
5

BUILDING ANALYSIS



5.1 Conservation Approach:

The identification of a place and its associations and the immediate protection of such a *place* and/or its *setting* are identified as the first step to the formulation of a *statement of cultural significance* (ICOMOS Burra Charter 1999:10). In the instance of the Administration Building, the place of intervention has been identified. In an attempt to make this site safe, however, a series of risks has been identified that may jeopardise the cultural significance of the *place* (see *Table 5.1* below). A subsequent action has been proposed in an attempt to alleviate or reduce the identified risk factors accordingly through maintenance, alteration or intervention strategies.

26 April 1880 at 16:00
A meeting is held at The New Pretoria Club in order to investigate the possibility of opening a local hospital. 15 committee members attend amongst them Bishop Chales Joviet.

September 1880
The committee meets again and proposes a 5 bed "cottage hospital".

December 1880- February 1881
First Anglo Boer War has to effect that the Republic becomes independent.

1882
In the light of the war that had just ended, a hospital is yet to be built.

1888
A house close to the Old Barracks is donated by the government with the aim to start a 15 bed hospital on the premises.

1890
The additions to the house was designed by Mr. S. Wierda, and the cornerstone of this new hospital is unveiled by President S.J.P. Kruger. (Snyman 1977: 5)

1892
The opening of Weskoppies Psychiatric Hospital commences, housing psychiatric patients who had been placed in jail with criminals before the opening of the hospital

1932
The construction on the new hospital is complete and patients are transferred to the new facility

1927
The cornerstone is laid for the Pretoriase Algemene Hospitaal

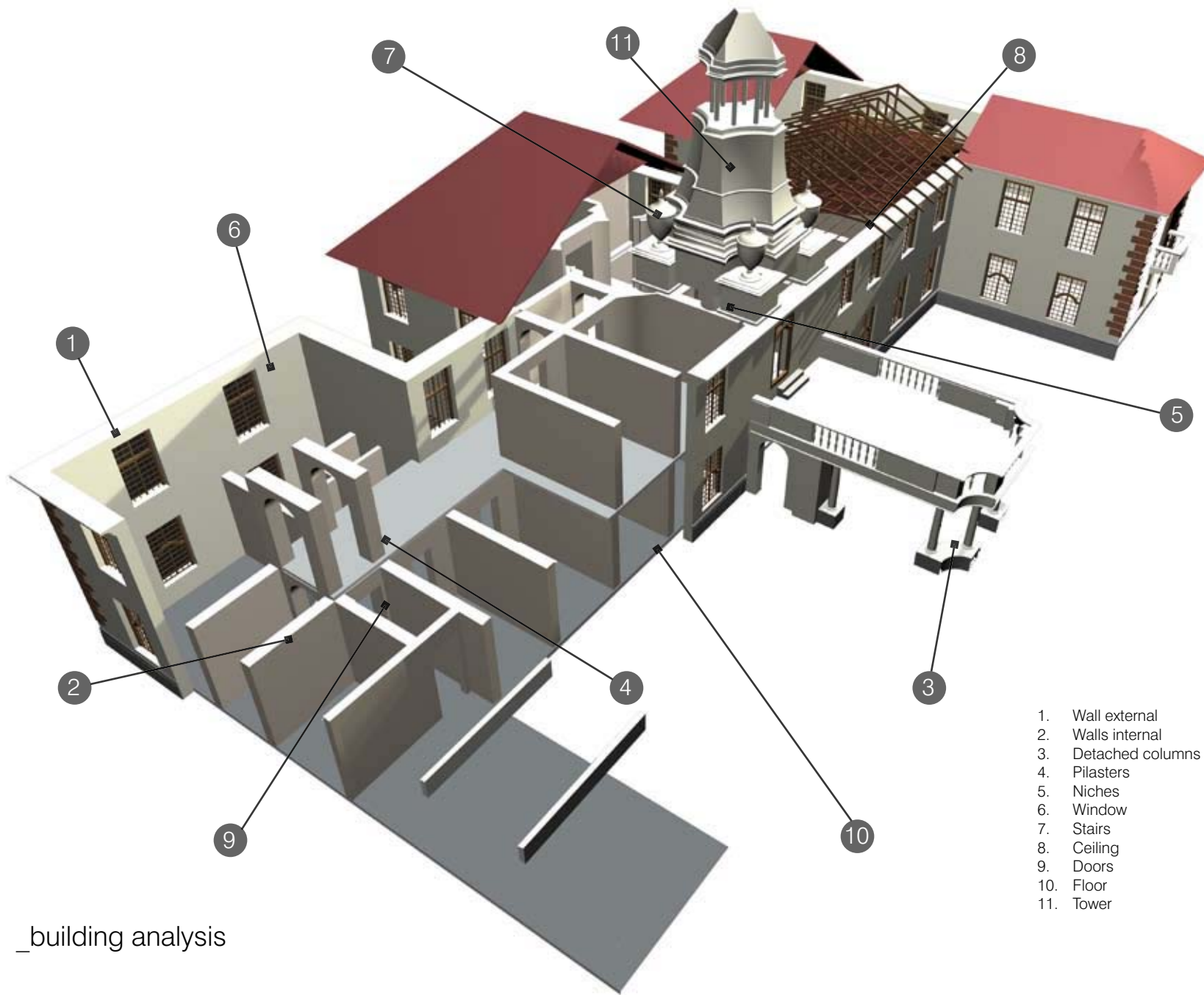
1923
Dr. Heymans (a medical doctor at The Volkshospitaal) collects 10 300 names on a petition requesting the urgent provision of additional medical facilities as the the current Volkshospitaal was not coping with the tremendous demand imposed by the Pretoria population. General J.C. Smuts made 300 000 pounds available for this project and J.S. Cleland is commissioned as architect responsible for the project (*ibid:7*).

