

# HEALING ACTIVITIES CENTRE

Submitted in part requirement for the Degree Magister in  
Interior Architecture (Professional) in the Faculty of  
Engineering, Built Environment and Information Technology

UNIVERSITY OF PRETORIA: Department of Architecture  
NOVEMBER 2007

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The chosen site, the former Nature and Culture History Museum is positioned next to the National Zoological Gardens in Boom Street, Pretoria. The once successful museum building has now been left deserted, resulting in a ‘big white elephant’ occupying space in the city. The valuable building is filled with potential, which will be used to its fullest during the project. At the same time, the city inhabitants distance themselves more and more from nature, losing their balance in life.

All happenings in our lives leave marks on us. These marks form an impression, a change and/or an emotional layer. Marks allow reflections back on the past. It is essential to find balance again by going back to nature, going back to our roots. Sand marks, the touch of mother earth, follow the dissertation throughout, leaving marks on the reader.

The aim is to bring life back into the building and to strengthen the wounded through activities targeting the senses, intellect, creativity, offered at the *Healing Activities Centre*.

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# 1

## BRIEFING DOCUMENT

1.1 Real World Problem

1.2 Problem Statement

1.3 Delimitations and Assumptions

1.4 Design Approach

## 1.1 REAL WORLD PROBLEM

The intake of quality food strengthens the immune system. By living close to nature and according to nature's rhythm, the human mind and body is content. The singing of the birds in the morning greatly enhances the growth and quality of fruit growing on the specific tree. Nature and health go hand in hand.

I chose to compare China's social issues and economy to that of South Africa. China has one race and one culture, while South Africa is made up of a mix of races and cultures. Still, both countries face similar problems that need to be solved. By comparing the countries, the project obtains another perspective regarding the issues relating to Pretoria.

During the Great Leap Forward campaign of 1958 to 1960, China's leaders attempted to accelerate economic income and dramatically increased the pace of industrial production throughout the country, particularly in rural areas. The aim was to industrialise by making use of the massive supply of cheap labour and to avoid having to import heavy machinery. This campaign is now widely seen, both within China and outside, as a major economic disaster.

According to 1982 census data, the number of senior physicians per 1000 population was about 10 times greater in urban areas than in rural areas. State expenditure was more than –Y26 per capita in urban areas and less than –Y3 per capita in rural areas.

Further social issues include a widened income gap, employment difficulties, poverty, corruption, social contradictions due to loss of farmland, fast economic growth etc. The country is constantly faced with social and psychological changes (News Paper: People's Daily Online).

From these statistics, it can be followed that quality of life in the stressful urban environment leads to more health problems than in the rural areas. Urbanisation exerts pressure on the human body and nature. Food is chemically treated or genetically modified and the water and air quality decreases severely, all possibly contributing to global warming.

The urban lifestyle and expectations have a negative impact on the health of the body.

In China, traditional Chinese medicine is still preferred over Western medicine. This treatment type is in direct contact or balance with nature, focusing on herbal remedies and acupuncture and treating the meridians.

Very similar social and economic problems affect South Africa.

In the midst of a strong economic growth, post-Apartheid South Africa is faced with the stubborn reality of widespread poverty and growing inequality. Millions, both rural and urban, are trapped inside the multiple crises of unemployment, landlessness, homelessness, lack of basic services, HIV/Aids, food insecurity and unacceptable levels of crime and violence (Smith 2007: 1).

"I suggest that we should see this impact of crime on human quality of life as: human injury and destruction; psychological disruption and dehumanisation..." states Lauer (Makhanya 2007: 1). According to the SAPS, the murder rate in Pretoria Central is 87 per 100000 people, making it the third-worst affected area in Pretoria. (Figure 1)

What becomes evident is that, within the urban setting, technology improves,

pressure increases, the pace quickens and we, as humans, slip further away from ourselves. The ecosystem is broken. We become less in touch with our inner self, which results in a physical and mental imbalance. Our true identity is at risk, and our senses, absorbing all the surrounding information, are stirred negatively.

The above social struggles stretch all the way right down to the Pretoria city centre, Boom Street, the old State Museum, and the site chosen for this dissertation.

There is no one solution to the world's problems. Instead, ways in which to promote healing, and to restore balance and harmony to urbanity should rather be explored. This dissertation will investigate and facilitate a Healing Activities Centre.

“Optimum health results from living harmoniously, allow the spontaneous process of change to bring one closer to balance” (traditional Chinese medicine).

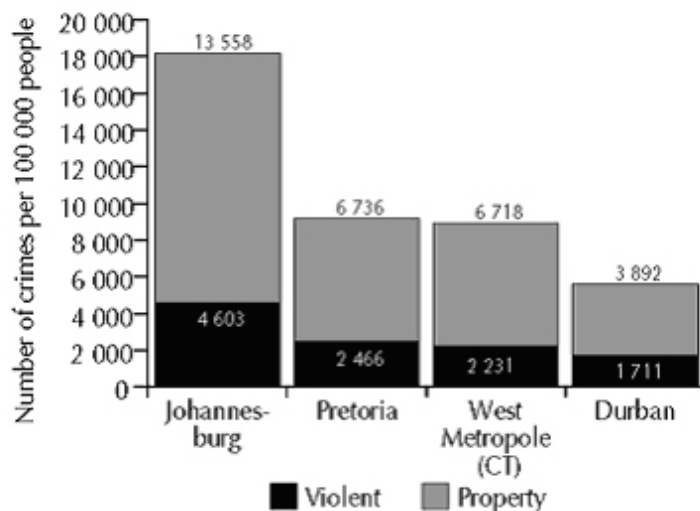


Figure 1: Proportion of assault, sexual offence and murder victims who knew the offender in some way

## 1.2 PROBLEM STATEMENT

The aim of the project is to facilitate a ‘Healing Activities Centre’, where people can re-connect with nature to find harmony in their lives. Healing will take place by receiving sensory stimulation affecting creativity, intellect and social behaviour. Therapy types and facilities will be investigated in order to fulfil the requirements of the project. Furthermore, the project will fill the building with life and fill lives with lives with hope for the future. The goal is to heal the wounded, to uplift their spirits and to equip them for life.

### Therapy

The affected will be cured physically, emotionally and/or socially, depending on the situation.

Healing will take place through different therapy forms; namely, art therapy, music therapy, animal-assisted therapy, aromatherapy and bibliotherapy; a therapeutic garden and therapy by means of projection. Stimulation of the main senses (sight, hear, smell, taste and touch) will take place individually or simultaneously, conditional on the therapist.

### Facilities and Requirements

The Centre will be in use during the day and in the evening, offering therapy sessions or activities, and house workshops or seminars. It thus offers activities for all age groups and will be open everyday of the week. In addition, accommodation is available to those who wish to book the centre for a specific time period. These accommodation facilities are also available to the public as ‘backpacker’ type accommodation.

Different healing types require different therapy aspects, such as room size, lighting, acoustics, etc. The building will respond to these needs by way of



play areas, music rooms, therapy rooms, communal spaces, gathering space, exhibition or gallery facilities, admin offices, a reception, a waiting area, a foyer, seminar space and storage facilities.

Overall, the building must act as a safe haven for people in need, and be easy to use and live in. The therapeutic value of the senses will be investigated in order to incorporate stimulants into the building. Light will play a fundamental role in creating the appropriate mood for activities. Smells of certain plants and/or animals will fuel healing. Textures, tactile or visible, will be taken in through the senses and arouse euphoric moments. Psychologically, the interaction and understanding between human and animal as part of therapy will play a major role.

#### Site

The project asks for a site that is easily accessible; central, yet quiet; and in touch with nature. The site I have chosen to work on is the 'old State Museum', situated along the London-Plane-lined Boom Street, past the National Zoo's main entrance to the east. (Figure 2) The building forms the focal end of the Andries Street axis. The front façade of the museum is swallowed up by the busy streetscape and the noise of the taxi rank diagonally opposite it, and thus, goes by almost unnoticed amidst everyday activities. However, the museum's front façade marks a monumental end to Andries Street.

The old museum is on the Pretoria Zoo property, allowing direct contact with animals and the garden, as well as other zoo facilities.

Apart from housing the healing activities, new life will be brought back to the old museum. Vibrancy will be restored with a new interior being added to the building as another layer, thereby respecting and working with the old, and

keeping what is important. The new interior will allow the building to share its history with the user; it will speak of old and new, and of time versus change. Scarpa says that the material in the building permits one to understand the building. (Scarpa 2001: 159) In so doing, optimal function, heritage material (see Building Evaluation) and building response will lead to a harmonious Healing Activities Centre.

The architecture of the building, its style, and its typology all contribute to the success of the centre. The beauty of the building touches the senses and art therapy goes well with the character and appearance of the building. The peaceful building interior, courtyard and surrounding zoo allow the users to concentrate on their senses.

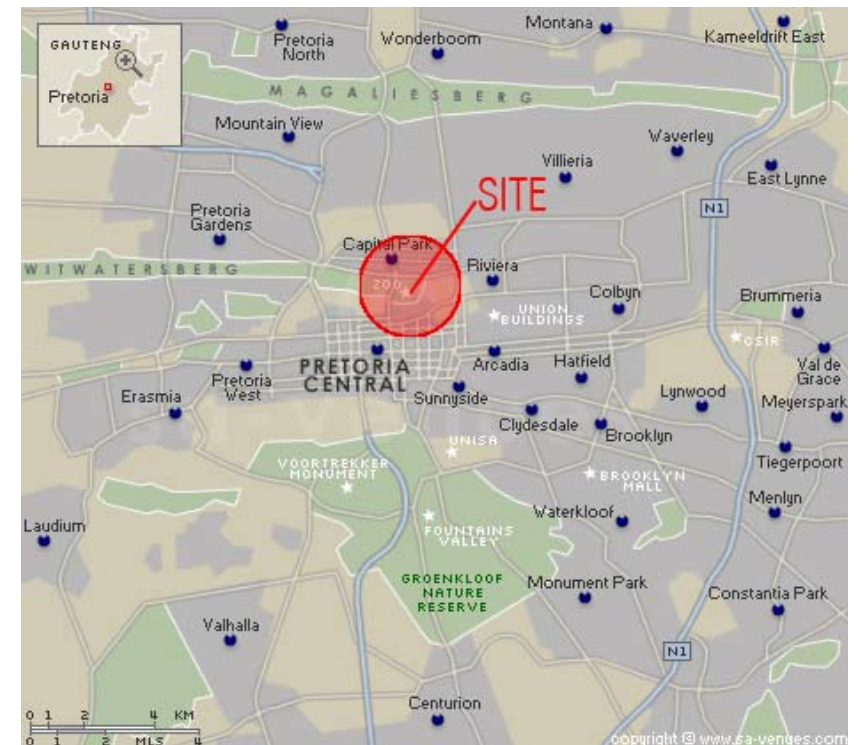


Figure 2: The location of the site in the Pretoria CBD

## Marketing

Greater awareness of the building and its use will be achieved through marketing. A new brand will clothe the building, lending a new identity, new life and a positive change to the building. By creating an unforgettable sensory experience, users will be drawn back to the building. The emotional connection formed with the place in its own serves as a convincing marketing tool. Smell, being one of the most direct senses, will be stimulated in order to draw passerby's in from outside. Labels and flyers will be scented as well, etching the building into memory lane.

Further advertising could be done through magazines, news letters to schools, posters, etc. 'Therapy through projection' will be a strong advertising tool, which directly involves the community. (see also *Therapy Types*).

## 1.3 Delimitations and Assumptions

### Delimitations

The centre is limited to treat patients only that are physically and sensory disabled. All age groups and races are welcome.

Seeing that English is the international language, therapy and activities will predominantly be offered in English. Afrikaans, a strong language in South Africa, will also be used as communication medium during therapy. In reality the language form depends on the patient and therapist's language proficiencies.

For therapy purposes the centre will be open from the morning until late afternoon. During these hours parents are unrestricted as to when to drop off their kid/s for a therapy session/s. The parent can either wait, or fetch the child/ren

later.

