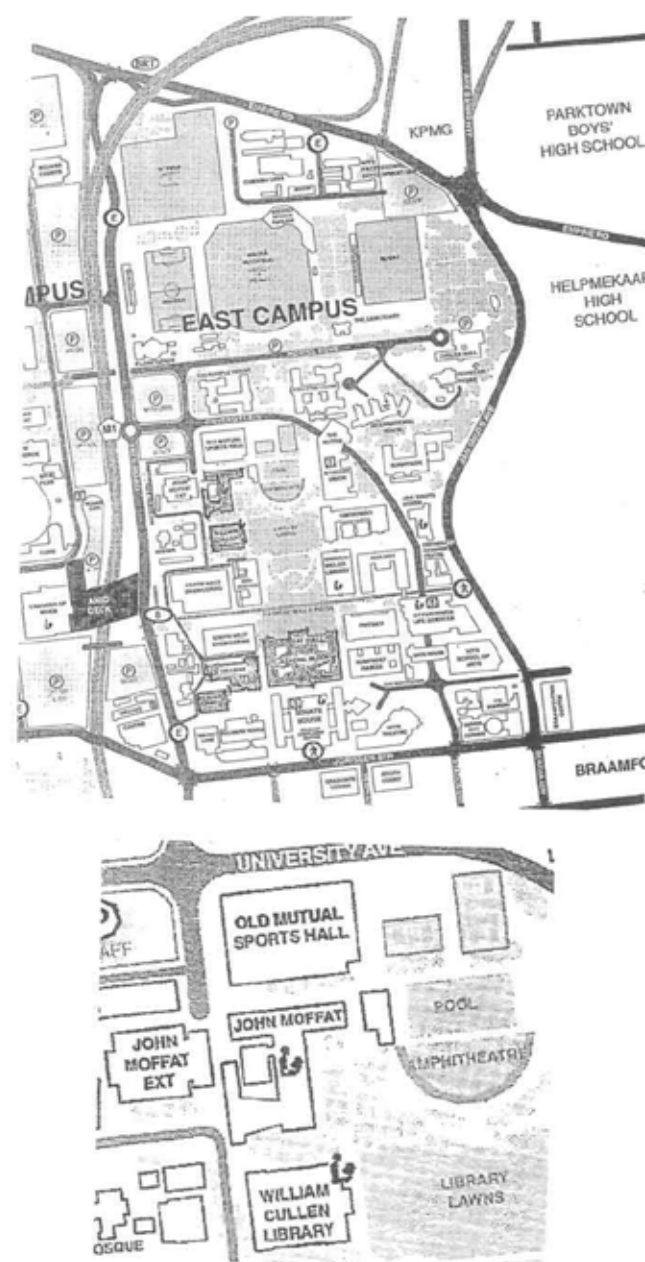


Fig. 4.16 East Campus, University of the Witwatersrand: location of buildings discussed

was acceptable to all parties. Pearse and his staff did the work, the University Architects provided the organizational and professional infrastructure, paid the bills, and got the credit.

The same set-up, therefore, was used for the next job, the *Bernard Price Institute*. Again, the architects were the official University Architects, Pearse was appointed consultant, and at his request the University Architects engaged Gordon Chalmers and Jean Welz as draughtsmen, the latter being chiefly responsible for the planning of the building.

With the *Hillman Block*, Howie again came back into the picture, but with a significant shift in emphasis. Apparently again in the temporary employ of Messrs. Williamson and Cowin, and in the absence of Professor Pearse overseas, he was personally entrusted with the design of the Wolf and Hirsch Hillman Building. In the subsequent published accounts of this building his name was linked with that of Professor Pearse as a collaborating architect. For the first time, one of the lecturing staff came out of the shadows, as it were, and gained recognition for the professional role he had played.

The shift in status implied in the Hillman Building is more explicit in the next project, the first *Dental Hospital*. Here, N.T. Cowin and Pearse are the accredited architects—the professor, no longer merely a consultant or associate, has moved up in the hierarchy—with John Fassler as collaborator.

Up to Pearse's retirement, the triangular arrangement remained unchanged in principle, but the weighting of responsibility, and the resultant professional status, shifted. The University appointed the official architects, and then found a mechanism for bringing Pearse into the picture. After his successful undertaking of Escom House they had no doubts about his professional competence, and the fact that he was an insider when it came to understanding the needs and mind-set of academics (the clients) was an additional advantage. Pearse in turn brought in one or other of his most trusted lieutenants, Fassler or Howie, to be his right-hand man, and his most reliable assistants as draughtsmen to work with the University architects.

The next project on campus, the new Oral and Dental Hospital, was to see an entirely new professional framework put into place.

THE NEW DENTAL AND ORAL HOSPITAL (1947–1951)

In 1947 the South African Railways [SAR] expropriated land just north of Johannesburg's central business district in order to build a new railway station. This involved the demolition of the University's Dental Hospital in Bok Street. Bruce Murray, the University's historian, writes: 'Initially the University contemplated erecting a six-storey structure in town on the Wolmarans Street site offered by the SAR, but when government funding was not forthcoming, Council opted for a three-storey building on the main Wits campus.'⁵⁰

This new building brings us to a change point in the history of the Architectural School and its influence on the architecture of the university campus. First of all, it

Fig. 4.17 New Dental Hospital, Witwatersrand University, 1947–51



was the catalyst that brought about Pearce's retirement, and the appointment of a new Professor of Architecture. Secondly, it introduced into the campus a building of unique architectural character which neither reflected the modernising trend that had been evolving, nor predicted what was later to occur in the design of the John Moffat Building.

To understand the implications we must follow a complicated trail of events. In his memoirs Pearce wrote: 'In 1947 ... I was asked to prepare plans for a new Dental School and Hospital in the South-West [actually South-East] corner of the University Grounds.⁵¹ At the same time, Pearce, then still a full-time senior member of the academic staff, received not only this commission but also one for an Ophthalmic Hospital at Baragwanath, the giant non-European Hospital on the southern outskirts of Johannesburg. The double load of responsibility, as Dean of a complex Faculty and professional architect with two new major projects, caused him to think about his future. 'I decided to resign as Professor of Architecture and go into practice,' he wrote. 'I took Paul Hahn into partnership and we were asked to keep our offices at the University in one of the huts that had been erected to house the large number of students after the War.' It was as an academic that Professor Pearce had been appointed architect of the New Dental Hospital, but he then continued as the principal of a commercial architectural practice, Pearce, Aneck Hahn and Bristol. This anomalous situation was corrected when the firm was 'authorized to continue with the architectural work in connection with certain proposed University buildings [the Oral and Dental Hospital was one of these projects specifically listed] with which Professor Pearce had been closely associated before his retirement from the staff of the University at the end of 1947.⁵²

At the end of 1947 Professor Geoffrey Pearce retired from his position as Head of the Architectural School and Dean of the Faculty, and Professor John Fassler, newly appointed to the Chair, took his place. In applying for the Chair, Fassler wrote: 'In collaboration with Prof. Pearce I recently designed the proposed New Dental and Plastic Surgery Hospital in Wolmarans Street, Johannesburg.⁵³ We are to understand from this that Pearce, following his usual procedure of calling on one of his trusted lieutenants, had recruited John Fassler (now his successor as Head of the School) as his associate. This was apparently right at the very beginning of the project, for Fassler is talking of the Wolmarans Street site, which preceded the campus location. Working with this colleague was a logical move. Fassler's previous experience in the first Dental Hospital had not only given him some expertise, but he had worked there in close association with Professor J. C. Middleton Shaw, Head of the Department of Dentistry; and the new hospital was to be planned according to Shaw's specifications. Whatever the formal arrangement, we who were members of Fassler's staff were in no doubt that the new head of our school—as he guided us over the building, and explained its technical complexities—was wholly responsible for its design.