1922
The Donkey Camp (an area to the north of Pretoria is deemed adequate for erecting a large scale medical hospital. But the government is slow to commence construction on this much needed facility

1900
British forces take over the Volkshospitaal and subsequently rename it The Pretoria Hospital. During this time The Royal Army Medical Corpse is in charge of

1896
The Volkshospitaal is upgraded to utilize electricity and the associated services

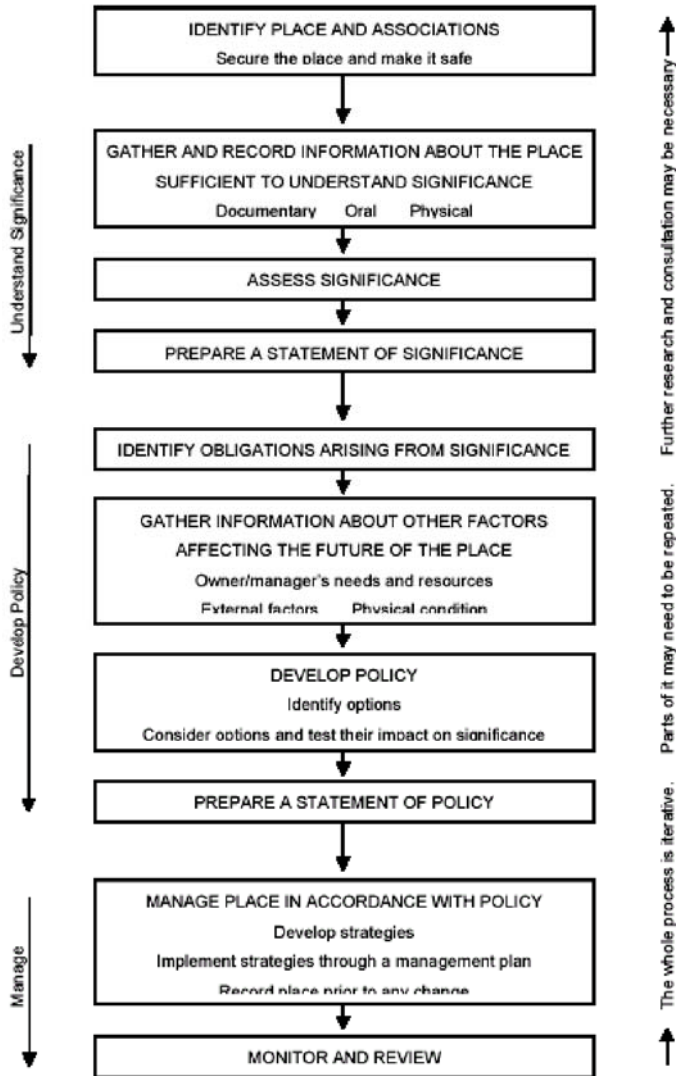
1895
6 additional beds are built increasing the hospital's cap to 320 patient