Functions, workshops, art exhibitions, therapy projections or the like will take place in the evenings. Depending on the activity, patients, customers, friends or the general public can join in. Such activities will roughly last until late in the evening, lending the building good, constant occupancy.

The accommodation and kitchen facilities run by separate management to the Activities Centre. Bookings purely for accommodation or meals should thus be done on a separate basis. If however, the centre is booked out for a time period, where the visitors make use of the accommodation and catering facilities in order to take part in therapy activities, the two management teams will correlate. The building will consequently be occupied on a 24-hour basis.

### Assumptions

It is assumed that the currently proposed renovation of the building will be successful. All old water pipes should be removed from the building, as they are a risk. Old electrical cabling should also be removed, as it was a later add-on and detracts from the building's potential. Since the building is 105 years old already and in serious need of maintenance, it can be assumed that the roof structure needs to be renewed. Two obvious holes in the wooden floor make the stability of the floor questionable.

In conclusion, it will be assumed for the purpose of this project, that the floor and roof construction is safe and sound; and that water pipes and electric cabling will be removed to be newly installed.



## 1.4 Design Approach

### Heritage

The former National Cultural History Museum is declared a National Monument, lending it its high heritage value. Any changes made to the building should thus be done with utter care and respect. Guidance as how to approach an old, historical building with heritage value is taken from the

Athens Charter: for Restoration of Historic Monuments

Venice Charter: international charter for the Conservation and Restoration of Monuments and Sites

Burra Charter

Vienna Memorandum: Historic Urban Landscapes

In order to ensure a building's continuity of life, it needs to be in use. The old museum building has now been standing empty for 16 years already, explaining its derelict condition. To preserve the old building would thus firstly mean to bring back life into the building.

Furthermore, a building also needs change in order to survive all demanding time spans. Change however, should be carried out carefully. To conserve the building, the existing fabric and material should be respected, together with its use, associations and meanings. Valid contributions of all periods to the building should be treasured. These contributions could stretch from a particular civilization, to a significant historical event, to cultural or architectural significance. Change may also be necessary to retain cultural significance.

Historic buildings add value to the city by branding the city's character. The history of the building should remain readable, while continuity of culture through quality interventions is the ultimate goal. All valuable interior content, fixtures

or objects should be retained in place. The chandelier in the existing foyer, for example, has a particularly aged character, tells an ancient story and will therefore be kept. Modern materials and techniques can be used during renovation or revamp and can be either concealed or prominent, depending on the design decision. New work should never disturb or detract from cultural significance.

### Design Philosophy

Spaces influence the subconscious; every room communicates a mood. It is vitally important to house a content person.

Designers have the power to influence the community by manipulating the effect of space on a person. It is therefore important to guide the indweller into a peaceful and positive being.

The building and inhabitant are caught together in a subject/object exchange of identity and location- a sense of place is formed. (Ingraham 2007: 202) An emotional connection furthermore grows between the human being and environment. A monument is inseparable from its setting and the history to which it bears witness. Associations with places and more importantly, the meanings people have for places strengthen their identity and social cohesion. Quality of life and production efficiency are enhanced by improving living-, working- and recreational conditions. A participator's life is enriched by giving him/her a deep and inspirational sense of connection to community and landscape. More information about the identity of the user is revealed; explaining the past, present future that has shaped him/her.

Architecture is inimical to certain issues of identity, which can be clearly seen on the front façade. Refer also to the context study. Colonial success involves the bulky and highly inefficient process of occupying territories, cities and buildings in order to occupy institutional and infrastructural life of the specific

culture. (Ingraham 2007: 204) Again, this can be seen on the front façade, which might almost push away a certain type of crowd, leading to its own downfall. The façade changes to become more inviting by opening it up, allowing the passer by into the building, connecting with the street. (see technical investigation: new front façade)

#### Goal

All the fabric inside the existing structure will be conserved and restored where necessary and possible.

Every new addition will be done in such a way as to touch lightly on the building. The old layer will therefore be respected, stay true and untouched. A new material layer is added to the building to full-fill its required interior functions. All new additions should be done in such a way, that they could be removed again, leaving the building unharmed. Lastly, the layer of life will be added, which consists of people, systems and displays. The approach to the historical building is thus respecting the old layer and cherishing it. A new, modern layer is added, which speaks of a different time. Different time layers can thus be read inside and on the building, telling a story of time and survival.

The emotional connection formed with the therapy center, achieved through sensory stimulation, is aimed to be positive. The sensory intake can speak louder than words. By having an unforgettable sensory experience throughout the building, a strong connection with place will be formed, in so to bring the users back to the building.





# 2

## CONTEXT ANALYSIS

2.1 History

2.2 Physical Context

2.3 Metaphysical Context

2.4 Target-User Group

2.5 Client

2.6 Economic Activity

2.7 Legislative

2.8 Discipline

2.9 Social & Health

2.10 Governmental Goals

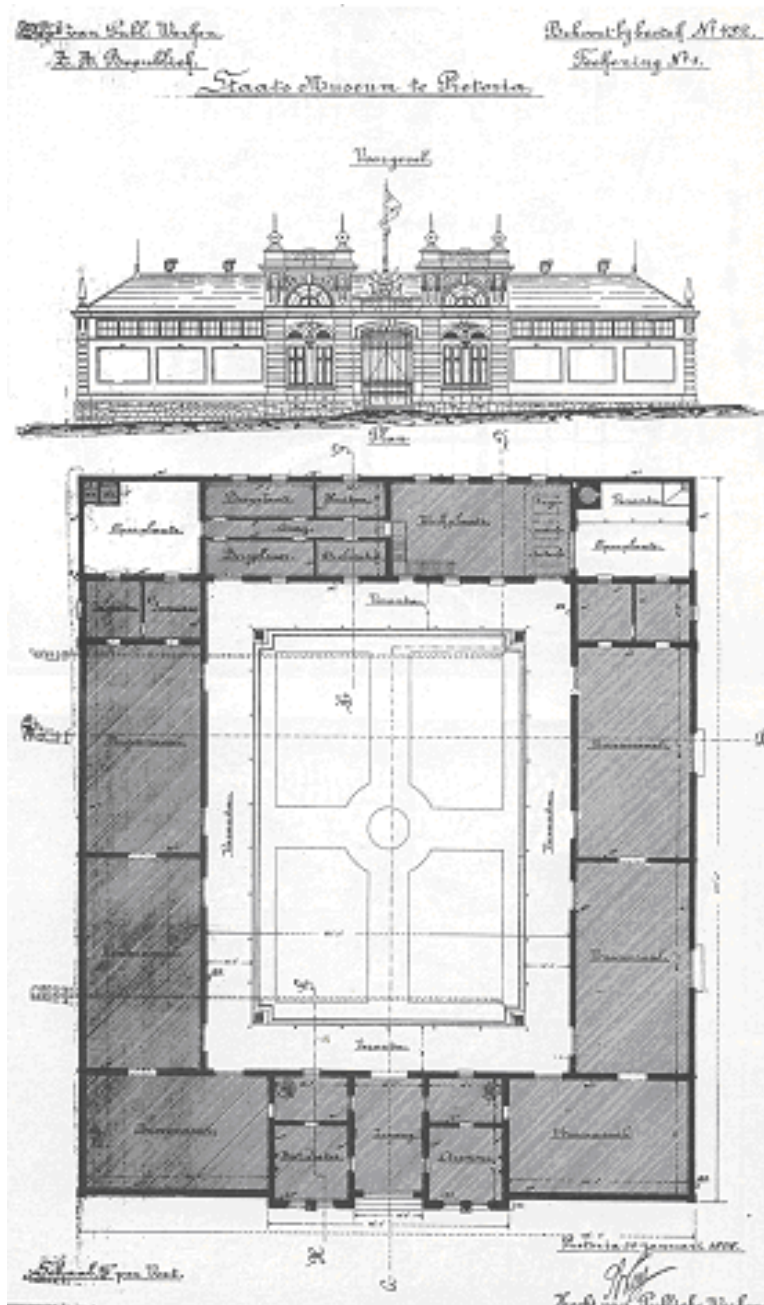


Figure 3: Copy of original Z.A.R. Staatsmuseum plan 1899

### 3.1 HISTORY

#### Time Frame

Paul Kruger (States President of the 'Zuid-Afrikaansche Republiek' or ZAR: 1883-1900) realised that the state motto 'Eendracht Maakt Macht' (strength lies in unity) would be of greater significance once an appropriate person had expressed this motto. The appearance and the dignity of the state were important to Paul Kruger and the council (Volksraad). A capable head for the 'Publike Werken' department, who would identify with the state motto, was needed to improve the state's appearance through impressive architecture and to control the state's building projects.

Sytze Wopkes Wierda, originally from the Netherlands, was personally chosen for this architectural position in the ZAR and was appointed in November 1887. His significant work and his Z.A.R. identification granted him the title 'Hoofd van Publike Werken'. (Figure 3)

From 1890 to 1899, Wierda appointed new draughtsmen, site supervisors, clerks and bookkeepers. The department did well and needed to expand further. Wierda chose to educate his students himself, ensuring a strong unity regarding culture-politics, and took full responsibility for their work. The plans for the 'Staatsmuseum' were delivered in 1899, at the end of the ZAR era, when Wierda was the main architect of 'Die Publike Werken'.

The department was already greatly hindered before the occupation of the British, but after the Anglo-Boer War (1899 -1902) the department was completely destroyed.

'Die Publike Werken' received orders from the front line to send all but the most important workers into war. Wierda is remembered for his commitment to his

position, right up till the take over of Pretoria by the British. He never fought in the war. Most of the department's personnel were deported back to the Netherlands in captivity or were fighting.

The annihilation of the 'Publike Werken' department happened in two ways. Firstly, the department as an institution was destroyed with the take over of Pretoria. Secondly, it was symbolically destroyed when the ZAR coat of arms was removed from the 'Ou Raadsaal' (Parliament House) when the capital city was invaded. The department's personnel were not re-employed, resulting in an immediate loss of department skill. (Minnaar 2001: 204)

### The State Museum

The establishment of the State Museum in 1892 can be attributed to the initiative of the ZAR State Secretary, Dr W. J. Leyds, whom the board of the State Museum regard as 'the Father of the State Museum'. The idea behind the museum was to establish a true museum with a national collection of natural and manufactured products, and art and antiques of South Africa and other countries. Initially, the museum was biased towards cultural artefacts, but the weight soon shifted towards national history (Dippenaar 1992: 2).

It was first housed in a small room, the Museum Room, next to the clock tower on the top floor of the 'Raadsaal' on church square. In 1894, when that room became too small and too inaccessible to visitors, the government allocated the museum to a small building at the Pretoria fresh-produce market, situated on the now Sammy Marks Square in Van der Walt Street. Dr J.W.B. Gunning was appointed as the museum director in December 1897.

It was not long till the market building also became too small to house the rapidly growing collections. In December 1898, after several attempts for a

new, 'proper' museum building, tenders were released for a building on Boom Street, at the point where Andries Street intersects it. The cornerstone of the new building was laid in July 1899.

The Second Anglo-Boer War broke out on 11 October 1899, interrupting the building process. When the British invaded Pretoria on 5 June 1900, the museum had reached roof height. The museum was closed till 8 June 1900, when it was re-opened with the name Pretoria Museum, later to be changed to Transvaal Museum. The museum building was finally completed in December 1904 (Dippenaar 1992: 9). (Figure 4)

On 20 January 1902, after the war, the British colonial government closed a contract with the same builder contracted to build the museum before the war to complete the building. Dr Gunning stayed on as director until his death in 1913.

By 1930, the museum exhibited significant historical, ethnographic and archaeological collections. Most of these collections were donated, and traditionally, the name of the donor would be part of the exhibition. Several spectacular collections were displayed. The Louis Botha collection, dating back to 1922, is one of the most significant collections added to the holdings of the history section. In 1952, the museum housed a complete 'Voortrekker' cultural history exhibition and facilitated a Van Riebeeck Festival. The museum excelled. An Anglo-Boer War collection was added in 1972, and the National Cultural History Museum celebrated its Silver Jubilee in 1989.