According to his own account of the building, the new Oral and Dental Hospital was intended by Fassler as 'a reasonably harmonious' addition to the main group of buildings on campus, which were all classical in character.⁵⁴ Murray, following Fassler's line of thought, describes it as neo-classical in design. This is not an accurate designation, for while in a general sense all of Fassler's work was classicist, the term *neo-classic* implies a 19th century revival origin, whereas its dominant influence was that of an early 20th century pioneer of modern architecture, the French architect-engineer Auguste Perret. The difficulty in classifying the Dental Hospital stems from the fact that it is a hybrid building. The entrance of the building is emphasised by a portico of full-height columns whose fluted shafts and embryonic capitals hint at the language of the classical orders, but whose slender proportions reflect their reinforced concrete origins. The free-standing lettering on the entablature, entirely modern in its choice of type-face, together with the shadows it casts, cleverly evokes the decoration of the ancient past. The idea of the cornice is also classical, but the square profile of this concrete element comes from the mould in which it is cast. Finally, the decorative grilles flanking the entrance portico are an acknowledged quotation from Auguste Perret.⁵⁵

ARCHITECTURE IN AN AGE OF UNCERTAINTY

In 1948 Professor John Fassler presided over the Annual Exhibition and Prize-Giving Ceremony, and as was customary, delivered the Dean's address. In substance it was similar to previous addresses on such occasions, a factual review of the previous year, and some hopes for the future. But in the course of his introduction, a tribute to his predecessor, Pearce, he included this historical note: 'Although the school had to reorientate itself [from the Baker tradition] when it became receptive to the philosophy of contemporary architecture that was being clarified in Europe and

the United States, it did not happily lose enthusiasm for our own fine South African heritage of building and planning; and I hope it never will.⁵⁶ The school stands on the threshold of a new era, and the vision of the new Dean is not that of the radical Transvaal Group, the Le Corbusier groupies, but that of a true conservative, one who conserves the values of the past, but is receptive to the challenges of the present.

An interesting phenomenon begins to reveal itself here, as the school enters into a new phase. During the 1920s the School of Architecture produced designs in the classical tradition, in true Beaux Arts fashion. It was only after the changes of 1932 initiated by Furner and brought about by Martienssen and his circle that work in the modern idiom became the school style.

From 1932 to 1942 the design approach of the School of Architecture was dominated by the aesthetics of the International Style, that of Gropius, Mies, and—overwhelmingly—Le Corbusier. Nevertheless, a love of classicism continued to be imbued. Pearse continued to teach his Theory of Architecture course by taking standard building types—an art gallery or a college—and illustrating the planning procedure by drawing a centre line down the blackboard, then arranging a sequence of rooms symmetrically along the axis. The orders were studied in meticulous detail and painstakingly rendered in washes of Chinese ink, hours were spent mastering the intricate geometric basis of Roman lettering, and fifth-century Greece and the Italian renaissance were considered the golden ages of architecture. Seen through the eyes of Martienssen and his followers, traditional classicism and mainline modernism were found to be compatible, and merged into the ethos of the School of Architecture. Both are governed by a rigid rectilinear geometry, and in both they are disciplined by an understanding of the relationship of form to structural technology.

In the debate between Apollo and Dionysus, the School was clearly on the side of rationalism, but there were nuances in the interpretation of the rational ethos which led to a diversity of approach among the various members of staff. Martienssen was an unrepentant follower of Le Corbusier, but with his death in 1942, the discipline he had exerted over his disciples (both colleagues and students) relaxed, and his increasingly eclectic approach—the façade of his own house was a far cry from the exuberance of Le Corbusier—proved liberating to his followers. We see in the architects designing the University buildings that the spectrum of rationality which characterised their approach was sufficiently wide to embrace the stylistic classicism of Pearse, the formal discipline of Fassler, and the technology-based, function-driven Bauhaus aesthetics of Howie.

In one sense the 1940s and 50s were periods of architectural uncertainty. Mies in Chicago was the unchallenged advocate of minimalism, Niemeyer in Brazil posed the romantic alternative of tropical exuberance, Scandinavia offered an inoffensive New Empiricism, the Festival of Britain celebrated with a confusion of styles dominated by the Royal Festival Hall, and an era of New Brutalism was ushered in. This uncertainty was inevitably reflected in the School of Architecture, both in the work of the students, and in that of their mentors. On the other hand, at the hands of many architects whose professional task was to provide the lofty office buildings

of Johannesburg's city centre, or the towering blocks of flats of Hillbrow, a far more homogeneous architecture was emerging, the result perhaps from the constraints of zoning regulations and byelaws, and the inexorable economic forces of demand and supply, investment and return. This is the architecture which Nikolaus Pevsner, with guarded praise, called the 'contemporary vernacular' of the Transvaal.⁵⁷

By the 1950s, when the University was about to put into effect its large post-war building programme, it would have been difficult to predict which direction the architectural character of the campus would take: would it be a development of the classicism of the Library, the restrained modernism of the Hillman Block, or the disciplined eclecticism of the new Oral and Dental Hospital? This question was soon to be put to the test, when the School's dream of a home of its own became a reality. We started this discussion by quoting from Fassler's first address on Prize Day, at the school of which he had just become head. Let us return to that day, and see what concerned Howie, speaking in his capacity of the President of the Transvaal Institute of Architects at that same ceremony:

Many will remember a plea made by Professor Fassler when President on a similar occasion. He drew attention to the very real disabilities under which the Faculty is functioning and argued the case for proper accommodation and equipment in a building housing the Departments of Architecture, Quantity Surveying, Fine Arts and even Physical Planning ... The need for such a building is as real now as it was then. It is only too apparent that the widely scattered studios, lecture rooms and library militate against that essential spirit which is the soul of a training institution.⁵⁸

The designing of such a building was still some years away, but it was to be the next challenge on the campus to be confronted by Fassler, Howie, now a senior lecturer, at his right hand, and the teaching staff of the school. To undertake this daunting task successfully they would have to act as a team, bridging the differences in their individual philosophies and stylistic preferences. But there is more to architecture than questions of style. Pearse himself stressed this, in defining architecture as 'solving the practical problem handsomely.' Fassler and Howie, as the senior members of staff engaged in the design of the University buildings we have so far looked at, had to cope with the typical functional problems of lecture theatres, staff offices, libraries, and laboratories, together with the integration of the technical problems of services and environmental control. The experience gained was to stand them in good stead when confronted with the next challenge, solving the practical problems posed by the design of the accommodation for the School of Architecture.

THE ARCHITECTURE AND FINE ARTS BUILDING: APPOINTING THE ARCHITECTS

On 1 November 1954, the Building Committee of the University recorded a momentous decision, when it recommended 'that the Council authorise that plans, working drawings and details of estimated cost be prepared in respect of ...

a new building to house the Department of Architecture and Quantity Surveying and Fine Arts.⁵⁹ After years of enduring sub-standard conditions, the School of Architecture was to get its own building. Equally significant was the rider to that recommendation, namely that not only was the School to get a new building tailored to its specific needs, but that it was being given the privilege of designing its own home. The Committee recommended 'that the staff of the University Department of Architecture be appointed Architects for the proposed new building ... and be requested to proceed forthwith with the preparation of plans and, as soon as possible thereafter, working drawings.' What is significant is that this commission was not awarded personally to the Head of the School, Professor Fassler, but to the staff of the Department of Architecture. Fassler's position would inevitably ensure that his role would be a central one, and that he would be the link between the school and the committee. But the wording of the appointment meant that it was for the staff itself to decide the composition of the Design Team, and that this would not be the privilege of the head of the Department, as it had been with Pearse.

We have found no record of the discussions within the Department that followed, as the composition of the design team was sorted out. To the best of my recollection, they were conducted amicably. In the meantime, in view of the urgency expressed by the Building Committee ('proceed forthwith ... as soon as possible') work commenced on the scheme, and proceeded for some time. We shall return shortly to the design process, and the progress being made, but before doing so we need to complete our picture of the design team being assembled. On 3 August 1955, that is nine months after the work was commissioned, Fassler notified Mr. Herholdt, the Registrar, of the names of the staff members participating in the design team. They were J. Fassler, W.D. Howie, G. Herbert, J. Morgenstern, J. Shunn, and U. Tomaselli; and a note was added, that C. Pinfold had indicated that he would not be participating in the scheme.⁶⁰

A complicated calculation followed, with Fassler setting out the basis for remuneration. Based on the principle that the associated architects would be paid only for work done in their free time (estimated at 10 hours per week) and during vacations, it worked out at about 17/- per hour. It is doubtful that any of the team expected to get rich out of this job, but that was not the point of the exercise. The challenge was to produce a fine building, and the team was grateful for the opportunity to do so. For this princely sum it undertook to produce sketch plans, working drawings, details, and specification, to call for tenders, and to administer the contract and supervise the construction. Two months later, with this letter seemingly unanswered, and while this work was going on apace, Fassler thought fit to write once again to the Registrar. 'I wonder if you can tell me what the position is about the appointment of Architects for the above building?' he asked. 'My problem is that I have to appoint a draughting staff to commence work at the beginning of December, 1955. The members of staff concerned feel hesitant about committing themselves to considerable expenditure in salaries unless their own appointment is secure.'⁶¹ Fassler's irritation, palpable under the surface of this polite letter, prodded the University into a prompt response. 'The University Council,' the

Registrar informed Fassler a week later, 'has agreed to invite you, together with members of your staff (excluding Mr. Pinfold) to accept appointment as Architects for the proposed new Architecture and Fine Arts Building.' The fee: 4% of the cost of building, with all expenses to be borne by architects, and consultants to be paid by University.⁶² The nominated consultants were Mr. M. Marcus, Consulting Structural Engineer, and Mr. N.P. Smit, University's Consulting Electrical Engineer. With the Associate Architects' acceptance of these terms, the formalities were finally completed on 5 December 1955, a year and a month after the proceedings were initiated.