- 1. Wall external
- 2. Walls internal
- 3. Detached columns
- 4. Pilasters
- 5. Niches
- 6. Window
- 7. Stairs
- 8. Ceiling
- 9. Doors
- 10. Floor
- 11. Tower

_building analysis

Table 5.1 Summary of the application of the 1999 ICOMOS Burra Charter in establishing cultural significance. <http://www.heritage.nsw.gov.au/guidelines/index.htm>, 2010



5.2 Establishing Cultural Significance

5.2.1 The Site

Before the Anglo-Boer War (1899-1902), a colonial gentleman dubbed Hans “Donkey” traded with donkeys in the Pretoria area. This occurred after pests tormented the local population’s working livestock in 1896 and alternative means had to be sought by farmers of the area. So lucrative was his trading venture, that he subsequently purchased the ground where the Tshwane District Hospital is located at present from Hans “Klerk” in 1902. This land locally then became known as ‘the donkey camp’. The Pretoria Universiteitkollege (T.U.K.) was allocated this land in order to start an experimental agricultural farm in 1912, but after the ground was deemed unsatisfactory for the intended purpose, the donkey camp, as well as Prinshoff, was taken over by the government for the sum of £25,000 (Snyman 1977:2). The newly acquired land was set aside in order to house an envisioned hospital in the area. In 1932 the current Old Volkshospitaal was relocated to the north-eastern corner of the old donkey camp.

5.2.2 The Development of the Hospital

After several attempts to establish a much needed hospital facility in Pretoria, Mr. S. Wierda, government architect and engineer, was presented to President Kruger (Mieny, 1993:5). After the appropriate paperwork, the Volkshospitaal (as depicted in *Illustration 5.1*) opened its doors to the public on 10 October 1891 (Mieny 1993:6). The expansion of the medical services to the Pretoria public saw the development of the mental hospital at Weskoppies, as mental patients were imprisoned with criminals in Pretoria up to this point (*ibid.*). In 1895 the Jameson raid took place and as a result the authorities were challenged in treating the enormous influx of wounded and sick soldiers. In an attempt to accommodate the wounded, discussions resulted in the development of the ‘het Roode Kruis’ in the Z.A.R. which is known as The Red Cross today.

The Volkshospitaal received electricity and x-ray devices in 1898. But the current Volkshospitaal facilities could not accommodate the newly acquired X-ray machine and Mr and Mrs. Bourke made available their house in Cilliers

Street in Sunnyside as premises to house the facility. After the battle of Colenso, Boer and British soldiers were nursed side by side in this house. On 5 June 1910, British forces took over Pretoria under the leadership of Lord Roberts. The Volkshospitaal was renamed as the Pretoria Hospital and the satellite facility in Sunnyside was subsequently terminated. This service was then replaced by a tented hospital erected on the premises of Barton Keep. The Palace of Justice was also used as a hospital by British forces till the end of the war (*ibid.*).



Illustration 5.1 The Volkshospitaal (Snyman 1972:21)

In 1912 the provincial administration was approached for aid in the expansion of the medical provision capability of the Pretoria area. This followed the incompetence of the Volkshospitaal to deal with the influx of patients in that time. The flu epidemic of 1918 enforced this need. Out of sheer desperation, Dr. Heymans presented General Smuts with a petition of 10 300 names supporting this notion. As presented at the Public Hospital's enquiry Commission in Pretoria, Mr. Benson (Secretary of the Hospital) claimed that there was a danger of walls collapsing on the patients (Mieny 1993:7).

As a result, the government made available £300, 000 to develop a new hospital on the site previously known as 'the donkey camp'. The architect and head of the Department of Public Works, Mr. John Cleland, was commissioned to design the hospital.



Illustration 5.2 John Cleland

5.2.3 The Architect

Born in 1879 in Staffordshire, Mr John Stockwinn Cleland arrived in South Africa in 1903. He started his South African career as partner with M.M. William Black in Cape Town and later relocated to the firm of Tuly and Waters (Snyman 1977:29).

In 1920 Cleland joined the Department of Public Works for the Union of South Africa. He was appointed as the head architect for the Union from 1920 to 1932, after which he was promoted to Secretary of the Department of Public Works from 1932-1938 (*ibid.*)

His career includes several well-known South African buildings amongst others:

Joining forces with Sir Herbert Baker on the design of the Union Buildings

The design of South Africa house in London

He won an award for the design of the Pretoria Postal head office

He designed the National hospital in Bloemfontein, the Addington hospital in Durban and the Groote Schuur Hospital in Cape Town

He also was involved in the design of the Old Arts building on the campus of the University of Pretoria.