Yet, the Old Museum was abandoned as head office and closed down in 1991. The displays in the eastern wing were damaged severely after a pipe burst in the same year. Another pipe burst in July 1992 caused irreparable damage to the





Figure 4: Museum soon after completion, 1904

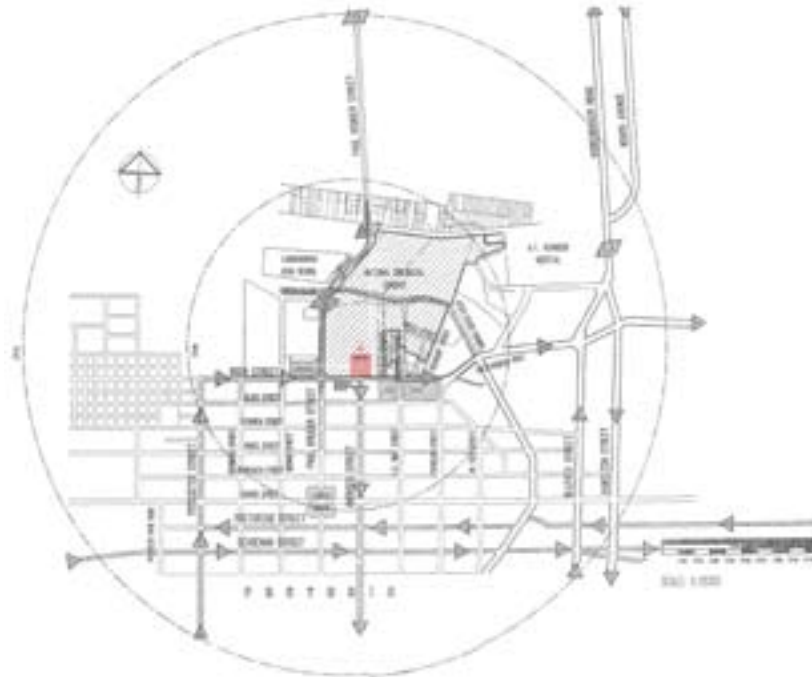


Figure 5: Access routes, location of site

museum, which had to be closed to the public (Dippenaar 1992: 92).

Traces of the old collections and exhibition cabinets can be found in the abandoned Old Museum, which has been declared a National Monument.

## 2.2. PHYSICAL CONTEXT

### Location

The old ZAR museum is located in the northern part of the Pretoria CBD, against the Daspoort Ridge. It is built on the premises of the Pretoria Zoo, where Boom Street and Andries Street intersect. The zoo and Boom Street physically enclose the museum (Figure 5).

### Zoning

The wider area is zoned as predominantly 'business' and can be seen and experienced throughout Boom Street and Bloed Street in the form of small and large scale commercial activities. This business zone excludes the use of noxious industry and spray-painting (Figure 6).

To the east, zoning includes special and general residential. This area stretches along De Waal Street and Margaretha Street, which is laden with heritage material.

No specific land use is allocated to the west, allowing for many future options.

The previously demolished area in Marabastad, claimed for the 1967 Freeway Scheme, is zoned as undetermined. This affected area unfortunately lacks order and identity.

## Links

Most of the north-south streets terminate against Boom Street. One exception is Paul Kruger Street, which leads up past the zoo to disappear in the north. Paul Kruger Street is the major transport route, leading directly to the Pretoria Station. The old 'Staatsmuseum' forms the focal end of the Andries Street axis (Figure 7).

## Climate

The generally high summer temperatures and the often high humidity result in an uncomfortable, clammy heat.

Seasonal rainfall averages 741 mm per year. Thunderstorm precipitation rates can go up to between 90 and 100 mm p/hr. Hailstorms are quite common and can be severe (recorded stones of 142 g in 1949), and the annual cloud cover is 33%, ranging from 13% in winter to 54% in summer.

Prevailing winds are calm, and are mainly from a north-east direction in the morning and a north-west direction in the afternoon. Strong winds occur during thunderstorms, and afternoon winds are expected to be much stronger, as they are funnelled through the Daspoort Ridge (Tayob 1999: 90).

The slope, the river and the ridge have a negative impact on the dispersion of air pollutants. According to residents, the pollution, high summer temperatures, high diurnal temperature range and precipitation intensity cause uncomfortable living conditions. At night the smells of the zoo stir into the eastern residential side.

## Topography

The Pretoria Zoo is situated 1 300 m above sea level. A mild slope of 1:27 runs

from the south-west to north-east, from Boom Street to the Apies River (Tayob 1999: 87).

The Daspoort Ridge and Apies River form the northern boundary, inhibiting further development in the northerly direction. The ridge is part of the Witwatersberge, an east-west mountain range running through the inner city (Figure 8).



## Geology

A geological map shows that most of the underlying geology is composed of localised Andesitic lava with agglomerate, shale and turf. Observation shows that annual erosion removes residual soils, but, this does not create building problems (Figure 9).

## Developmental proposals

The Capital Consortium developed the ISDF (Integrated Spatial Development



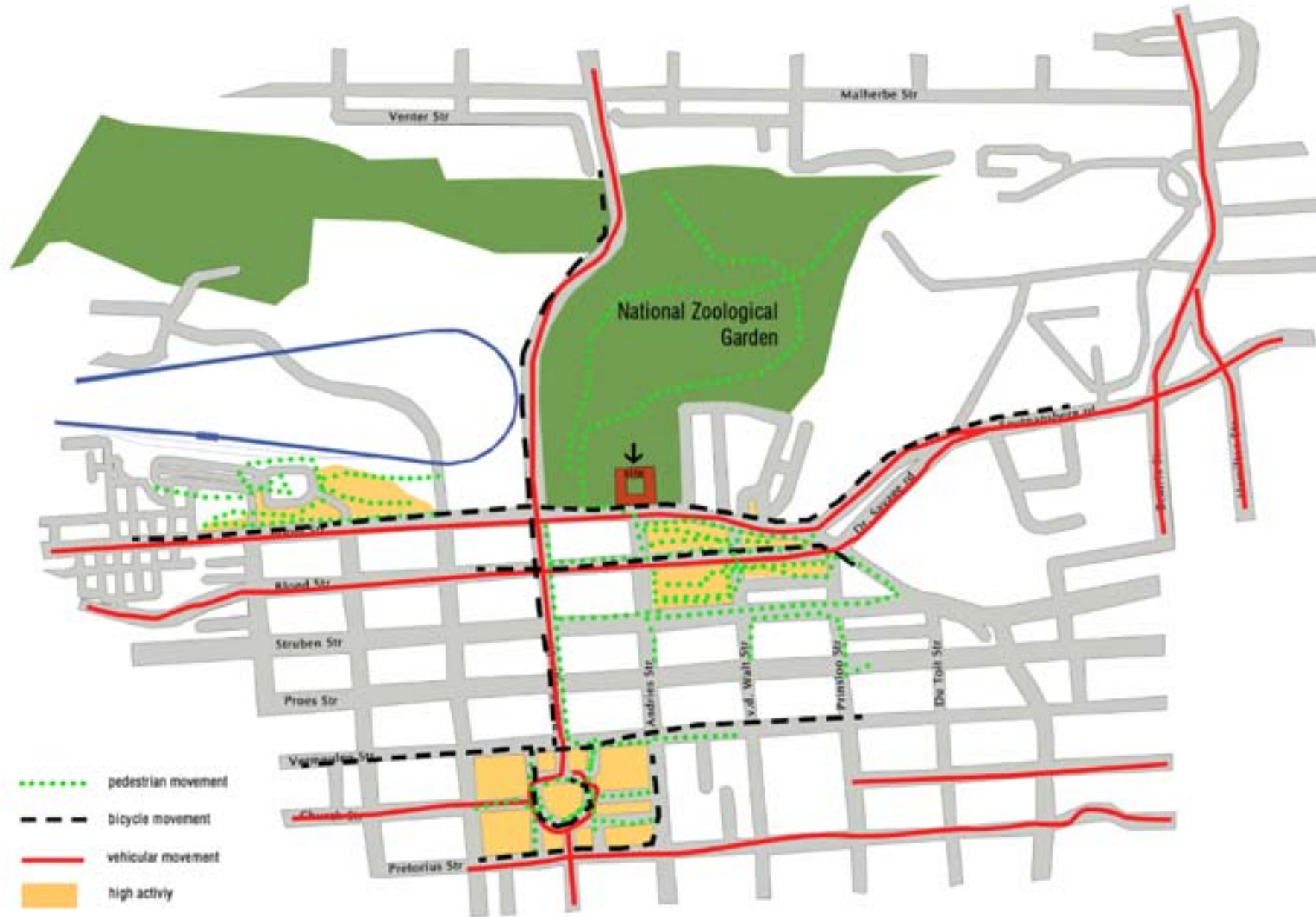


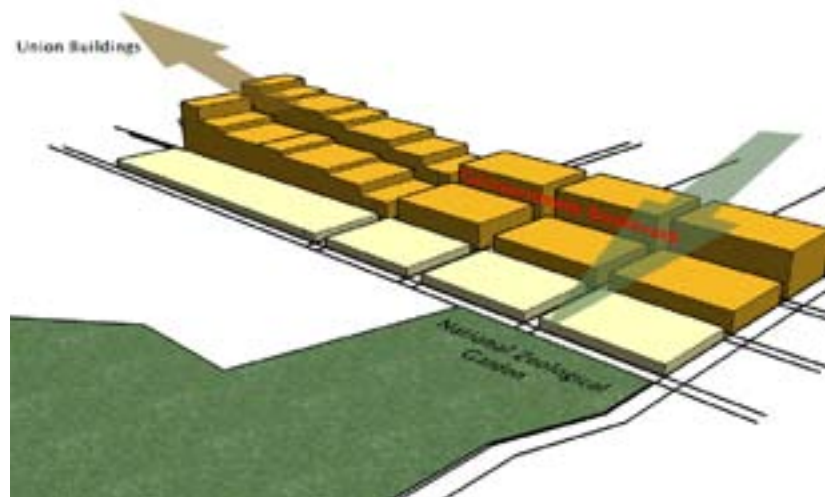
Figure 7: Movement Map illustrating different forms and intensities of transport



Figure 9: Soil Map



Framework) and proposed that a Government Boulevard should be developed along either side of Struben Street. In order to enhance the processional qualities of the street, it was stated that the highest building should be in Paul Kruger Street, with a descending line in height towards the Apies River, where the lowest point is reached. It was proposed that the height line should ascend towards the Union Buildings in the east in order to enhance views and sight lines from within the boulevard (Figure 10).



An 'Open Space System' is characterised by the Apies River, the Walker Spruit and the Steenhoven Spruit, along which there are several activity nodes. The ISDF proposes the relocation of the zoo's main entrance to the east, next to the Apies River. However, if this should happen, Boom Street will lose its unique character and the zoo will be even more alienated from the inner city.

Public and Transport proposals aim at formalising the taxi rank located between Boom and Bloed streets, thereby concentrating the washing, maintenance and informal parking on a specific area. This proposal would still have a negative

effect on the desired pedestrian-friendly zone and would harm the impression of the city entrance as well.

Another ISDF proposal plans to pedestrianise Paul Kruger Street. This would have a huge impact on the pedestrian-friendly access to the zoo and would invite a safer environment. It would also break the high speeds of taxis and other traffic driving along Boom Street.

The ISDF further promotes the reinforcement of the existing CBD grid. By reinforcing the grid, all axes leading to Boom Street should be enhanced — especially Andries Street, which has a focal ending against the exceptional old 'Staatsmuseum'. Edges and activities along Andries Street should be well maintained so as to allow clear visibility and attraction (Moolman 2001: ).

The pedestrianisation of Paul Kruger Street and the reinforcement of the CBD grid would vastly benefit the chosen site.

#### Sensory context

A wide variety of senses are triggered when in the district of the Old Museum. The informal taxi rank is situated between Boom Street and Bloed Street, and a lot of noise is created here. Taxis hoot, music is played loudly and people shout, all combined with the traffic noise of the speeding cars in Boom Street. Conversely, exceptional peace and quiet can be experienced in the residential part to the east of the zoo. Other surrounding noisy areas do not affect the chosen site.