THE DESIGN TEAM: A PROFILE

Apart from their diverse national and ethnic backgrounds the team was a remarkably homogeneous group.⁶³ Except for Morgenstern they were all born in the Transvaal, all educated at good English-medium High Schools (Tomaselli, Herbert and Morgenstern actually went to the same school, Parktown Boys High, just across the road from the University), and all received their professional training in the same School of Architecture, studying for the degree of B.Arch from the University of the Witwatersrand. After graduating, all members of the team had, to a greater or lesser extent, practised their profession. Fassler's and Howie's professional careers started in the days of the Transvaal Group (Fassler as a partner with Martienssen-Fassler-Cooke, Howie working for Hanson-Tomkin-Finkelstein), then working later in association with Professor Pearse, including the Escom House project, but more essentially the design of buildings for the University, some of them off-campus. As for the rest of the team, the extent of their practical experience varied. Ugo Tomaselli had a small practice, largely residential and ecclesiastic, specialising in the design of funeral parlours and crematoria. His major commercial project was a block of flats and supermarket, in Johannesburg.⁶⁴ His approach to design was restrained, and his great strength was in the technical aspects of construction. John Shunn, in a 1979 curriculum vitae, states 'As an architect, I have engaged in private practice, under my own name, from the date of my registration with the Institute of Architects in 1945 to the present day.' With this emphasis on private practice (his other main interest was chess) he was an experienced and capable architect, as is shown in his Queensgate apartment complex, which was published in the international press.⁶⁵ On the other hand, Jacques Morgenstern, until he retired from the University in 1956 to establish his own practice, had a relatively modest body of work to his name, but it was sufficient to show his skill as a designer. Working with his architect-wife, his talent as a creative architect, prior to his successful commercial career, was best demonstrated in their own house, a cliff-edge romantic exercise in the Wrightian manner on Johannesburg's Linksfield Ridge. As I shall note later, I worked in association with the Morgensterns on some successful competition entries, as well as two houses. My own professional experience was also limited, as I saw the fulfilment of my career in academia. Nevertheless, I had designed many houses, as well as some industrial and commercial projects, of which the ground-

breaking Cinerama Theatre (the second such theatre in the world, after one in Japan) was probably the most important. The design I was proudest of, however, was that of my own house, Casa della Salamandra, in Johannesburg, designed and built while I was engaged on the John Moffat Building.

At the time of their appointment to the design team in mid-1955 the architects already knew each other well in various capacities, as fellow students, fellow members of staff, professional colleagues, or personal friends. Some of them were involved in the University Training Corps during the war. They were all members of the same Institute of Architects, and served together on its committees. While Fassler and Howie are obviously the senior members, with Tomaselli in an in-between category, having spent three years in war-time service, the age spread of only 15 years from the oldest member of the team (45) to the youngest (30) was a limited and bridgeable range. As architects they were old enough to have gained experience, but not too old to have passed the peak of their creativity. They were all married, and socially they were a compatible group.

Various members of the team had some previous experience of working together. From 1927 the Institute's official organ, the *South African Architectural Record*, had been edited within the School of Architecture. In 1947 Howie took over as Editor-in-Chief from Pearse, and for many of the critical years leading up to the John Moffat Building the Editorial Board consisted of Howie, with Tomaselli and the present writer as his associates, working closely together. Colleagues on the staff had also worked together as professional architects. In University buildings where Pearse had involved either Fassler or Howie, it is natural that the other kept a close watch on the proceedings. Architectural competitions were an obvious area for co-operation. Morgenstern and I had combined forces in the Harrismith High School competition, receiving an honourable mention. Together with Riva Morgenstern we jointly competed in 'The Star Model House Competition,' winning a first prize and an award of merit. (As an outcome of these awards, we received two actual commissions, and houses based on our competition designs were built in Boksburg and Pretoria.) In the same Model Homes competition there was also a successful entry from a pair of our colleagues Tomaselli and Pinfold. Fassler, Howie, and other staff members worked as a team and submitted a joint entry in the International Competition for the design of the headquarters building of the Uganda Electricity Board in Kampala, and while we were unsuccessful, Shunn, a lone wolf going his own way, won fourth prize.

Another area in which members of staff collaborated was in the designing of exhibitions. We have already recounted those exhibitions which the Architectural Students Society prepared, with the active participation of staff members and members of the Institute of Architects. But there were other, commissioned, exhibitions, designed in their capacity as professionals. Two of these, one for the SA Medical Council, the other for the SA Institute of Electrical Engineers, were designed by Howie and me, and constructed in one of the temporary huts used by the Faculty of Architecture. We were also commissioned by the Cultural Affairs Department of the State Information Office to design a retrospective exhibition, 'Architecture in South Africa,' for the Union Government State Information Service,

marking the fiftieth anniversary of the founding of the Union of South Africa. This exhibition, first mounted in Bloemfontein in 1960, was designed as a travelling exhibition intended for display in England, Europe and the USA.

Apart from the architects, there was another teacher from the Faculty of Architecture involved in the making of the John Moffat Building. Manfred Marcus, the structural engineer, was an important member of the team. We have already commented how his teaching of the Theory of Structures engendered enthusiasm for a subject generally regarded by students as something to be endured rather than enjoyed. It is significant that Denise Scott-Brown, Robert Venturi's wife and partner, who started her architectural studies at Wits, of all her teachers of those early days—which included most of the John Moffat team—named only Marcus as a mentor.⁶⁶ As a student I too had learnt much from Marcus the teacher, and later enjoyed his company as a colleague, listened to classical music in his home, admired his Biedermeier furniture, and employed him as my structural consultant when I built my first multi-storey industrial building, Myru House.⁶⁷

JOHN MOFFAT, THE BENEFACTOR

In recalling the architects involved in the Architecture and Fine Arts Building, one other name should be mentioned. The building is known officially as the John Moffat Building, named in honour of the benefactor whose legacy made it possible. John Abraham Moffat (1871–1941) was born in Manchester, spent his early years in New Zealand and Australia, and from 1905 until his retirement in 1939 worked as an architect in Johannesburg, with a special interest in town planning. Two years after his retirement he died, and was buried on his farm in the Lydenburg district. In his will he left the proceeds of his estate, after certain specific bequests, to be paid to the University of the Witwatersrand fifteen years after his death, stipulating that 'the use to which these funds were to be put should take a permanent form.' The legacy, having appreciated over the intervening years, amounted to about £100,000 in 1956. When the University decided upon the project for Architecture and Fine Arts in 1954, it was the anticipation of that bequest, plus a loan from the Government, which made the financing of the Architecture and Fine Arts Building (an appropriate choice for a permanent memorial to the donor, an architect himself) a feasible proposition.⁶⁸

THE JOHN MOFFAT BUILDING: DESIGN AND CONSTRUCTION

We will recall that when, in November 1954, the University decided to construct a building for Architecture and Fine Arts to be designed by the staff of the Department of Architecture, that decision was coupled with a request for the architects 'to proceed forthwith with the preparation of plans and, as soon as possible thereafter, working drawings.' On receiving this welcome news Fassler did not wait for the formalities of the appointment to be finalized, but immediately set

the design process into motion. The first step, obviously, was to call the architects on his staff together, and determine who were interested in participating in this project. The first *ad hoc* group included all the members of the eventual design team, plus Carl Pinfold. Appointed in 1948 as a temporary full-time lecturer (he was made a permanent lecturer in 1955), Pinfold was a stimulating colleague but not a team worker. By August 1955 he had pulled out of the design team, but contributed to the early, formative stages of the design process.