His daughter, Joan Agnew, recalled him (in 1975) as providing in the need of local artists by sourcing local art for installation in the buildings he designed. He also promoted the development and use of South African timber species

in the fabrication of furniture and marble from Marble Hall. As architectural representative in the Rotarian Club in Pretoria (circa 1922), Cleland urged the City Council to make provision for public spaces. He argued that although it may have been perceived that the pleasant South African climate eliminates the need for such spaces, it is ill conceived. He advocated that open spaces should be provided for children to play in. These spaces should be accessible without the use of a motor vehicle.

After his retirement in 1938, Cleland still served as advisor to the government. He passed away in 1950 at the age of 71.

5.2.4 The Administrative Building

The Administrative Building was originally utilised to accommodate five male doctors. These doctors lived on the first floor and a separate suite was allocated to Mrs. Deborah Joffe, the first female doctor at the hospital. The first floor further housed a kitchen, pantry and quarters for the housekeeper. The ground floor mainly housed offices with the “Raadsaal” in the west wing and a medical library in the east wing.

Later developments saw the Administrative Building strictly fulfil the role of the administration of the hospital. The east wing later became the encoding department, whereas the west wing later became used for the registration of admitted patients to the hospital.

The name of The Pretoria General Hospital was changed to H.F. Verwoerd Hospital on April 1960 (Snyman 1977:46). This notion followed the admission of President H.F Verwoerd as patient after an attempt on his life, resulting in extensive injuries.

The H.F Verwoerd Hospital (presently known as The Tshwane District Hospital) remained mostly unchanged as most of the primary services have been relocated to the Steve Biko Academic Hospital. Its current role is that of a level two medical institution that treats patients with less severe injuries. If patients are then found to have advanced medical requirements, they will be referred to the adjacent Steve Biko Hospital.

5.2.5 Connotation to the University of Pretoria

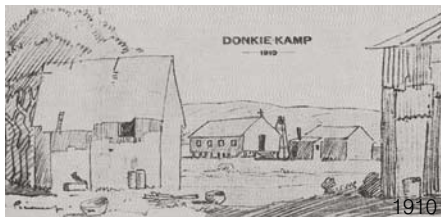


Illustration 5.3 Collage depicting building development

After the lack of funding, an unstable world economy (because of an ongoing world war) and the political pressure against the initial notion, a medical faculty was established at the University of Pretoria on 27 August 1943 with two departments; that of Anatomy and Physiology (Mieny, 1993:15). The H.F Verwoerd Hospital was used as an academic institution providing the opportunity to give students practical experience in the treatment of patients under qualified supervision. This remains the case until today.

5.3 Statement of Cultural Significance

The aforementioned documentation as compiled in *Section 5.1* and *5.2*

should be viewed as supporting material, outlining the cultural significance of the *place* as discussed. It may be deduced that the Administration Building bears significant relevance and value to its context and users. Advances in the medical field can be associated with the iconic tower of the Administration Building, which has become an architectural symbol in the urban landscape. This symbol has been a beacon for those seeking medical attention in the past century. The National Heritage and Resources Act 1999 no25(5) recognises places older than 60 years as automatically protected by law. The Act further stipulates that in principle such *places, buildings, structures and equipment of cultural significance* is part of the *national estate*, thereby placing it in the sphere of operations of resources authorities (No.25:12).

The Administration Building has served individuals of different social stature, race and income, providing patients with high quality medical care by specialised South African medical personnel. Its strive towards quality has seen the hospital involved in the training of medical personnel, thereby evolving its role to that of a highly specialised educational facility.

It is therefore evident that the Administrative Building is of cultural significance to the people of Tshwane. The proposed intervention should therefore result in the conservation of this place through the strategic implementation of specialised maintenance, alteration and intervention as proposed in *Chapter 7*.

5.4 Building Structural Analysis

1. Walls external:

Exterior wall planes isolate a portion of space to create a controlled interior environment (Ching 1996:22).