Boom Street is one of only a few streets in Pretoria that are lined with London Planes. This is an attractive feature which gives the street its unique character. Bloed Street, like the majority of Pretoria's street, is lined with Jacaranda trees.

A beautiful, peaceful atmosphere is found in the church square park. However, the area around the chosen site is, to a great extent, visually unorganised and unattractive. Too much information is provided to the onlooker.

Inhabitants complain about a urinal odour coming from the zoo and invading the air at night. A variety of smells are generated by the informal trading along Bloed Street as well. These smells include chicken or meat being braaied, rubbish and car fumes. Together with smelling the food comes tasting the food, if bought. Formal shops offer more food and drinking beverages. The design will respond to this problem by filtering out the bad smells and reintroducing pleasant, therapeutic scents.

Boom Street maintains a relatively safe atmosphere. By keeping the zoo's main entrance next to the museum building, some order is kept. Sidewalk pavements along Bloed Street barely exist, and if they do, they are uneven. This street has a faster, alerting vibe and can make a stranger feel nervous. This feeling is, in turn, contrasted by the calm informal traders. Rough textures dominate these streets.

It is extraordinary how the atmosphere around the Old Museum building is in total contrast with the building interior, the courtyard and the zoo. Peace, harmony and timelessness characterise this scene (Figure 11).



### 2.3. METAPHYSICAL CONTEXT

#### Setting

The site is situated between the zoo and the medical institutions to the north-east. The 'Healing Activities Centre' thus, literally and physically forms a link between the two.

The physical context of the site, situated on the edge of the National Zoological Gardens, is historically important, strategically located, in desperate need of intervention, and has the potential to make a striking impact on the surrounding urban quality (Figure 12).



The physical realm chosen has definite metaphysical undertones, which contribute extensively to the desired development of people and especially people with special needs (Moolman 2001: 64).

The setting provides a safe transition zone from the busy Boom Street to the quiet, peaceful zoo landscape. The users are thus exposed to both chaos and serenity and thereby, are made fit to cope in both worlds. The calm building interior offers a good environment for concentration skills, hearing skills and soothing treatment types. The site also allows people to find balance and harmony in today's rat race life style.

The people with special needs will, by travelling to the inner city, familiarise themselves with a bigger territory on a daily or weekly basis. This will boost their self-confidence and independency (Moolman 2001: 66).

People with special needs are often rejected as 'different'. Activities could

be planned at the zoo, where the 'able' children could play with the disabled children, thereby enhancing interaction and acceptance. For example, children could feed the animals together or enjoy animal rides.

#### Building state

The dilapidated façade unfortunately almost disappears in the disarray along Boom Street. (Figure 13) The backside of the building stretches into the zoo, where it enjoys the peace and quiet of nature. It is a double-storey plastered brick structure with a basement and courtyard in the middle. The courtyard offers a variety of spaces for the semi-private environment. (Figure 14) The south facing front façade is cut from sandstone and the surrounding corrugated iron roof features triangular ventilators. The main entrance allows pedestrians to enter via the museum front façade in Boom Street, where the museum front looks straight down Andries Street. (Figure 15) The Old Museum is currently in a derelict condition. Nature has taken its toll over the past, and the building has suffered damage due to burst pipes. Due to weathering, the building almost blends in with nature. However, the front and west façades stand out and catch the eye immediately.

#### Building interior

The building interior is faced with endless possibilities in terms of the flow of space, careful opening up of walls, light, acoustics, scale, etc. Currently, it consists of exhibition areas, which are mostly delapidated, throughout. Due to darkly painted clerestory windows, the entire ground floors of the south wing and the west wing are pitch black.

Two separate timber staircases inside the disconnected southern towers lead up to second storeys, which look into the courtyard and out onto Boom Street. The top storeys are filled with light and contain neglected pressed steel ceil-

ings (Figure 16). These spaces are the spaces filled with a sense of privacy. A lower timber ceiling has been added underneath the top floor.

The eastern wing has a high pressed steel ceiling and clerestory windows, which are partly closed up and weathered, but still allowing good light. (Figure 17) Inside the courtyard, a further addition has been added to the eastern wing, which led to the destruction of the original veranda and slate slabs. This addition is dark and dilapidated inside, resulting in it being an awkward add on (Figure 18).

Only two big timber doors (Figure 19) lead to the western outside, while four smaller timber doors open up to the courtyard. (Figure 20) As the storey goes, the museum building material was transported by horse carriage and offloaded on the western façade. The façade doors were used as entry onto the offloading platform into the building interior. This also explains the door height (4 m) and the lack of exterior stairs leading up to the interior floor level. The ceiling is once again a high pressed steel ceiling, but is vaulted in (Figure 21). One of the two main spaces is chaotically subdivided into smaller spaces. One big western timber door is completely concealed by these additions.

Lastly, there is the northern wing which has the friendliest atmosphere due to it being warm and filled with light. A staircase in the main area forms the focus and leads up to a second floor (Figure 22). To the eastern side, inside the northern wing and the adjacent eastern wing, there are display rooms which were late additions. All three rooms, however, are isolated. To the western side, are partially rebuilt rooms which are as storage. Upstairs, one main wall originally divided the space into two. Later additions have left it full of illogical sub-rooms.

Steep stairs leading to the basement are found in the northern wing (Figure 23). The basement consists of one bigger room, and from an arch leads into more arched corridors. It is evident that arches have been closed up to form a long narrow room. The basement only has windows along the northern façade (Figure 24). As the natural ground level slopes down a storey height from the northern to the southern façade, it offers the possibility of inserting doors for direct access into and out of the building.

Northern, southern and western covered verandas form a link between the interior and the courtyard (Figure 25). The open museum entrance within the southern wing allows visual access from Boom Street into the courtyard. A fully-grown London Plane and a quiet, peaceful atmosphere dominate the courtyard (Figure 26).







Figure 18: View into courtyard addition

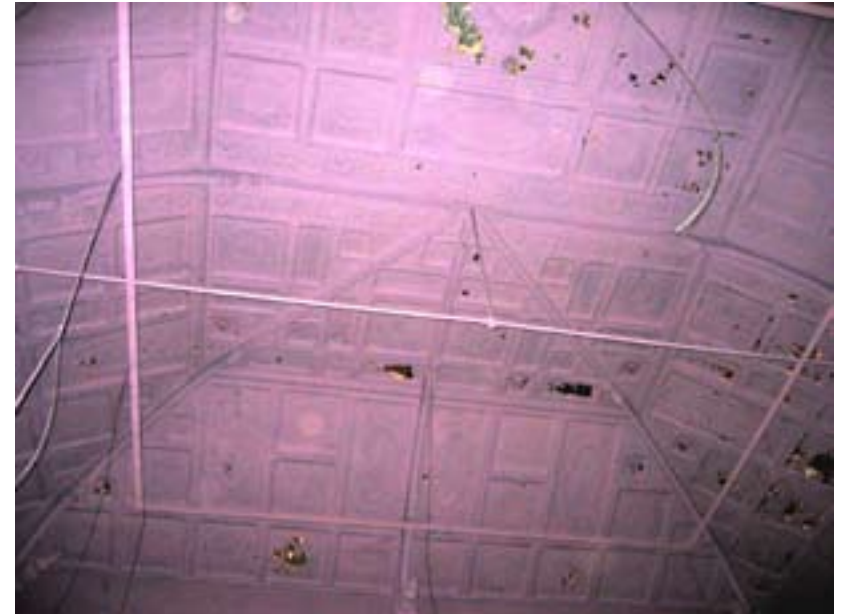


Figure 21: Unique vaulted ceiling



Figure 19: 'Wagon' timber door    Figure 20: Existing door into courtyard





Fi

#### Links

The most important link is the inside and the outside. The building, as pro-



posed, is divided up into different functioning zones. The courtyard is situated in the centre of all of these zones, thus playing an essential role in combining all areas and therapy types. All interior zones will lead out into the courtyard.

A clearly defined link between the Healing Activities Centre and the animals in the zoo is vital to ensure the safety and arrival of all users. Such a link, as a pathway, must have a tactile quality and must be distinguished by colour, texture, sound and scent.

A literal link from the unfamiliar to the familiar is facilitated through the seminars and workshops and the library, where parents, family members and friends can receive further training or information regarding a relevant sensory healing topic. This will aid the understanding and helping of the sensory affected person.

#### 2.4. THE TARGET-USER GROUP

The Healing Activities Centre caters for a mixed user group. The group is made up of children who experience sensory integration problems and individuals who need healing, either emotionally or physically. The centre also facilitates chess and bridge matches. It will be possible to book the centre for a weekend for national or international tournaments. School groups, clubs and companies are invited to book the centre for exercise, such as 'teambuilding through art therapy.' Furthermore, people who may be missing a sense will be able to come to the centre to receive healing via using and concentrating on remaining senses.

All age groups are included, ranging right from children to pensioners.

Treatment can take place either on an individual basis or in group therapy. Flexible spaces will accommodate both. It is equally beneficial for the sensory affected and non-affected to interact with one another in order to understand and accept the other. This will have a ripple effect on the greater community and will lead to better socialising skills and job possibilities. After recovery, the patients will leave with new life skills.

The centre also invites parents, family members and friends to take part in the training, counselling and information sessions offered in order to receive guidance and motivation.

#### 2.5. THE CLIENT

The clientele is made up of the institutions funding and building up the centre. Such members will become shareholders of the Activities Centre and will include: specialised schools- such as the Prinshof School for the Visually Impaired and the Transoranje School for the Deaf; social workers; occupational therapists; the Department of Health and Education and Pretoria Council Culture Department; Chess SA; bridge clubs; Blue IQ; and the Pretoria Zoo. One (private) company, receiving support from its shareholders, will manage, facilitate, promote and market the Healing Activities Centre.

#### 2.6. ECONOMIC ACTIVITY



Many of the workers in the CBD travel by train from their home locations and arrive at the Belle Ombre Station to the west of the site. A secondary transport need is created through taxis taking the workers to their work destinations. The taxi rank is situated between Boom Street and Bloed Street near the zoo. The need for taxi transport spills over to create a need of having for the sale of beverages along the streets.

A limited amount of travellers, mainly residential, make use of private transport. Little flow of money goes into the area.

The Belle Ombre Station allows for outside business entering the CBD. An influx of money keeps the area going, and both taxis and beverage stalls benefit from it.

Although a lot of activity happens around the zoo, the zoo does not feed off of it. The taxi rank and stalls, and the resultant chaos along the streets have a negative impact on zoo visitors. Due to the CBD disintegrating, the quality and safety of the CBD are falling apart, and many potential visitors do not even consider going into the city anymore.

The taxi rank and stalls however, do create ways of life and do generate income, and they keep the current Boom Street culture going. Although, it is debatable whether it is a culture conducive to the upliftment of the environment.

A Timbercity is located along Bloed Street, but it has plans to relocate to a 'better' suburb. Shoprite can be found in the same street, but they target a different market.

The economy in the district will be boosted by the introduction of the Activities Centre. A different crowd, with a different need will be drawn to the area - a

crowd which will possibly be of another class and which will feed money into the local economy. Within the Centre, the Art Café, exhibitions, performances, accommodation and tournaments are all money generating opportunities. The activities happening within the centre will not interfere with what's happening outside, thus the centre will contribute to uplifting the area.

## 2.7. LEGISLATIVE CONTEXT

Rush suggests that the interior should resolve the direct demands that people make on the building to provide comfort in supporting activity. He outlines five performance mandates (spatial performance, acoustical performance, visual performance, air quality and building integrity), which are defined by physiological, psychological, sociological and economic needs (Rush 1986: 232-316).

Street levels, critical dimensions, stairways, glazing, lighting and ventilation, disabled facilities (body, blind and deaf), fire protection and public safety will comply with the SABS 0400-1990.

Other treatment centres will be studied to certify that the 'Healing Activities Centre' will comply with all therapy standards, thereby ensuring great success.

## 2.8. DISCIPLINE

Interior architecture offers reaction to space, thereby restructuring and/or reorganising the interior spaces inside a building. It is important not to do this on an isolated scale, but rather as part of the bigger development, linking to the greater framework.