The homogeneity of this group of architects, while it assured that level of compatibility of design approach implicit in team work, nevertheless did not imply uniformity. The participating architects were individuals, each with his own personality, temperament, experience and vision. They also had different skills to contribute, and sometimes saw the problem through the distorting lens of those particular aptitudes: to one the project was an artistic challenge, to another a technological opportunity. At the conceptual stage of the design process this diversity was not to be deplored but rather an asset to be exploited. Howie, in a special brochure to mark the opening of the building, wrote:

The introduction of the John Moffat building into an existing University campus determined the nature of its architectural character. It was felt that the building should be a harmonious addition to the University but that the planning and the detailed treatment should take advantage of contemporary technological methods In the handling of the scheme in its broad and detailed aspects, the architectural treatment should be free from any features which might form part of passing architecture fashion.⁶⁹

This, however, was not an initial statement of intent, but a consensus eventually reached. The starting point was not an *a priori* statement, but a range of options, to be evaluated comparatively. This indeed was an approach which we as teachers encouraged our students to follow.

With a schedule of accommodation broadly sketched out, the first steps in the design process involved a pooling of ideas. This was not a brain-storming session in the accustomed sense, but the generation of independent concepts to be brought together for discussion. 'Five different sketch plans were prepared by individuals or pairs,' a report on the building states. 'The best ideas were incorporated into the final sketch plan.'⁷⁰ Despite exhaustive searches we have not found these early sketches, but we shall attempt to reconstruct two of these, to indicate the range of possibilities opened up. These two sketches correctly represent the principles involved, but not necessarily the details or proportions, as we are relying on memories of events fifty years ago.

Concept A suggests a top-lit upper floor, a horizontal slab carried on *pilotis*, for the studios, thus enabling a free disposition of the other major elements to take place below. In plan and section, with the disposition of the functional zones one above the other, it is radical, but in three-dimensional form it does not break with the tradition of its palazzo-inspired neighbours on the campus. Concept B follows the articulated form of the Hillman Building, but brings it boldly to the main axis of the campus. It is tee-shaped, with studios in the block forming the head of the

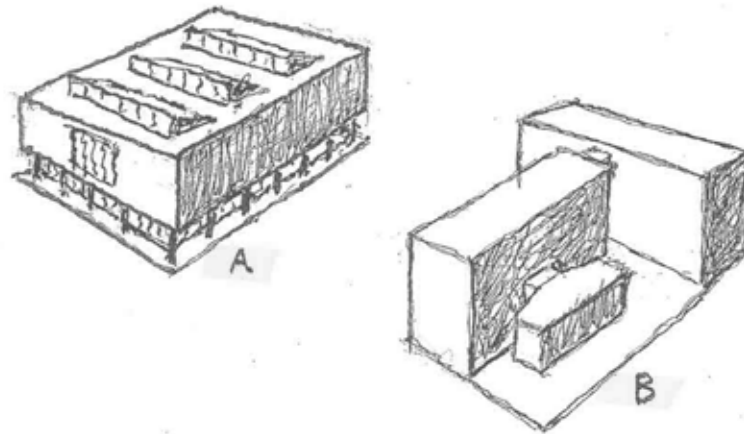


Fig. 4.18
Alternative
conceptual
diagrams, John
Moffat Building

tee, facing north and south, and lecture theatres and administration in the upright. It gives emphasis to the Library, a free-form projection into the courtyard. These polar extremes, and those in between, presented the team with a wide range of possibilities. Howie, writing shortly after the completion of the building, when memories were still fresh, summed up what happened next. 'The best ideas were incorporated in the final sketch plan. These included the set-back of the East Wing to create a forecourt and the arrangement of the exhibition foyer and lecture theatre suite among others.'

By 16 March 1955 the consolidation of ideas had progressed sufficiently to enable Fassler to present the first sketch plans and estimate of cost to the Building Committee.⁷¹ Unfortunately we do not have these, or any other interim plans, so cannot plot the variations that took place. The building as now planned extended on the north beyond the site previously approved by the committee. An extension of the site was approved, provided that the southern line of the building was not more than 40 feet from the building line of the Library. The Department of Architecture was instructed to prepare fuller plans and elevations by the end of April.

In September 1955 the Associated Architects submitted a six-page document to the Building Committee, setting out a revised programme for the proposed new building, with a detailed schedule of accommodation. A major item was a 300-seat lecture theatre (the Dorothy Susskind Auditorium), intended to serve as a venue for both the University and the public, a use which governed its location and formal emphasis in the design of the building.⁷² There were to be two 60-seat lecture theatres (later revised to an 80-seater and a 40-seater), all fully-equipped for projection, automatic black-out facilities, and mechanical ventilation; exhibition space; studios; library; staff offices and administration. A staff drawing office was to be provided, a perpetuation in permanent form of Studio Seven, the accommodation in the hutment in which the plans were then being prepared.

The revised programme necessitated revisions of the plans. Around the end of the year two draughtsmen were engaged, to speed up production of the drawings. This gave Fassler the confidence to assure the University that he would soon submit the revised sketch plans for approval. These revisions were minor, and 'concerned adjustments to the internal arrangements of the building with the object of improving the workability and amenity of the building.'⁷³ The design work continued, and by April 1956 the plans were sufficiently advanced to enable the architects to call for tenders for the excavation and clearance of the site. This was not a trivial affair as the site was neglected, and had been used as a dump for the spoil excavated for both the adjacent swimming bath and the Library stack room. However, the planning process was about to hit a serious snag. In the process of refinement and revision, and possibly some miscalculation in the estimate, the anticipated costs now exceeded the budget, causing concern in the Building Committee.⁷⁴ That body responded with two equally unwelcome suggestions: 'reducing the cost and allocating as much space as possible for Departments other than Architecture and Fine Arts.'⁷⁵

At this critical stage, a perspective (the original in colour) shows us what the building looked like. It is a four-storey building with a modular façade, capped by a prominent overhanging cornice. The two wings at right angles are anchored in a rectangular lift tower. Attached to the east face is a two-storey projection, containing a six-bay colonnade flanked by a further three bays of a nondescript character. In view of the Committee's negative reaction, the architects decided to reduce costs by eliminating the fourth floor. This to a large extent met the committee's main objective, economy, but they were still troubled by the appearance of the building. Tactfully, they suggested that the architects 'consider further suggested alterations to the plans, especially the proposed design and treatment of the Eastern façade.'

In June 1956 the Committee approved the revisions, and authorised Fassler and his team to prepare the final working drawings and detailed plans.⁷⁶ The work was intended to be executed in stages. Firstly, documents had to be ready for the construction of the basement and lower ground floor, for which the University hoped to sign a contract by September. Then, while supervising that construction, the design team were to prepare all the necessary documentation for the upper three floors, which would be a separate contract. The design team, plus their three draughtsmen,⁷⁷ the consultants, and the Quantity Surveyors, had a busy time ahead of them.

The latter part of 1956 was devoted to the preparation of the working drawings and details, the revision of the specifications and the bill of quantities. The finalising of the documents also entailed coordination with the specialists, especially the structural and ventilation consultants. The role of the latter had become problematic, because of indecision on the part of the University whether to build a central boiler house and plant. This left the design team up in the air, not knowing whether they were to rely on the central plant or would need to make provision for heating and ventilation independently. To prepare for this eventuality, which was critical in relation to the lecture theatres, they had asked the consultant, D.H. Hill,



Fig. 4.19 John Moffat Building: early version (perspective John Fassler)

to advise on air-conditioning, heating and ventilation, but were instructed to put the decision on hold.

This unsatisfactory situation continued until September, when the issue was finally determined. Howie phoned Hill on 10 September, to inform him that the architects had received instructions from the University Council that the Architecture and Fine Arts Building would be heated electrically. This had implications not only for Hill but more critically for the design team, because if electric heating was to be incorporated in the floor slabs, it affected the foundation and basement contract about to be signed.⁷⁸ Howie took responsibility for the arduous task of supervising the installation of the system, which demanded technical ingenuity and great precision in execution.