Such walls comprise of a cornice, plastered and painted vertical surface, and a formed granite plinth. The corners of the external walls are articulated in hand-formed natural sandstone blocks. Accentuating the corner articulates it as a linear condition and defines the edges of the adjoining planes in order to become a positive feature of the form (Ching 1996:81).

Apart from the plinth and the cornice, the wall is a flat surface, with the exception of window and entrance openings in the facade. Timber window frames are recessed into these openings. Later additions to the structure introduced split unit air conditioning on the south-facing walls. External walls



Illustration 5.4 Exterior wall of The Tshwane District Hospital

are 450mm wide and act as primary structural support for the roof and first floor structure.

2. Walls internal:

Internal walls are plastered and painted and appear to have been set out in a grid composition. Ching (1996:23) argues that this composition defines spatial slots with strong directional qualities joined only when the plane is interrupted by an opening.

Openings in internal walls accommodate doors. These openings are 3100mm in height and 950mm in width. Internal walls join the floor. Internal walls join the overhead plane. Internal wall thickness is 450mm.

3. Detached Columns:

Detached columns have a wall behind them which they do not touch, but into which the entablature is firmly built (Righini, 2000:85). Columns are positioned to indicate an important hierarchical function. In this specific instance it is placed to indicate entrances into the building. The connections between vertical elements (like columns) signify an invisible plane; the closer these



Illustration 5.5 Interior wall



Illustration 5.6 Detached Columns

elements are placed together, the stronger the sense of plane they convey will be (2000:14). Detached columns are round formed stone supports and taper to the top of the element. The column base is therefore wider and rests on top of a granite entablature, denoting a defined visual anchor point to the ground plane.

4. Pilasters:

These columns are placed as structural support element and act as load-bearing element for transverse arches, located along the east-west axis of the building. Pilasters are flat wall-like representations of columns (*ibid.*). Pilasters also act as a structural support mechanism for beams spanning across the east and west wings of the building individually.

5. Niches:

The foyer of the building is surrounded by four diagonal supporting walls. The diagonal walls on the southern elevation have niches. The niches are reflected in the northern side with the exception that it is articulated as a service counter in this position. These elements in their current form serve no purpose whatsoever. As a result, the structure is placed.



Illustration 5.7 Pilasters

6. Windows:

There is a significant resemblance to the Edwardian style in the execution of the timber window frames design. Righini (2000:154) remarks that Edwardian windows are based on the revival of the medieval Tudor style. The Tudor style had been known for the elaborate use of timber in doors and window frames. The Edwardian style shares this notion, and in contrast to 'hiding' timber building elements in masonry work (as a safety precaution after the London Fire in 1666) visible in the Georgian style, timber is an aesthetic feature in the Edwardian style (*ibid.*).

Some windows on the western facade have hoarding panels, but its function seems to be merely aesthetic.

Ching (1996:158) notes that the placement of openings on a vertical plane, depending on their size, number and location, begins to weaken the enclosure of space, thereby affecting spatial orientation and flow.

7. Stairs:

In contrast to the Victorian viewpoint that the staircase is an elaborate element seen as an aesthetic component free from the built form, the Edwardian style views the staircase as an integrated building component (Righini2000: 158). Vertical circulation in the building is only possible in the centrally placed staircase. Alternative vertical circulation should be considered if the building is to be used as a public space. The design of the staircase is a concrete structure with a linoleum finish and steel handrail detail.

8. Ceiling:

As in the case of the base plane, the ceiling can be manipulated to articulate zones in a room (Ching, 1996:118). The ground floor has no ceiling and the overhead concrete soffit is located at 3900mm above fixed floor level and painted white. The first floor has a 12.5mm gypsum board ceiling with a flush plaster finish and is painted white (ceiling height 3500mm).

9. Doors:

Doors are based on Edwardian principles. The generous use of timber sections, as well as the size of these openings make for an elaborate architectural component (Righini, 2000:157). All office doors have a panes fan light introducing natural light into these spaces, while also allowing ventilation.

Doors along the east-west axis are placed adjacent to the foyer and within an arched opening. The double doors leading into the passages have small glass panes and allow for the user to get a glimpse of the interior of the building. The doors, although elaborate, do not compete visually with the built structure and can even be described as light, allowing visual access even when closed.