By researching the required function of the building, the interior architect is able to make an informed decision regarding the interior spaces and layout. On a heritage basis, important, historical documentation should be kept and celebrated, as the old should always be remembered. The building is used by people, thus it should optimally accommodate the users.

The theoretical approach should be in balance with the concept of discipline and site context. Proper site investigation forms a crucial part of understanding the site problems and possessing the ability to intervene with constructive design.

## 2.9. EDUCATION AND HEALTH

As mentioned before, the 'Healing Activities Centre' is located amidst medical and educational institutions.

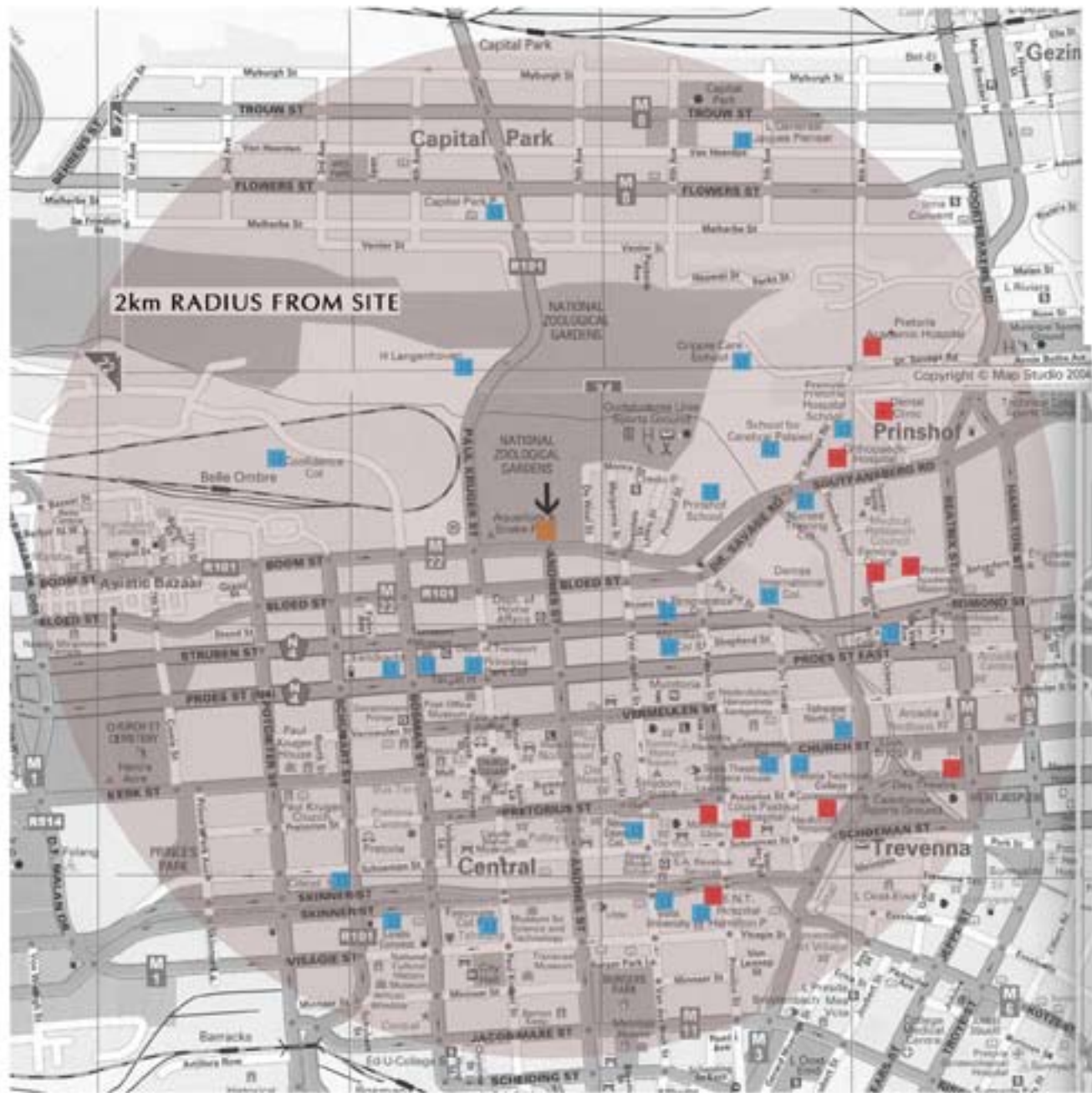
Schools, specialised schools, hospitals and clinics in the area encompass the Activities Centre whole-heartedly.

Within a radius of up to 2 km from the Old Museum, there are 25 educational (of which three specialised) and 10 medical registered institutions. (Figure 27)

## 2.10. GOVERNMENTAL GOALS

The Department of Home Affairs and the Department of Transport are situated along either side of Struben Street. Once the ISDF-proposed Government Boulevard along the Struben Street had become a reality, automatic ordering of the area would have taken place when the offices were spilling out to the sides.

In my opinion, the government has a big responsibility to rejuvenating the city. The city has disintegrated over time, and has lost quality and safety. Boom Street covers an important landscape and has possibilities that should not be forgotten in the future. The zoo's location is bound to stay, and the environment around it needs to be uplifted in order to draw more interest into and around the CBD.



- SITE
- Medical Institutions
- Educational Institutions

Figure 27: Medical and Educational Institution Map

# 3

## THERAPY APPROACH

3.1 Therapy Types

3.2 Sensory Integration

3.3 Colour and Human Response

### 3.1 THERAPY TYPES

A definition of the different therapy types will follow. However, the term therapy needs to be defined first.

According to Dalley (1987:30), "It can be viewed as a special kind of learning that deals with a person's inner world and the immediate social world."

While Harriman (1980: 202) describes therapy as, "Any procedure which serves to ease, to alleviate, or to cure a disorder or personality maladjustment and which is administered by a professionally qualified expert."

Therapy is aimed at people seeking healing - emotionally, physically or socially. Emotional wounds can stem from abuse, trauma or other painful past experiences. Physical treatment would serve people who, for example, have had a stroke and struggle with fine motor skills and body control, concentration or coordination. Those left with only partially functioning senses will receive healing through the sharpening of the other senses to enable them to lead a life which is as normal as possible (see Sensory Integration).

Through the therapy types, especially, art therapy and bibliotherapy, the problem is externalised and is subject to the patient's influence and control. Externalising the problem helps the person to gain a reflexive perspective on their life.

The role of the therapist is to be a master at creating a suitable space for the specific therapy type - an architect of communication. Through this, easy conversation will lead to sensible healing. The therapist is a participant-observer and a participant-manager of the therapeutic session. (Van der Merwe 2001:

16,17)

Growth within oneself happens through healing. Through therapy, the patients' creativity, intellect and social skills are stimulated. Interplay between these aspects will continue throughout therapeutic activities. (Figure 28)



Figure 28: The interplay between intellect, social and creativity during therapy

#### Art Therapy

Art therapy originated in the time period of 1930 to 1950, and most writers write about art therapy within a theory framework of Freud and Jung.

To express feelings and emotions, the deaf (specifically) or any other person make use of alternative forms of communication. This can be done through painting, sculpting or acting. The patient portrays his/her conscious and sub-conscious thoughts to the therapist in a less emotional or painful way, through a reflection of the inner self. Having an art form to show significant others is a powerful tool for change (Van der Merwe 2001: 59). Mills (1985) explains that art therapy can have a powerful effect on clients by helping them evoke hidden aspects of themselves, and it allows the clients to explain themselves in their own personal way. The therapist understands the art forms and can, consequently, stabilise and treat the patient.

Art therapy can be approached as either two- or three-dimensional. The setup generally needs to be informal, neutral and, above all safe. Depending on the patient, the spaces can be private and quiet, but should be able to easily 'collapse' to create an open feel for group work facilities. The atmosphere should be warm and welcoming.

As art therapy also incorporates drama, facilities should be available for acting out roles, such as a stage-like structure or dollhouses. Human modelling would be carried out as a 3D art form. By modelling a human, certain qualities will stand out. The patient indirectly projects his/her thoughts regarding the model. The art therapy section must also include a basin.

Art therapy overlaps with dance and music therapy, and aims to recover disharmonious backgrounds.

Items necessary for art therapy include: (Figure 74)

- o paint, watercolour, crayons, pastels, felt-tip pens, pencils, paintbrushes.
- o paper, easel, card board
- o paper maché, clay, sand, water, wool, wire, glue, pipe cleaners, clothes pegs
- o masks, make up, finger puppets, string puppets
- o books and a quiet seating area for story reading and developing fantasy.
- o storage facilities for art materials
- o storage space for patients' work
- o exhibition facilities

People are storytellers by nature. Stories provide coherence and continuity to one's experience and play a central role in our communication with others.

Case (1987: 67) states, "It seems that play can flow into art, and art into play." Art therapy is a playful, fun way in which to reach the patient's inner self, and provides healing in a non-threatening way.

### Therapy through Projection

The purpose of this therapy type is to use progressive technology to give voice and visibility to the public. Krzysztof Wodiczko, a Polish artist, and his team designed a headset that integrated a camera and microphone, allowing the wearer to move while keeping the transmitted image in focus. The headset is then connected to two projectors and loudspeakers that transmit the wearer's testimonies live. This testimony can focus on a variety of topics, leading to healing. Healing needed from abuse, family disintegration, alcoholism and violence, etc is facilitated. By sharing the stories with other survivors, necessary sympathy can be received in order to move on and find closure (Whiton: CECUT).

By facilitating projections, the participants become the artist, monument animators and truth-tellers. Through grand scale audio-video projects in public spaces, national monuments and architectural façades are turned into 'bodies' as Wodiczko, or the Healing Activities Centre, collaborates with communities to get people to "break the code of silence, to open up and to speak about what's unspeakable". Through the projection, building façades are turned into canvases which display human art. The viewer is confronted with the topic, allowing the viewer to become directly involved in the lives of the inhabitants of the city. Via this architectural form, a bridge is built that links people with other people and touches the community.

Elements needed for therapy through projection to take place include: (Figure 74)

- o headset designed according to Wodiczko's specifications
- o two projectors (one display on the inside, one on the outside)
- o loudspeakers
- o screens against which can be projected
- o gathering space for the participants

- o seating space for the viewers

### Music therapy

Rhythm is essential for speech and sound exercises, and also influences a person's heartbeat, pulse and breathing rate. Music therapy is effective because it is a non-threatening way of communication (American Music Therapy Association definition: 2005). When music is applied, experiencing a positive change in attitude enhances the patients' lives. Music therapy is an allied health profession where music is used to encourage development in social or emotional, cognitive or learning, and perceptual-motor areas. It is particularly helpful with autistic children (National Association for Music Therapy). Music can be played to the patients or the patients themselves can play musical instruments, such as drums. The sound of water is a form of music that relaxes and calms the listeners. Water and music can also be combined.

Music therapy includes the combination of vocal music activities and instruments as well, but goes even further to include the singing of birds or other animal noises (see *Sensory Integration: Auditory Sense*).

Dancing also forms a part of music therapy. Music, especially music with a strong beat, helps the patients to understand rhythm.

Different types of music display different responses or behaviours of patients.

Elements necessary to facilitate music therapy include: (Figure 74)

- o certain structures for specific experiences e.g. sound vibration
- o song games
- o paper to 'draw' music
- o a sound board

- o percussion instruments e.g. Traditional African instruments (drums)
- o acoustic tiles to make the sound tactile
- o musical instruments
- o stage for performing dances, songs etc.
- o practice rooms for groups and individuals, which are easily transformed to create new, desirable spaces.

### Aromatherapy

The word 'aroma' is derived from Greek and means 'spice'. It is a curative treatment by means of fragrance, and is the art and practice of treating ailments using forms of scent.

Aromatherapy has its origin in 4 500 BC, when the Chinese first discovered plants with medicinal properties. In 1 000 AD, the Arabians successfully distilled rose essence, and used it for perfume, baths and massages. The medicinal properties of the oils were first highlighted in Western Civilisation in the 14th and 15th century when a plague broke out in Europe and Asia (Chandy 2004: *Titillating the Senses*).