It should be noted that between July and November all correspondence from the Registrar was directed to Howie (with one exception, a letter to Tomaselli about insurance of the building), which suggests that Fassler might have been away for some months. In fact, the team was about to be reduced: Jacques Morgenstern resigned from the University in 1956, after building operations were begun, to take up private practice, and I left the team temporarily at the end of 1956 to spend a year in Italy and Great Britain, after being awarded the Baker Scholarship.

Progress, for whatever reason, was slow, and Howie felt the edge of the University's concern. 'What should I tell the Principal,' asked the Registrar, 'are you all [the architects, engineer, and quantity surveyor] keeping to schedule, on what terms do you expect to call for tenders and have the successful contractor start work on Monday, 12 November?' Howie's reply was prompt, but not altogether reassuring: 'It is with regret that I have to report that, in spite of our strenuous efforts to have the documentation of the work completed by the 15th of this month, this intention will not be achieved ... Under the circumstances we should obtain tenders by the 19th of November.' However, ever the realist, he doubted that a contractor would bring his equipment to the site and start operations before the builders' annual holiday, beginning on 14th December.⁷⁹

It was in fact some months before a tender was accepted and a contract entered into for the superstructure.⁸⁰ In March 1957, Fassler (now back in the picture) submitted his updated schedule for the completion of the work. He anticipated that by the end of 1958 the whole project should be complete, including the development of the grounds adjacent to the building. When I returned from Europe at the beginning of 1958 to take up my duties once more, it was apparent that this was an optimistic assessment. For the builder there was still much work to be done, and for the architects many details still to be settled.

TEAMWORK AND THE DESIGN PROCESS

Before we look at the final building, opened on 23 October 1959 by the Minister of Education in an impressive ceremony⁸¹ in the courtyard adjacent to Fassler's reflecting pool, we should consider how design decisions were taken by the team. The term 'Fassler's pool' gives a hint that some aspects of the design were clearly the priorities and prerogatives of individual members of the team, by virtue of their areas of interest and specialised skills. The landscaping of the surroundings was indisputably the domain of Professor Fassler, and he had fought valiantly throughout the process to retain the pool, even when under pressure to cut costs. The library was another focus of his attention, and he designed the elegant tables in its reading areas. It was self-evident that Howie would be responsible for handling most of the technical problems, especially the under-floor electric heating.⁸² I recall Tomaselli designing the built-in furniture in the staff offices, and it was expected of me as an historian to find appropriate symbols linking the Modern Movement to its roots in classical Greece (the suggested Greek fret in the mosaics), the Renaissance (Leonardo's man at the centre of the universe), and the School's one-time godfather (the modulator as an evocation of Le Corbusier).

As the senior academic and natural leader of the team—and teams without a leader (what Gropius called a team captain, and more commercial practices a project manager) lacked focus and coordination—many of the decisions were ultimately Professor Fassler's. It was not that he was dictatorial, but we respected him personally, as well as his position in the University, and were accustomed to the chain of command in this rigidly hierarchical institution. However, this did not stop us arguing, and pressing our points in the discussions which took place throughout the design process about various aspects of the design. These ranked from issues of principle to matters of detail, and stemmed from the fact that some younger members of the team were still loyal to the 'ethics of the fathers', the tenets which had been the lodestones of our education, whereas the older and more mature of us had become much less rigid about so-called 'rules of design.' Questions were asked. Didn't *Corbusian orthodoxy* demand that functionally-differentiated zones—the office wing, the studio wing, or the auditorium—be separated by articulated links, and not simply abutted one against the other? If *ornament is crime*, then while the Leonardo and Le Corbusier-derived patterns sand-blasted on the plate glass doors were justified, because they stopped people walking unaware into the doors, the six red mosaic panels on the north façade were an arbitrary addition

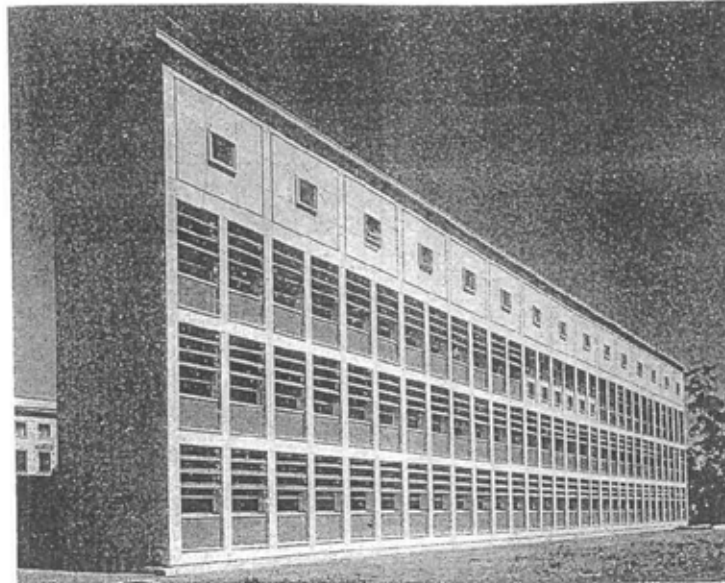
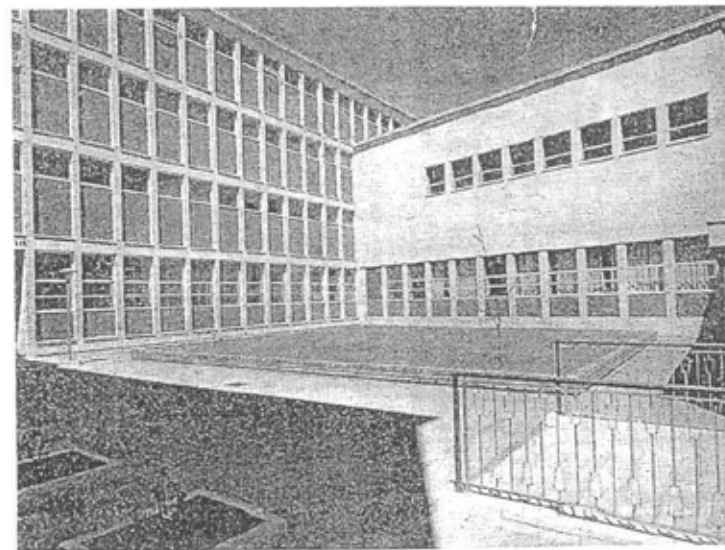
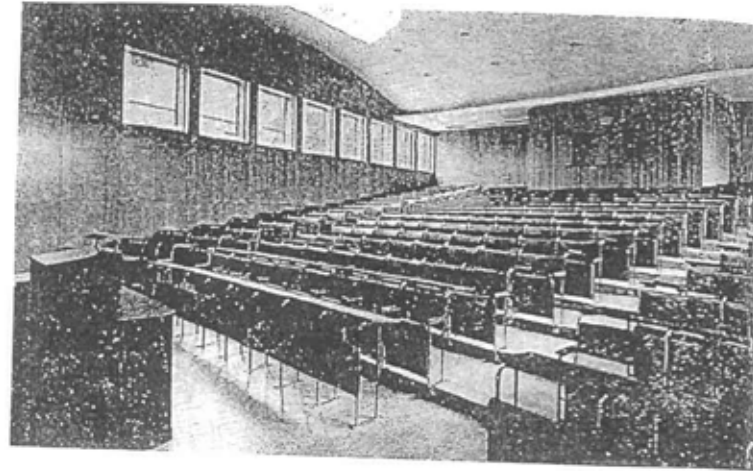


Fig. 4.20 John Moffat Building: north façade and west façade



to be deplored. If *climate control* was an imperative, then why not insert precast horizontal louvres on the exposed north side of the studios? There were, of course, two sides to every issue. The solution to the sun penetration problem was to use tinted glass louvres, set deep into the window recesses, to protect them if possible from hail. This seemed an acceptable solution, for not only did these transparent

Fig. 4.21 Dorothy Susskind Auditorium



louvres leave the expansive view to the north unobstructed, but they were not obvious from the exterior.⁸³

Other issues were raised. If *form follows function*, then how could a standard window design reflect the diversity of functional spaces within? Indeed, why did the artificially lit and ventilated Dorothy Susskind Auditorium actually need windows (which entailed an elaborate black-out system) when the Great Hall functioned perfectly well without them? The counter-argument for the merits of ambience against pragmatism won the day. 'The architects did not desire permanently darkened theatres as there is much in favour of the atmosphere and psychological characteristics which derive from natural lighting.'⁸⁴

Then, at a detailed level, those of the team who were purists and still paid homage to the aesthetics of the International Style—where building silhouettes were box-like and clean-cut—were uncomfortable with the cornice and unhappy with the plinth, which were regarded as anachronistic, harking back to the Renaissance palazzo. In hindsight, many of the issues we debated so earnestly some fifty years ago seem irrelevant in this post-modernist age, and the building today looks fresh and trim, having aged more gracefully than one perhaps could have predicted. On major issues, especially the planning of the building and its character in general, consensus was achieved, and this was the secret of the successful outcome of the process. Efficient planning of functional spaces was a strong point of the School, emphasised in the design studios and a governing factor in the architectural practice of its teachers.