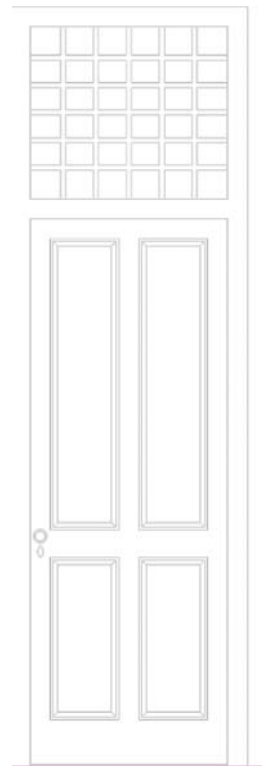


Illustration 5.8 Typical Door



Illustration 5.9 The Floor

linoleum and carpet finish in different spaces. The connecting point between the base plane and the vertical plane is accentuated with an elaborate timber floor skirting.

11. Tower:

The tower is a distinct sculptural element that has over time become a symbol synonymous with the Tshwane District Hospital. As metaphysical notion, the tower has a deeper connection to the place: the dagger with the two snakes curled around it. The dagger with wings signifies the

10. Floor:

The base plane or floor in is a planar element in the building that has no intermediate level changes. Flooring then consists of flat floor planes that are vertically spaced and accessed by a staircase. The edge definition of the floor plane is well defined, signifying a distinct field (Ching, 1996:100).

Floor material consists of a concrete floor slab (250mm deep) with different finishes; stone,



intervention of The Greek messenger to the Gods, Mercurius, in order to stop two serpents fighting. It was said that his intervention in this matter resulted in the snakes curling peacefully around his dagger and staying there for eternity. Through this symbol, the hospital accepts its responsibility to intervene and aid towards a positive outcome (Snyman, 1977:1).

5.5 Building Systems Analysis

5.5.1 Acoustics:

This building is located in a relatively quiet street. The challenge, however, is that the hospital staff and students make their way home either around the Administrative Building or through it. As a result, it may be a disturbance to the users of the building, should they be exposed to this noise pollution. The noise imposing on the building use can be divided into two categories: firstly, there is sound conveyed through the building structure and, secondly, there is sound carried through the air. Hausladen and Tichelmann (2010:39) term these principles "air borne and structure borne sound".

Air borne sound can be delivered where different users meet. These sounds may be conducted through ventilation ducting, flanking paths and cable ducting. In the case of the Administration Building, the constant flux of people through the foyer contributes greatly to air borne sound. The building is also one with a remarkably high mass and has no structural acoustic insulation at the present time. At present there is a multitude of hard surfaces in the interior spaces of the building, resulting in poor acoustic reverberation times, with the exception of the first floor offices, which are covered in an industrial carpet.

5.5.2 Climate:

This building has a high level of heat gain from the northern facade in summer. This is largely due to the fact that there are very few shading devices provided on the northern facade, resulting in an uncomfortable working environment. The solution to this challenge was to add air conditioning in order to cool the structure in summer. This building, however, has the potential to have effective cross ventilation due to the offset placement of openings, as well as the provision of openings in the internal structure to aid the flow of air. The building also has an electric boiler that heats the structure during the winter months.

The building has been fitted with a boiler radiator heating system. The boiler is currently located in the basement.

5.5.3 Light:

a. Natural Light

The Edwardian design principles evident in the architectural form of the Administration Building, dictate a constant rhythm, regarding the placing of openings. With this specific building being part of the classical revival phenomenon in the Edwardian movement, the elaborate size of window openings, as well as the frequency of its placement on the facade, becomes a distinctive trademark of the time. The result of this approach to openings allows for the interior to be washed with an abundance of warm natural light, despite the cellular interior layout. It appears that care has been taken by the architect to allow the most light into the building from the southern facade (which is also the front elevation). This notion allows a high quality of light (with effective intensity and colour rendering) to penetrate the facade without the accompanying heat gain. Openings on the western facade have been executed differently with the provision of timber louvers in front of these openings. These elements, however, were later found to be reduced to mere aesthetic elements, the addition to steel verandas on top of each window in order to reduce late afternoon glare and heat gain, made the louvers redundant.