By inhalation of the scent, receptors in the nose convert the smell into electric impulses and transmit these impulses to the limbic system of the brain, where the moods and emotions are affected and mental alertness and concentration improved. By massaging the oils into the skin, small oil molecules get absorbed through the pores directly into the blood stream. Aromatherapy is used to release emotional and physical tension, relieve mental and physical fatigue, reduce tension and anxiety, and calm the nervous system. It can, on the contrary, also be used to activate/ stimulate the system.

Aromatherapy restores the harmony of body and mind by working with the sense of touch and smell.

Objects needed in order to make aromatherapy treatment possible: (Figure 74)

- o essential oils
- o vaporizers
- o bulb rings
- o incense
- o candles

Suitable aromas, only one aroma per room, will be provided throughout the building. These aromas will be generated from bulb rings around globes or through room vaporisation.

Certain moods or atmospheres can also be additionally created, by combining aromatherapy with specific lighting and music.

It is also planned to plant fragrant plants in the courtyard. (see *Therapeutic Garden*).

#### Animal-Assisted Therapy (AAT)

AAT is a goal-directed intervention in which an animal is an integral part of the treatment process. ([www.deltasociety.org](http://www.deltasociety.org)) A change in the patient is attained through his/her interaction with an animal, through which a special emotional bond is formed. AAT aims to improve physical, social, emotional and/or cognitive functioning. Therapy can be on an individual basis or via group therapy (Standards of Practice for Animal-Assisted Activities and Therapy).

By feeling the animal the patient, possibly blind or abused, has a deeper sensory experience that evokes delight, education and motivation. The patient's own pets or animals from the zoo, such as horses, elephants, cats, dogs and rabbits, can be used during therapy sessions. A blind person's guide dog is always available to them and a strong interdependent relationship is formed.

Animal-assisted therapy is especially suitable for abused people, as animals are non-threatening to interact with and accept the person the way he/she is. Animals are non-judgemental and forgiving. People confide in them. The aim is for patients to overcome their fears, distrust and loneliness and to improve their self-esteem. The physical contact with animals helps healing physically or sexually abused patients. A psychological benefit has also been identified, where heart rate and blood pressure were lowered during therapy. Even watching fish swim has a calming effect on the viewer.

Furthermore, animal-assisted therapy improves fine motor skills, sequence events and coordination. The therapy evokes a sense of oneness with life and nature and a sense of spiritual fulfilment sustaining life.

Animal-assisted therapy is a health/human service profession carried out by occupational therapists, teachers, nurses, social workers, speech therapists, etc.

Necessities for animal-assisted therapy include: (Figure 74)

- o leashes, brushes, tables
- o drinking water
- o cubicles for individual animals
- o outside area for when the animal's nature calls
- o storage space
- o animal-washing facilities
- o food storage
- o informal gathering space



### Therapeutic Garden

Also called 'healing gardens', therapeutic gardens serve as a remedy for positive outcome. By viewing nature, the amount of time it takes and the amount of pain medication a patient uses to recover may be reduced (ASLA Therapeutic Garden Design. V3, Nr. 1: Spring 2002). A therapeutic garden is at its best when it tells stories or enables stories to be told.

A therapeutic garden is especially helpful to the depressed, frustrated, angry, abused and troubled patients. By planting their own plants, patients experience a sign of life. They watch, with excitement, the growth of life, through which the patients gain a sense of purpose, and learn to nurture life and create beauty. Important lessons about protecting and persevering life are learnt and can be related to their own lives. A sense of responsibility, attention to detail, the following of directions and concentration can be learnt on an individual basis or via group work.

April Brunning (2002), a landscape designer states, "The exposure to nature can be instrumental in healing the weakened mind, body and soul. Through mentally, physically and spiritually damaged patients, I witnessed the powerful healings of our natural environment."

By viewing a garden or working in it, stress is reduced, satisfaction improved, blood pressure lowered and a generally better health outcome is ensured. (<http://www.alzinfo.org>)

The garden can be shaped through the inclusion of, for example, a fishpond, vegetables that bear fruit, flowering plants, etc. Elements of a Zen garden can be incorporated, as the sand and its brushed lines have an effect on the human psyche. Herbs, often resulting in a fragrant garden, can also be included. These

herbs can be eaten or made into tea, stimulating the sense of taste. The fragrance of the herbs will also link up with the inhaled aromatherapy experiences. (Figure 61)

### Bibliotherapy

Bibliotherapy can be defined as the use of books to help people solve problems. It is a technique for structuring interaction between a facilitator and a participant based on mutual sharing of literature.

The idea of healing through books can be traced back to the days of the first libraries in Greece. The purpose behind bibliotherapy is firstly, to rebuild thought structures. Secondly, the aim is to refocus the emotions and thirdly, it aims to redirect the will (Aiex 1993: 2).

Therapy can take place on an individual basis or through group work, depending on the situation. After having read a specific book, follow-up discussion times will be offered, where questions will lead the patient from literal recall of information through interpretation, application, analysis, synthesis, and evaluation of that information. Evaluation will lead the participants toward closure, where the practitioner's evaluation, together with the individual's self-evaluation leads to a conclusion.

Group discussions can be a powerful vehicle for helping to heal emotional problems. The group approach enhances the child as a whole and allows members to share common experiences, thus lessening anxieties. Group discussions can create a feeling of belonging and can also provide security for individuals who might feel uncomfortable in situations where they are singled out for special attention. Working in a group may lead to an individual developing a different perspective and a new understanding of the problems of others.

Educators have begun to recognise the increasingly critical need for delivering literacy instructions to at-risk children, such as those dealing with divorce, peer group pressure, alcohol and drug abuse, and the homeless and their families.

Bibliotherapy, together with the group discussions, will be offered in the library, where reading material will be made available. Space for individual reading is on hand, while this space can be easily transformed for group work. In addition, individual reading space or group work can flow out into the courtyard. (Figure 61)

### 3.2 SENSORY INTERATION (SI)

Due to a neurodevelopment problem, children or adults may have trouble functioning in daily life and interacting successfully with the world around them. A dysfunction in sensory integration may be a significant contributor to this behaviour. Most children are out of sync some of the time. Others, however, are out of sync most of the time (Kranowitz 2003: 2).

SI is the normal neurological process of organising sensations for use in everyday life. Typically, our brain receives sensory information from our bodies and surroundings, interprets these messages, and organises our purposeful responses. Most people can name our five senses: vision, hearing, smell, taste and touch (Kranowitz 2003: 3). In fact, we have several other vital senses. According to the research of A. Jean Ayres, O.T.R., who formulated the theory of SI, the essential sensory systems include:

- The tactile sense, where the skin surface receives information regarding texture, temperature, shape and size of objects. It

informs us whether we actively touch something or are passively being touched.

- The vestibular sense provides information through the inner ear regarding gravity and space, balance and movement, and our head and body position in relation to the surface of the earth.
- The proprioceptive sense gives information through our joints, muscles and ligaments about where our body parts are and what they are doing.

Dysfunction in sensory integration (DSI) occurs when the brain inefficiently processes sensory messages coming from a person's own body and his / her environment. The person has difficulty responding in an adaptive way to everyday sensations that others hardly notice or simply take in their stride. Generally, the symptoms of DSI are unusual response to tactile, vestibular and proprioceptive sensations (Kranowitz 2003: 4).

Children with DSI often do not feel safe. When they attempt to meet ordinary challenges, their responses may be inefficient and clumsy (Kranowitz 2003: 7). For a child, purposeful activities include swinging, climbing, jumping, buttoning, drawing and writing. Children need to be moving and playing outdoors, where they can inhale fresh air. Fresh air encourages healing and endorphins to protect against viruses and other bugs. Many children's activities are best performed on the grass.

A child responds favourably to SI treatment because it helps him/her to learn to succeed — and he/she loves it! (Kranowitz 2003: 8).

Each sense will now be explained. An activity or activities to stimulate the specific sense will follow thereafter. The activities are aimed at the age group of three years and older. A therapist chooses which of the activities would be suitable for the therapy goal. In so doing, the exact location of activities may vary.

#### The Tactile Sense (Touch)

The tactile system plays a major role in determining physical, mental and emotional human behaviour. From infancy onwards everyone needs steady tactile stimulation to keep organised, to continue functioning and to stay healthy.

We obtain tactile information through sensory receiving cells called receptors in our skin. Touch sensations of pressure, vibration, movement, temperature, itch and pain activate tactile receptors. The ability to process tactile sensations effectively is very important, not only for visual perception, motor planning and body awareness, but also for academic learning, emotional security and social skills (Witthaus: 3).

#### *Feeling shapes*

Necessities: Clean dry sand, little toys or objects, tray or sand pit.

Objects need to be hidden in and under the sand. The child then needs to feel in between the sand to find the objects and the identify them by feeling the shapes. This game can be done blind-folded and can work on a score system. (Figure 29)

Other activities include dramatic dress-up or play dough (Kranowitz 2003: 30). This activity would take place in the sand pit along the edge of the courtyard.



Figure 29: Feeling Shapes Activity

#### The Vestibular Sense (Balance and Movement)

The vestibular system is the unifying system, giving us a sense of where we stand in the world. Movement and gravity stimulate the special receptors in the little vestibule of the inner ear. The vestibular system takes in messages about balance and movement from the neck, eyes and body, and sends the messages to the central nervous system for processing. It then helps to generate muscle tone that allows us to move smoothly and efficiently (Kranowitz: 60). Our vestibular sense is the most primal and powerful sense and thus, it is the one we must address with the highest caution (Kranowitz 2003: 62).

#### *T-stool*

Necessities: Two sections of wood, one for a seat and the other for the leg, and two long wood screws. (Figure 30)

The child or adult sits on the t-stool while listening to a story or some music. When listening to the music, rhythmic and musical games can be played in order to acquire the sense of balance. The activity also improves body awareness and postural stability.

A trampoline or any other balancing activity can also be used (Kranowitz 2003: 63). This activity could be incorporated into music therapy or could be done as a fun activity while attending art therapy.



Figure 30: T-Stool Activity

### The Proprioceptive Sense (Body Position)

Proprioception refers to sensory information telling us about the position, force, direction and movement of our own body parts. It helps to integrate tactile and vestibular sensations. Receptors for the proprioceptive sense are in the muscles, joints, ligaments, tendons and connective tissue. Proprioception, the 'position sense', sends messages about whether the muscles are stretching or contracting, and how the joints are bending and straightening.

Proprioception is the great organiser of all sensations (Kranowitz 2003: 74).

### *Crash pad*

Necessities: Crash pad, large dog bed or mattress. (Figure 31)

The crash pad needs to be placed in the middle of the floor in an open space. The patient can leap from a higher object onto the crash pad, he/she can sprawl and roll in it, or they can nap on it. The jolt of landing on a crash pad provides deep pressure to muscles and joints, which is strong in proprioceptive input. Vestibular stimulation takes place when leaping towards and rolling on the crash pad. Rubbing against the fabric also provides tactile sensation (Kranowitz: 76).

Occupational therapy makes great use of art therapy while carrying out activities. The crash pad activity, for example, would be integrated into the art therapy room or could be performed outside on the lawn in the courtyard.



Figure 31: Crash Pad Activity

### The Visual Sense (Seeing)

Vision is a complex process that enables us to identify sights, to anticipate what is coming at us and to prepare for a response. Vision should not be confused with eyesight (Kranowitz 2003: 89).

Eyesight contributes to our basic visual skills, called oculomotor (eye movement/motor) skills. As the child matures and integrates information from the other senses, especially the vestibular sense, more refined visual-spatial processing skills evolve.

### *Flying beanbag*

Necessities: Two clean plastic bottles, with a section cut out of the bottles to form a scoop, scissors, beanbags. (Figure 32)

Toss a beanbag back and forth with the scoops. This game can be played outdoors or in a spacious room. As a variation, the non-dominant hand can be used to wield the scoop. A variety of balls can also be tossed back and forth. Playing the game reinforces eye-hand-foot-body coordination, visual tracking and depth perception. It further more strengthens balance, proprioception,

force, gross motor control, motor planning and midline crossing. The flying beanbag activity would be perfect for an outside activity. As the therapy rooms are large and spacious, the activity can also be carried out inside.