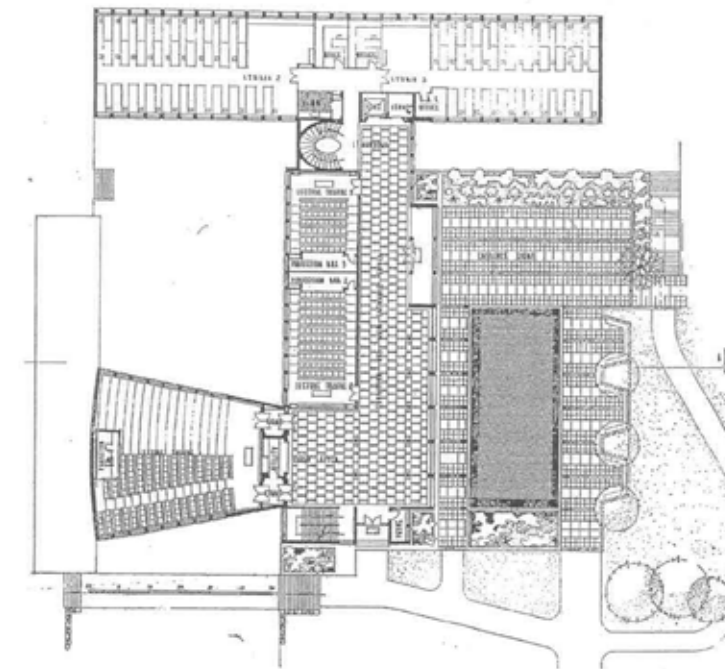
THE JOHN MOFFAT BUILDING

The planning of the John Moffat Building was particularly felicitous in all its aspects: the broad zoning of major functions, the way the separate departments (Architecture, Quantity Surveying, Fine Arts) were given their own identity but

Fig. 4.22 John Moffat Building: cross-section and ground floor plan



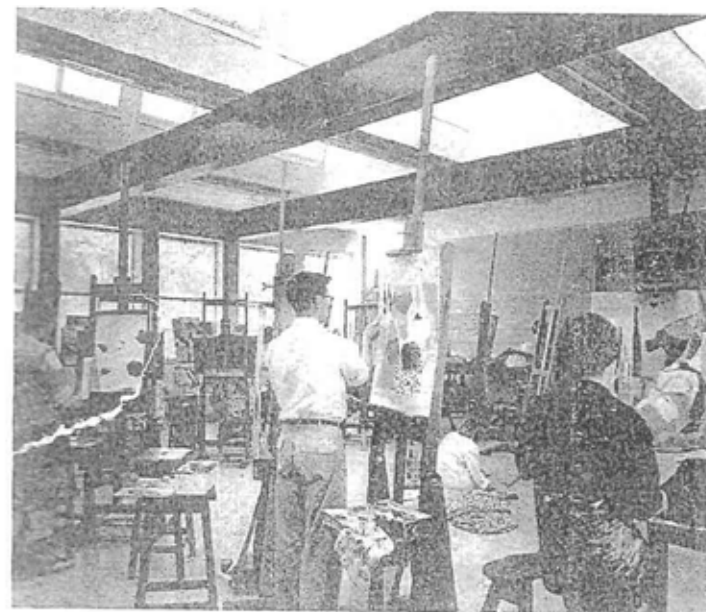
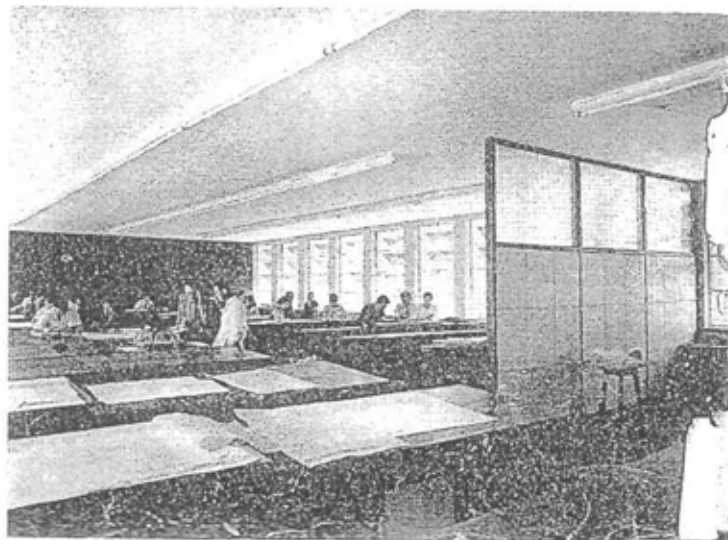
CROSS SECTION A-A.



nevertheless integrated into the whole, the ease of the circulation patterns (including the dramatic spiral stair, with the Cecily Sash mosaic at the base) and the detailed layout of minor spaces. Access for students from the campus, the staff from the car-port, and the public from the road to the west, was convenient. The studios were well-lit, and took into consideration both the individual student and the needs of the class as a group.

The lecture theatres were meticulously planned as 'machines for learning in,' the architects having learned much from the cumulative experience of Escom.

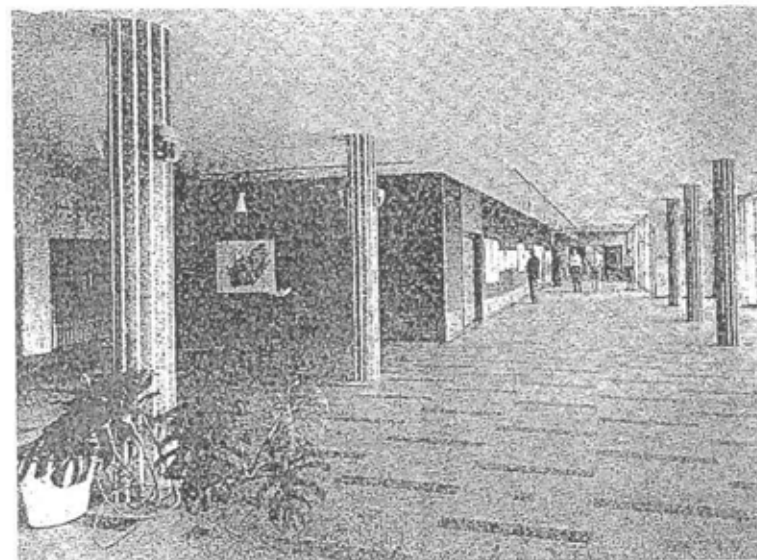
Fig. 4.23 John Moffat Building: architectural design and fine arts studios



House, the Central Block and the Hillman Building; and they opened out onto the generous foyer/exhibition space. The library with its open access shelves and generous reading spaces—with the background noise the gentle plashing of water in the fountains in the pool beyond the picture windows—was easy to manage



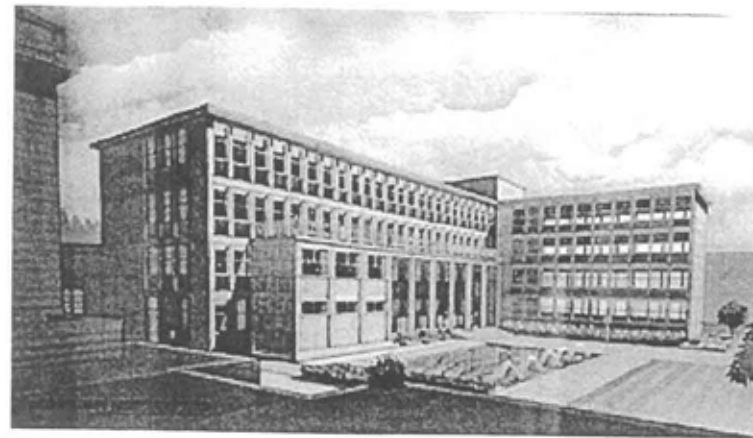
Fig. 4.24 John Moffat Building: library and foyer-exhibition area.



and pleasant to use. Staff offices were located conveniently in relation to the studios, the lecture halls, and the administration. As a didactic as well as a social environment the building worked well.