The envisioned project should therefore engage with the existing natural lighting strategies. This poses a challenge as the control of natural illumination in the interior environment is of the utmost importance in the visual communication of elements on display. Firstly, it should be possible to control the natural lighting levels in specific spaces inside the structure; secondly, it should be possible to isolate specific lighting levels to specific spaces (in order to eliminate the 'bleeding' of unwanted light into adjacent spaces). Finally, it should be possible to provide a mechanism for the control of natural illumination without disturbing the style or the future historical value of the architecture it engages with. As mentioned previously, the fenestration of the existing Administration Building is a valuable architectural component and should arguably be retained.

b. Artificial Light

The incremental changes in the use of the building and its spaces justified

the retrofitting of artificial lighting over the years. The initial intention was to accentuate the luminaire as object with specific focus on its materiality, positioning and size. The lighting seems to have been treated as a mere result of this elaborate luminaire, and the quality of illumination provided can at best be described as low intensity ambient light. The initial positioning of task lighting was limited to one lamp per room. The quantity of lamps, combined by their placement in the ceiling or soffit above, must have allowed for a stark atmosphere with arguably uncomfortable shadow interfering with a simple task, like working at a desk at night.

As a result, fluorescent tube lighting was added to the existing offices over time. The materiality of the existing structure, combined with the warmth of the natural illumination by day, is contrasted by the introduction of cold white fluorescent lighting to be used at night. Also, the allocation of a new use for the Administration Building justifies the introduction of new specialised lighting types and luminaires, as the lighting requirements of a typical display gallery is vastly different from that of a typical office space.

5.5.4 Circulation:

The main circulatory axis passes through the foyer of the building and links with the main building of the Tshwane District Hospital. The secondary east-west axis that protrudes from the foyer introduces the user to the offices located on the southern side of the building. The current function of the building introduces storage on the ground floor of the eastern and western wings of the building. Users therefore have to move through the entire building in order to collect files. The first floor of the building houses the CEO of the hospital as well as his immediate administrative staff. Currently this staircase is the only element that allows for vertical circulation. This implies that individuals with compromised mobility will have difficulty to reach the upper floor, as no elevators have been provided in the current structure. Ching (1996) argues that access to alternative spaces in a building can be obtained not only physically, but also visually. Even though little physical access is possible to the first floor, no visual access is allowed to the first floor at present.

5.5.5 Colour

The use of colour in the Administrative Building seems not to exist. The figure below indicates a selection of the existing colour pallet. It is clear that most

of the colour perceived originates from the existing materiality of elements in the interior. There are wooden doors and window frames, the building exterior and interior are painted beige and a blue linoleum floor has subsequently been added. As already mentioned, the use of this building has ranged from residential to administrative. A human anatomy centre will require a well-considered colour expression. Ching (1996:86) states that texture and colour together affect the visual weight and scale of a plane and the degree to which it absorbs or reflect sound. Colour should allow the user to orientate himself and at the same time enable the curator to draw the visitor's attention to specific elements on display. The proposed colour strategy will be explained in point.

5.5.6 Materiality

The relationship between place and architecture has thus far been established by contextualising the Tshwane District Hospital within its setting. The relationship between architecture and place has only been explored on mostly an intangible level. Righini (2000:21) notes that architecture was, and in certain places still is, place bound. He extends his argument by investigating the writings of Geddes, famous environmentalist and regional planner, with specific reference to the valley section. In this theory it is argued that a section through any valley on earth implies crossing several different climate zones when moving from the top to the higher to lower side of this valley. Geddes (*ibid.*) argues that this climatic differentiation implies different architectural requirements for each zone. Each zone has different plant species and a varied geological composition. His findings highlight that the most typical valley section has more or less the same type of architecture in the same places along the slope of the section, and therefore concludes that the architectural setting of architecture can affect the material selection and aesthetic appearance.

The material palette of the Tshwane District Hospital is limited in its composition. It may be argued that the initial building was contracted between two wars, having a severe implication on the money available for the construction. It may also be argued that material is used in a rather conservative application. Ashby & Johnson (2006:78) indicate that what may possibly be perceived as conservative material application, may indeed be an honest approach to the application of material to architecture. This is evident when a material is applied to depict its strengths i.e. steel represents strength, polished wood represents craftsmanship and granite an idea of

performance etc. (*ibid.*:81).

Informed by the arts and crafts movement, the 'honesty' of materials in their application is evident in the Tshwane District Hospital. Expression is obtained through material form, and not always material type. Snyman (1977:28) argues that the architect allowed as far as possible to reflect the local environment in the interior of the Pretoria Algemene Hospitaal. This was evident at the time in the selection of local timber species and suppliers of building materials. Selected building elements were obtained from other countries.