Figure 32: Flying Beanbag Activity

#### The Auditory Sense (Hearing)

Audition, or hearing, is the ability to receive sounds. We are born with this basic skill. We cannot learn how to do it; either we hear or we don't. The ability to hear does not guarantee, however, that we understand sounds. We are not born with the skill of comprehension; we acquire it as we integrate vestibular sensations. Gradually, as we interact purposefully with our environment, we learn to interpret what we hear and to develop sophisticated auditory processing skills (Kranowitz 2003: 100). The calls and songs of wild birds offer a symphony of sound. This activity may be particularly attractive to children with poor vision and superior hearing.

#### *Bird calls*

Necessities: Paper, pencil, and a list of birds indigenous to Pretoria and their distinctive calls.

Go outside together and listen for bird calls. On the list check the birds you hear. Also, make a note of other birds and their distinct sounds and environ-

mental sounds. Listening for specific sounds improves auditory discrimination and figure-ground. Matching sounds with sights integrates auditory and visual sensations (Kranowitz: 178).

The zoo, adjacent to the centre, contains many birds. The activity could, therefore, be planned as a tour, stretching into the zoo. (Figure 33)



Figure 33: Bird Calls Activity

#### The Olfactory Sense (Smelling)

Smell isn't what it used to be. Millions of years ago, creatures depended heavily on smell to survive. Today, smell plays an important part in establishing and reviving memories. When we smell something, the olfactory stimulus links directly to an ancient structure in our brain, called the limbic system. Our response to familiar smells is immediate (Kranowitz: 185).

#### The Gustatory Sense (Tasting)

Like all the senses, taste helps us to survive and provides us with essential information, such as bitter, salty, sweet and sour flavours. We spit out what our gustatory sense informs us may be harmful.

Smell and taste are intertwined. In fact, about 75% of taste perceptions depend on an efficient sense of smell. DSI may affect smell and taste. Undersensitivity or oversensitivity to smells and tastes often interferes with a child's eating

habits and nutrition (Kranowitz: 185).

### *Smell and tell*

Necessities: Several strong scent producers (essential oils), open and closable containers. (Figure 34)

Generally alerting scents such as basil, burnt candlewick, chocolate, coffee, dirt, garlic, lemon, orange, mint or peppermint, oregano, pencil shavings, rubber, vinegar.

Generally calming scents such as aftershave, almond extract, apple, banana, butter, chamomile, cinnamon, crayons, hand lotion, lavender, lily of the valley, pine needles, soap, vanilla extract (Kranowitz: 187).

Pick up a pinch of something from the tray and offer it to the client. This activity is not are place specific. Therefore, this activity could be carried out in any of the therapy rooms, the main kitchen, or the courtyard, and could become integral to aromatherapy.



Figure 34: Taste and Tell Activity

## 3.3 COLOUR AND HUMAN RESPONSE

### *A historical background*

Early man had a wonderful sense of colour. This can be seen throughout the world, already having started in the ancient times of cave drawings. In Birren's book, the assumption was made, that early man somehow needed beauty in his life and was inspired to surround himself with charming colour in all art forms – architecture, painting, decoration, sculpture, textile, ceramics, jewellery and cosmetics.

All civilisations have worshipped the sun, and from the sun came light and colour. Early man's main colours were red, gold, yellow, green, purple, white and black (Birren 1978: 1).

Colour has a different meaning for many different culture groups. For the purpose of this dissertation, a general meaning of colour is taken.

### *The biological response of humans to (coloured) light*

Dr Thomas R.C. Sisson wrote, "Light does not merely lend illumination to human existence, but exerts a powerful physical force. This affects many compounds within the body, some metabolic processes, the life and generation of cells – even the rhythms of life." Visible light penetrates into the animal and human muscle and tissue. Light also reaches the temporal lobes and the hypothalamus of human beings. The temporal lobe and the hypothalamus are responsible for the limbic system (emotions, motivation, memory and attention) and movement, co-ordination and balance, respectively. Both respond naturally in a favourable or an unfavourable ways, depending on the need. It is important to have the right rhythm between the amount of light and dark (Birren 1978: 21). Too much of either one can be harmful to bodily functions.

According to Birren, most artificial environments today expose people to unbalanced light sources. Incandescent light almost completely lacks ultraviolet wavelengths. The glass tubes of most fluorescent light fixtures absorb and screen out ultraviolet. Some mercury sources are rich in ultraviolet but lack red and infrared frequencies. M. Luckiesh points out that yellow-coloured lights have the widest product selection. Yellow light is without deviation and is psychologically pleasing. In a tungsten lamp, where blue and violet are filtered out, the visual perception still remains relatively constant. It therefore follows that, as far as visual perception is concerned, yellow has definitive advantages (Birren 1978: 35)

C. E. Ferree and Gertrude Rand favour yellow the most, followed by orange-yellow, yellow-green and green. Blue makes it very difficult for the eye to focus and results in objects appearing blurred and being surrounded by halos. Red illumination has been widely used for instrument panels in airplanes, and for control rooms on ships and submarines.

Natural light, i.e. daylight, changes from morning to noon to evening, from pink and orange to yellow, white, and blue and then back again to the warm hues of sunset. A. A. Kruithof noted that at low levels of illumination the world appears 'normal' in a warm tint of light. As illumination increases in intensity, cooler light is needed to give normal appearance. Candlelight, real or imitated, is famous for its cosy, friendly, and intimate atmosphere.

The majority, when placed in a bright, harmonious setting, will have their spirits lifted. Felix Deutsch, a physician, did creditable research on the emotional effects of coloured light.

He summarised his colour studies as follows:

Colour and light stir a reflex action upon the vascular system, even if only through feelings and emotions. The emotional excitements, which are recognised through changes in blood pressure, pulse-frequency and rhythm, are evoked by association. For example, green may recall nature etc. These associations lead to deeper lying memories, which explain the affective emphasis of the attitude towards coloured light. Colour in itself, inclusive of all colours, is psychologically therapeutic. "The psychic process which is brought into play here is easily stated: the coloured light changes the environment. Through the changed appearance of the environment the individual is lifted out of reality. He is on the road to recovery, being helped along by his own mental and emotional processes." (Birren 1978: 46-7).

#### The Emotional Response to Colour

Most have already noted how moods change from summer to winter, from sunny weather to rainy weather, from ugliness to beauty. Reactions to colour are equally depressing or inspiring.

Colour is not a cure, but it serves a purpose in helping to inspire an agreeable mood in human beings.

Visual comfort requires constant change and variety. People require varying, cycling stimuli to remain sensitive and alert to their environments.

"Where there's no change, a state of 'sensory deprivation' occurs; the capacity of adults to concentrate deteriorates, attention fluctuates and lapses, and normal perception fades. In infants who have not developed a full understanding of their environment, the whole personality may be affected, and readjustment to normal environment may be difficult," according to M. D. Vernon (Birren 1978: 97).

Vernon explains how to apply colour:

*Lighting:* Artificial light should preferably be neutral and slightly warm in quality. It would be even better if a balanced amount of long wave UV could be added (Birren 1978: 105).

*Brightness:* Except for ceilings, white or off-white should not be used on walls where groups of people are assembled. High environmental brightness not only limits seeing, but also causes muscular fatigue. A continual exposure to high brightness may even damage the eye. Severe differences in brightness should also be avoided as the eye experiences tiring muscular adjustments (Birren 1978: 105).

*Colour reactions:* If colours such as red and orange tend to increase blood pressure, pulse rate, and other autonomic functions, the stimulation will be temporary, after which response may drop below normal. On the contrary, if blue tends to cause retardation, the later response will be above normal. From these observations, it is clear that a constant change in sequence is necessary to actively maintain physiological and psychological colour reactions. This constant change in sequence is exactly what will prevent sensory deprivation (Birren 1978: 105).

*End-wall treatments:* The use of a white or off-white colour has been very successful in treating ceilings, while light to medium-light colours should be used on floors and furnishings or equipment. Medium or medium-deep accent colours can be applied to end walls, excluding window walls. The warmer colours may be used on northern or eastern exposures, rest and recreation areas and food service. Cooler colours should be used in workspaces. By varying the treatment of the human eye and a person's mood, the joy of colour will keep spirits high – with no danger of visual, physical, mental or emotional strain

(Birren 1978: 107).

*Colour and safety:* To keep people alert in areas where they may be exposed to dangers, colour has an extensive and highly practical use. Red is used for all equipment related to fire protection, for example fire extinguishers. Acute hazards, such as grinding wheels, are marked with orange. Yellow, or yellow and black striped bands are used to mark stumbling or falling hazards and road equipment. Blue has special application in signs or symbols to mark equipment that should not be operated without permission, for example boilers. Green is the colour of medicine and is used to identify first-aid devices such as medicine and first aid cabinets. Purple and yellow in a propeller symbol relate to extremely hazardous materials and devices associated with nuclear radiation, and black and white are reserved for mere instructional purposes, such as signs (Birren 1978:107).

#### The meaning of colour and its application


From the above information it can be ascertained, that all rooms should contain as much natural light as possible. Building walls, which are at present very closed up, should be opened up where possible in order to fill the interior with light. The colours and the quality of natural light will have an insurmountable effect on emotion, already leading to healing. Where natural lighting is limited or impossible, a yellow-coloured bulb should be inserted to ensure comfortable living. Furthermore, outside activities should be promoted, where possible.

Regarding colours, each room that houses a different function should possess its own colour in order to create its own suitable mood (Figure 75). When mentioning the colour of the room, it must be clear that this colour should be applied as accent colour. If the colour is overused, the space will be too dominant and will make people feel uncomfortable. All other rooms, which do not have a






theme colour, should be kept neutral, as described in *brightness* and *end-wall treatment* above.

 The two most commonly preferred colours, according to Birren, are red and blue. They usually relate to people with extroverted or introverted tendencies (Birren 1978: 120).

Red is the colour of fire and blood, and is, therefore, associated with energy, war, danger, strength, power and determination, as well as passion, desire and love. Red, as previously mentioned, stimulates metabolism, increases respiration rate, perspiration and appetite, and raises blood pressure. Red tends to promote images and text, making objects appear larger and closer. As an appetite stimulant, red is useful for promoting products associated with energy, such as drinks, cars, sports and games. Light red represents joy, sexuality, passion, sensitivity and love. Dark red on the other hand, stands for will power, rage, anger, leadership and courage ([www.colour-wheel-pro.com/colour-meaning.html](http://www.colour-wheel-pro.com/colour-meaning.html)).


Red, as it is an energetic colour that increases appetite, can be used in the café. As the café lies on the cold and dark southern side of the building, it is crucial to use a strong, warm colour. Furthermore, the warm colour will encourage a chatty atmosphere.

 Brown becomes too low key when used broadly without texture or another colour to enhance it. It is useful in promoting food and outdoor products for work and play. Brown implies friendships, earth, home, outdoors, inexpensive, comfort, tranquillity, masculine, nurturing, sensuality and generosity. A reddish-brown symbolises harvest and autumn, and beige and tans display sophistication and neatness. Copper simulates passion, money goals, profes-

sional growth, business productivity and career moves. Lastly, coffee browns imply sophistication, richness, robustness and flamboyance.

Birren believes that more people dislike brown than like it. Brown is a colour of the earth and is preferred by people with down-to-earth, uncomplicated qualities. They are conservative and have a sense of duty and responsibility.


Brown-like colours will be used in the basement, where animal therapy is to take place. This space can be highlighted with green, resulting in an earthy environment, where the animals may also feel at ease. Brown shades are also practical for this space, as a great flow of traffic in and out, with or without animals, may easily leave the place dirty.

 Orange combines the energy of red and the happiness of yellow. Although orange is perceived as a warm colour, it is not as aggressive as red. It increases oxygen supply to the brain, encourages appetite, produces an invigorating effect and stimulates mental activity. It is associated with joy, sunshine and the tropics. Orange represents enthusiasm, fascination, happiness, creativity, determination, attraction, success, encouragement and stimulation. It is the colour of autumn and harvest. However, dark orange can mean deceit and mistrust ([www.colour-wheel-pro.com/colour-meaning.html](http://www.colour-wheel-pro.com/colour-meaning.html)).