We recall that it was at the insistence of the Building Committee that the initial design, as represented in Fassler's perspective, was amended. Sometimes, apparently, it is worth while listening to the comments of one's client. The original

Fig. 4.25 John Moffat Building: east courtyard, original and final version



East façade, as shown on the perspective, is far from felicitous. Stylistically, the amended design, as we now see in the finished building, is a far happier solution. As I was not in the country at the time the revisions were made, I cannot say if they were made willingly. In any event, with the reduction in height of the building, changes to the façade were inevitable.

What was ill-proportioned and awkward has been turned into a thing of elegance and grace. The portico, reduced to three bays, now reads as an entry, and the foyer (below) and library (on the floor above) are given appropriate emphasis, both in scale and richness of surface. In the published report this is described as follows: 'The thematic variation of the basic module opening is seen both in the

large scale of these openings and in the design of the mosaic panels. These include a running pattern in pale blue on a honey-coloured background with accents of dark blue and brown, relieved by the repeated contrasts of the white glazed tiles. The standard module, it should be mentioned, was 5ft. 6in., which related to the desk spacing in the studios, and was convenient for the offices. The spandrel panels were faced in plain blue glass mosaic, set against the cream-coloured combed terrazzo of the precast column surrounds.

CONCLUSION

The cynic has it that 'a camel is a horse designed by a committee.' The John Moffat Building is no camel, and in equine terms it is a thoroughbred. As a design it holds together, and is a unified work of architecture, unmarred by major inconsistencies. It appears to be the work of one hand, not that of six architects. A committee may be a combative forum, where members striving for opposing agendas can at best hope to arrive at a compromise solution. The camel is that compromise. A team, on the other hand, is motivated by a common goal, and the resolution of differences is achieved by creative synthesis, not compromise. The common objective of the team was to produce a work of architecture which sat well in its context, respecting its neighbours, a work not of ephemeral fashion, but one which would age with grace, and a framework of accommodation practically efficient and spiritually congenial, in which teachers could educate, and coming generations develop intellectually and creatively.

The final design of this building did not reflect the direction in which Fassler, the leader of the team, had been moving. If we trace the evolution of his architecture leading up to the School of Architecture Building: the Library, the first Dental Hospital in Bok Street, and the new Dental Hospital on the campus, the John Moffat Building was not its expected summation. Moreover, nor was it to be a take-off point in his subsequent career, the direction he was to follow in the future, when he designed the Senate House and other buildings for the University.

The classical dignity and repose of the John Moffat Building is characteristic of much of Fassler's architecture. While these characteristics are not exclusively his, there are some evocations of classical details, such as the cornice and the plinth, which at that time no other member of the team would have introduced. Some unique features have the Fassler touch, and others are there only through his insistence: the spiral staircase, for instance, or the vertically-striped columns, which he claimed had been inspired by the Allianz Building in Munich, which he had visited in 1956.⁸⁵ He had, of course, used the device of the striped columns before, in Escom House, and the idiosyncratic broad horizontal joints separating the rows of tiles in the toilets repeat a finicky detail from his first Dental Hospital. But while the hand of Fassler is evident in the John Moffat Building, we venture to say that it is not a design which, on his own, he would have produced, nor is it typical of his approach to architecture. Without knowing the design history one would be hard put to say 'Ah yes, this is a John Fassler building.' Having said that, it would

be equally difficult to attribute the design to Duncan Howie, or indeed any other individual member of the design team. It is a unique synthesis of many individuals each contributing to the whole, some by taking major decisions, some by making counter-proposals, some by merely putting in a judicious word at the right moment, but all marching to the same drummer. The building is an organic whole, the result of a holistic process of design, and it is that quality of holism, where the whole is greater than the sum of the parts, that characterises true teamwork. This is not to assert that teamwork is the best way to achieve a good outcome, but it worked in this case, with this problem and this set of participants.

The design of the John Moffat Building was not revolutionary in its day, having neither the elegant sophistication of Mies at IIT, Niemeyer's pure three-dimensional geometry in Brasilia, nor the bravura display of structural form of Utzon in Sydney. At the time it was designed it was conservative, not in a pejorative sense but in the best meaning of the word, meaning to preserve that which is of value from the past, while being open to the challenges of the future. Fifty years on, it remains undated, refreshingly new.

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NOTES

- For biographical notes I am indebted to the Artefacts website, Department of Architecture, University of Pretoria. Other documents, such as the CVs of academic staff, come from the Witwatersrand University archives. Specific items are noted where relevant.
- For Furner see Gilbert Herbert, 'Furner: a Pioneer Commentator on the Modern Movement', *Plan*, December 1972.
- For an authoritative account of Martienssen and the transformation of South African architecture see Gilbert Herbert (1975).
- For Martienssen's efforts in 1932 to set up a more formal organization, first the elite Alpha Club, and then the Zerohour Group, see Herbert (1975), 94–95.
- For the exchange with Gropius see Herbert (1975) 185–86.
- In a 1933 lecture to the Vanguard Club, Martienssen named Le Corbusier, Mies van der Rohe and Gropius as his sources; in a 1934 version, given on the occasion of the Rand Daily Mail Ideal Homes exhibition, Gropius was omitted; finally, on the publication of the lecture, Le Corbusier, 'the foremost exponent of contemporary architecture,' alone remained.
- Gilbert Herbert, 'The Synthetic Vision of Walter Gropius', *South African Architectural Record* (hereafter noted as SAAR), December 1955.
- In a conversation with the author, Harvard, 1950.
- Roy Kantorowich, 'The Modern Theorists of Planning: Le Corbusier, Frank Lloyd Wright, etc.' SAAR, January 1942, pp. 6–15. Heather Martienssen, Norman Hanson and Angus Stewart all contributed to the controversy which followed, in the March, June and October issues of SAAR.
- For a comprehensive history of the school see Monte Bryer, *The Faculty of Architecture of the Witwatersrand, Johannesburg and its role in the community*, Faculty of Architecture monograph, 1977.
- Officially, the School had been a department in the Faculty of Engineering until 1940, when it was elevated to the status of an independent Faculty of Architecture, including the departments of Quantity Surveying and Fine Arts.

- 12 Pearse, *Reminiscences*, pp. 312–13.
- 13 This arrangement was not closely monitored by the University authorities, and as with all such honour systems it was not always scrupulously adhered to.
- 14 Hanson and Finkelstein had joined with Cowin and Ellis as associate architects for the iconic 20th Century Theatre in Johannesburg in the 1940s.
- 15 For Escom House see SAAR, June 1937, pp. 245–60; Herbert (1975) p. 234; Clive Chipkin, *Johannesburg Style: Architecture and Society 1880s–1960s* (1993) pp. 146–48.
- 16 John Fassler, 'Escom House,' SAAR, June 1937, pp. 246–260.
- 17 John Fassler, application for Chair in Architecture, 4 November 1947.
- 18 Fassler, SAAR, June 1937.
- 19 Bruce K. Murray: *Wits: the early years*, Witwatersrand University Press, Jhb., 1982.
- 20 Emley and Williamson were architects for the original Central Block (1920), Chemistry and Physics (1924) and Engineering Building (1925).
- 21 See Murray (1982) p. 216ff.
- 22 Professor Philip Tobias, in his address on the 75th birthday of the Cullen Library (22 November 2009), gave details of the irreplaceable contents of both the Library and the Museum.
- 23 The in-house book of John Barrow's construction firm has a chapter on the many buildings of the University for which they were the contractors.
- 24 Pearse, *Reminiscences*, p. 280.
- 25 Mira Fassler Kamstra, 'John Fassler 1910–1971,' *Architecture SA*, July/August 1985, 28–35.
- 26 These are 'The Colonists,' by Colin Gill; 'Vasco da Gama leaving Portugal,' by John Henry Amshewitz; and 'T'kama-Adamastor,' by Cyril Coetzee.
- 27 G.E. Pearse, 'The Library, University of the Witwatersrand,' SAAR, August 1934, 92–101.
- 28 Pearse the classical purist could not refrain from adding 'The introduction of an attic wall above the cornice has given rather a heavy appearance to the exterior. A blocking cornice or an open balustrade would probably have been very much better,' SAAR, August 1934, 100.
- 29 Tobias (2009).
- 30 The Hillman Building preceded the John Moffat, but it was tucked away out of sight, as it were, behind the Engineering Block.
- 31 For detailed descriptions see SAAR, April 1941, p. 135ff, also Herbert (1975), p. 235.
- 32 According to Murray (1982) p. 227, citing Pearse's notes.
- 33 Gordon Chalmers, a recent graduate of the school in whose ability Pearse had great confidence, and Paul Hahn, a part time diploma student—who was later to become Pearse's partner—also worked on the drawings, on Pearse's recommendation.
- 34 For further details of the interior design, especially of the Great Hall, see Gordon Chalmers, 'The University of the Witwatersrand, Johannesburg: the Central Block,' SAAR, 1941, 138–146; Herbert (1975) 235–36; Murray (1982) 228.
- 35 According to an article published on his retirement in 1974, 'He helped to build the campus,' *The Reporter*, p. 3.

- 36 See the account in Herbert (1975) p. 236.
- 37 For an analysis of the acoustic goals and recommendations of Carpentier see Gordon Chalmers, 'The University of the Witwatersrand, Johannesburg: the Central Block,' SAAR, 1941, pp. 134–156.
- 38 There was always criticism, of course. See Murray (1982) p. 228 for the comments of Prof. Kirby, professor of music, about critical points in the design. Kirby, a friend of Pearse, was exercising his professional judgement. He had been with Kantorowich when Carpentier was appointed, and approved of the choice.
- 39 Pearse, *Reminiscences*, p. 281.
- 40 Fassler, 'The Jean Welz Exhibition,' SAAR, October 1942, p. 285.
- 41 Katherine Munro, 'The Hillman Building: A living treasure,' *Witsreview*, October 2010.
- 42 W.D. Howie, application for the Chair in Architecture, 24 May 1968.
- 43 W.D. Howie, 'The Wolf and Hirsch Hillman Building, University of the Witwatersrand,' SAAR, 1941, 188–199.
- 44 Herbert (1975) p. 217; See also Katherine Munro, 'The Hillman Block: a living treasure,' in *Wits Review*, October 2010.
- 45 A full-page account appeared in the *Rand Daily Mail* of 19 June 1941, under the heading 'Smuts opens new block for engineers at University.'
- 46 Pearse, *Reminiscences*, 312.
- 47 John Fassler, SAAR, January 1943, 3–12.
- 48 Fassler's design of the Library is not documented, but is according to oral testimony of his daughter Mira Kamstra Fassler.
- 49 W.D. Howie, application for Chair of Architecture, 24 May 1968.
- 50 Murray (1997) pp. 196–97.
- 51 Pearse, *Reminiscences*, p. 319. The site was on the South-East corner, and not the South-West, as Pearse mistakenly writes.
- 52 Referred to as a previous decision in Minutes Building Committee, 22 August 1955 (B.C./155/55).
- 53 Fassler, application for Chair of Architecture, 4 November 1947.
- 54 John Fassler, 'New Oral and Dental Hospital for the University of the Witwatersrand, Johannesburg,' *Public Works of South Africa*, August 1951.
- 55 It should be said that while Le Corbusier at one time worked for Perret there is no evocation of the one-time hero of the Transvaal Group in this building.
- 56 John Fassler, University of the Witwatersrand School of Architecture, Twenty-Fourth Annual Exhibition and Prize-Giving, SAAR, August 1948, 234.
- 57 Nikolaus Pevsner, 'Johannesburg: the development of a contemporary vernacular in the Transvaal,' *Architectural Review*, 1953:113, 361–64, 381–87.
- 58 W.D. Howie, 'Address of the President of the TPIA,' SAAR, August 1948, 243.
- 59 Minutes Building Committee (1 November 1954) B.C./225/54.
- 60 Letter Fassler/Registrar, 3 August 1955 (B5/11a).
- 61 Letter Fassler/Registrar, 4 November 1955 (B5/11a).

- 62 Letter Registrar/Fassler, 11 November 1955 (B5/11a).
- 63 Fassler was of Swiss parentage, Howie Scottish, Tomaselli Italian, Herbert Anglo-Jewish, and Morgenstern was a Jewish war-time refugee from Belgium.
- 64 For Tomaselli see curriculum vitae, c.1972; for publication of flats see SAAR August 1955, 36–40; a 1937 student project for a church (SAAR, July 1942, 199) is unabashedly traditional.
- 65 Pevsner (1953) 371.
- 66 Dedication in Robert Venturi and Denise Scott-Brown, *Architecture as Signs and Systems for a Mannerist Time*, Harvard Univ. Press, 2004.
- 67 For Marcus's wide cultural horizon see Manfred Marcus, 'Art and Engineering,' SAAR, May 1945, pp. 89–97.
- 68 See biography in Artefacts, itself dependent in part on the RIBA Archives; and notes on the opening of the John Moffat Building in the *University Gazette*, 1959, 1:19, pp. 4–6.
- 69 Quoted in 'Opening of the John Moffat Building by the Minister for Education, Arts and Science,' *University of the Witwatersrand Gazette*, 1:19, 18 December 1959, 5–6.
- 70 'The John Moffat Building, University of the Witwatersrand, Johannesburg,' SAAR, November 1959, 16–27, unattributed, but with initials WDH (presumably W.D. Howie) at end. The article 'The John Moffat Building,' in *Convocation Commentary*, 3, 1959, by Professor John Fassler, duplicates some of the text of the more comprehensive SAAR report.
- 71 Minutes Building Committee (16 March 1955) B.C./28/55.
- 72 Central Registry Office (September 1955) B5/11a. The Auditorium was named for Mrs. Susskind in recognition of her role in the recent University Towns Festival.
- 73 Letter Fassler/Registrar, 5.12.1955.
- 74 Mira Fassler Kamstra, in a communication to the author, intimated that her father had been concerned by such a miscalculation.
- 75 Minutes Building Committee (25 April 1956) B.C./69/56.
- 76 Minutes Building Committee (18 June 1956) B.C./120/56.
- 77 Lesley Gruz, W.J. Carter and B.S.L. Gloag.
- 78 Confirmed by letter Howie/Hill & Co, 12 September 1956. Hill was replaced by N.P. Smit, an Electrical Engineer, but was retained as consultant for the air conditioning and ventilation of the lecture theatres.
- 79 Letters Registrar/Howie, 8 November 1956 and Howie/Registrar 12 November 1956 (B5/11a).
- 80 This was optimistic. Tenders were called for in May 1957, and that of J.C. Bitcon & Co. Ltd. (for £169,822) accepted in June.
- 81 'Opening of the John Moffat Building by the Minister for Education, Arts and Science,' *University of the Witwatersrand Gazette*, 1:19, 18 December 1959, 4–6.
- 82 He described this installation in great detail in SAAR, November 1959, 25–26.
- 83 This solution was innovative, but not without problems. We tested their effectiveness as a sun-filter by exposing a test blade to the sun, and were happy with the grey shadow it cast on the draughting table top within. Unfortunately, when the sun was

high, and passed through two blades, the shadow by an unexpected optical trick turned a less acceptable violet colour.

- 84 Howie, SAAR, November 1959, 23–25.
- 85 Mira Fassler Kamstra has suggested to the author that her father was influenced with respect to the spiral stair, the striped columns, and the timber inlaid doors, by details of the Allianz Building in Munich, which he visited in 1956. I would suggest that the reflection of the building in the small lake adjoining the Allianz Building would have reinforced Fassler's determination to have a shallow pool in the East courtyard of the John Moffat Building. For the Allianz Building see Baumeister, October 1955, 653 and 666.