Orange is the social colour, cheerful, luminous and warm. It typifies people of desirable good cheer and with the unique ability to get along with anyone, rich or poor, brilliant or slow, high or low. Orange personalities are friendly, have a ready smile and a quick wit, and do not like to be left alone.


The dining hall will be filled with orange. Not only does orange increase appetite, but also it is a social and cheerful colour. To create and maintain a

harmonious environment amongst inhabitants is essential in order to strive for peace.

 Birren associates turquoise with Freud's narcissism and self-love. Turquoise types are mostly sophisticated, discriminating, have excellent taste, are well-dressed, charmingly egocentric, sensitive and refined. Both, those that like and dislike turquoise have a trait in common: both are sure to be self-centred.

Turquoise is equally popular with men and women. The colour is calming, emotionally healing, refreshing, sophisticated and stands for protection. When mixed with pink and lavenders, a feminine look is created. Light turquoise is feminine, while teal radiates sophistication ([www.sibagraphics.com](http://www.sibagraphics.com)).


Calming, emotionally healing and protective are attributes well suited to music therapy. Turquoise is also equally popular with men and woman, thereby inviting everyone. A flowing, tranquil mood will aid creativity in the creation of music.

 Yellow stimulates mental activity, generates muscle energy and attracts attention – it is the colour most visible to the human eye. It has been shown that students who study in yellow rooms do better in exams. Cheerful yellow can be used to promote food, especially when combined with other fruit and vegetable tones. However, if overused, yellow can be disturbing and can promote anxiety. It is believed that babies cry more in yellow rooms. Yellow imitates the sun, intelligence, social energy, cooperation, optimism, honour, loyalty, betrayal, imagination, summer, hope and enlightenment.

Yellow types enjoy innovation, originality and wisdom. This type tends to be

introspective, discriminating and serious-minded about the world and the talented people in it.


The wet art room is to be located on the southern and eastern side of the building. Therefore, it might tend to feel a bit dark in this room. To counteract this and to add warmth and light, this room can use yellow as its dominant colour. In addition, yellow will attract attention from the street's side due to it being the colour which is most visible to the human eye. The street elevation will radiate a warm, welcoming atmosphere.

 Green lowers blood pressure, relaxes the nervous system, calms and soothes the mind, stimulates creativity, and is an appetite suppressant. Green is the most restful colour to the eye and can improve vision. Green is popular in most cultures. In addition, green stands for physical healing, abundance, fertility, hope, renewal, health, youth, jealousy, inexperience, growth, nurturing, calm, joy, love, balance and friendliness. Dark green resembles money, ambition, greed, jealousy, heaviness and prestige, and promotes concentration. Olive green is a reminder of peace.

Green is symbolic of nature, balance and normality. Those who prefer green are mostly socially well adjusted, civilised and conventional. They are suburban people, while orange types are urban. A dislike of green is only encountered occasionally and may indicate a degree of mental disturbance (Birren 1978: 122).


The proposed library will be facing the western sun. Green is an optimal colour to use here as it relaxes the nervous system and stimulates creativity. The atmosphere in a library should be peaceful, yet lively. Those who work there should feel that they are being efficient but they should not feel alone.



 Blue is the colour of conservatism, accomplishment, devotion, deliberation and introspection. It therefore goes with people who succeed through application, know how to earn money, make the right connections in life and seldom do anything impulsive. A dislike for blue may signal guilt or a sense of failure (Birren 1978: 123-4).

Some believe blue slows the metabolism and suppresses the appetite. As it does not require the eye to focus, images and objects recede to the background. If overused, blue creates a cold feeling. Although also popular with women, blue is the predominant favourite colour of men. Blue is the favourite colour of more than half of the world's population and it is the colour least disliked by most cultures. Combinations of light and dark blues can create a feeling of trust. Pale blue has a delicate, calming effect, and resembles health, healing, tranquillity, understanding and softness. As opposed to emotionally warm colours, blue is linked to consciousness and intellect. Blue is used to suggest precision when promoting high-tech products ([www.colour-wheel-pro.com/colour-meaning.html](http://www.colour-wheel-pro.com/colour-meaning.html)).

Blue is the most suitable colour for the conference/workshop room as it slows the metabolism and is the favourite colour of half the world's population. Blue is the colour of accomplishment and devotion, attributes which are suitable to all the activities taking place inside this space. Trust is an important feeling to evoke, and, as the room faces the western sun, blue will help balance out the hot summer sun.


 Purple combines the stability of blue and the energy of red. Almost 75% of pre-adolescent children prefer purple to all other colours, making purple an effective colour in promoting children's products. Purple and violet are subtle colours and are, on average, seen as elegant. Excessive exposure

to purple, however, may cause people to become grim, withdrawn and ill at ease with their surrounding. Artists and firm culture lovers may like purple. Those who choose purple as their favourite colour are usually sensitive and have above-average taste.

Purple may also be a sign of influence, spiritual power, self-assurance, dignity, royalty, luxury and fame.

Lavender implies sexual indecision, malleability, romance, nostalgia and femininity. Dark purple expresses sadness, frustration, royalty and richness. Violet represents meditation, creativity, concentration, beauty, inspiration, artistry, music, love and responsibility ([www.sibagraphics.com](http://www.sibagraphics.com)).

As purple is the colour most chosen by artists, the dry art room's theme colour will be purple. Art therapy will mostly be offered to children, therefore purple is appropriate as it is the favourite colour of 75% of children. As previously mentioned, purple enhances creativity, concentration and inspiration.

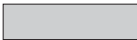
 White is associated with light, goodness, innocence, purity and virginity. It is considered to be the colour of perfection. White also means safety and cleanliness. It usually has the positive connotation of a successful beginning.

In advertising, white is associated with coolness and cleanliness as it is the colour of snow. It is also associated with hospitals, doctors and sterility. White rooms can be uncomfortable, with a stark atmosphere, but white is useful as a background colour as it highlights the other colours. The eye perceives white as a brilliant colour

([www.colour-wheel-pro.com/colour-meaning.html](http://www.colour-wheel-pro.com/colour-meaning.html)).

White will not be used as a main room colour, but will be used as an effective

colour for highlighting, branding, crockery, etc.

 Silver can be used, together with other colours, to create a high-tech look. To promote a feeling of control and power, silver can be combined with gold and white. Silver is a reflector and, therefore, is very eye catching. It is and associated with life-giving water as well.

Silver is glamorous, stands for modernity, the distinguished, the industrial, dreams, female power and sleekness ([www.sibagraphics.com](http://www.sibagraphics.com)).

Silver is appropriate for the kitchen, which is situated in the north. The life-giving association of silver suits the kitchen. A sophisticated, sleek look will further complement the hygiene of a kitchen.

Due to the carefully chosen colours, someone walking through the rooms will be automatically affected in a therapeutic manner. Thus, therapy already begins even before an actual therapy session starts. By applying the appropriate colour for each therapy room, each specific therapy, for example art therapy, will be further enhanced.



# 4

## PRECEDENTS

4.1 Paimo Sanatorium

4.2 Castelveccio Museum

4.3 Krzysztof Wodiczko

4.4 Japanese Rock Garden

4.5 Africa Centre for Health

4.6 Pietermaritzburg City Hall

4.7 KZNSA Gallery

4.8 Margaret Roberts

## 4.1 PAIMIO SANATORIUM

— *Healing: Building*

Location: Paimio, Finland

Architect: Alvar Aalto

Source: [www.wikipedia.co.za](http://www.wikipedia.co.za)

The Paimio Sanatorium, a former tuberculosis sanatorium, was built in 1929. The building is widely regarded as one of his most important early designs and made him an internationally recognised architect. Aalto's starting point for the design of the sanatorium was to make the building itself a contributor to the healing process ([www.wikipedia.co.za](http://www.wikipedia.co.za)).

Aalto always paid special attention to the human side of designs. He designed lighting, heating, furniture and even new noiseless taps for the sanatorium. Aalto liked to call the building a “medical instrument”. For instance, particular attention was paid to the design of the patient bedrooms: these generally held two patients, each with his/her own cupboard and washbasin. He designed special non-splash basins, so that the patient would not disturb the other patient while washing. Patients spend many hours lying down, therefore Aalto placed the lamps in the room out of the patient's line of vision and painted the ceiling a relaxing dark green so as to avoid glare (Figure 35). The site of the building was considered a healthy location (Göran Schildt, Alvar Aalto. *The Early Years*. Rizzoli, New York, 1984).

The cautious approach and care for the building's users is admirable. “This architect's task is to restore a correct order of values...it is still the architect's duty to attempt to humanise the age of machines,” comments Aalto (Alvar

Aalto: 1955).

Special care will be taken in carrying the theme of ‘Healing Activities’ through to every detail of the building. In doing so, the building itself will also contribute to and stimulate healing. Colour has a certain psychological effect on the viewer and will be further investigated for the purpose of the project.



Figure 35: Green painted ceiling to prevent glare



Figure 36: Walkway along perimeter of building



Figure 37: Auditorium interior



Figure 38: Colour treatment of staircase



Figure 39: Detail of walls revealing different time layers through different use of materials



Figure 40: The position of the Equestrian Statue of Congrande



Figure 41: Old and new time layers

## 4.2 CASTELVECCIO

— *Heritage: Time Layers*

Location: Verona, Italy  
Architect: Carlo Scarpa  
Source: The Complete Works

Scarpa tackled the renovation of the Castelvecchio Museum as a radical restoration of the castle right from the start. The project developed into an exemplary lesson in restoration of the city's urban fabric.

As the building had suffered from mistreatment, Scarpa explored all age layers prior to restoration. He undertook the problem of enabling ancient and modern to coexist. By keeping the old and adding the new, time layers are joined, filling in the gap without concealing the wounds of time, suturing the links and revealing the joints (Figure 39). Scarpa implements renewal by restoring unity and life. By also revealing the materials that make up its corporeal essence, medieval Verona comes to life in the restoration through Scarpa's utterly creative and yet consistent genuinely modern training. The extreme freedom with which he transplants within the castle walls works in harmony with traditional Veronese materials. The solution adopted provides a fortunate and contextual solution to a complex of problems of environmental- and museum restoration. It concludes in a quiet, unprecedented architectural intervention, in which the modern concept of space becomes the dominant and unifying act.

Careful analysis and understanding of the building's layers is essential before any intervention can be made. Different time layers have been added to the old ZAR museum over a period of 108 years, which need to be evaluated and dealt with accordingly. The intervention should be via a style and materials that resemble South African culture, whereby the old and the new time layers are celebrated through a building which already survived for so many years.

### 4.3 TIJUANA PROJECT

—*Technology: Invisible Layer*

Location: flexible

Artist: Krzysztof Wodiczko

Source: <http://web.mit.edu/idg/cecut.html>

Wodiczko was the director of the Centre for Advanced Visual Studies from 1995 to 1996. He received an MFA from the Academy of Fine Arts in Warsaw, Poland, in 1968 and was awarded the Hiroshima Prize for his contribution as an artist to world peace in 1998 (<http://web.mit.edu/idg/cecut.html>).

The artist creates art by projecting images (holographs) upon the monumental architecture found in large cities (Figure 47). His passing projection pieces only last a day or two, but they reclaim the city streets as places for discussion and heated debate. He has labelled his style of art as 'Interrogative Design'.

Through his projection, Wodiczko tries to make it as organic as possible, as the boundaries between architecture and projected body are blurred. The skin of the building and the skin of the person would be background and foreground at the same time. One of the objectives behind his project is to bring to light all of those voices and experiences, and to animate public space with them in a kind of inspiring and provocative way – maybe in a way of protest. The participants are becoming artists, monument animators and truth tellers (Wodiczko: interview).

For the Tijuana project, Wodiczko and his team designed a headset (Figure 46) which was worn by the participator, delivering a live testimony (Figure 42-45) (see *Therapy Types: Projection*).

Wodiczko's projection types sensitively turn the original building façade into something new. An extra layer is added to the building, which is visible, yet not tangible. The colonial, strict Old Museum building façade is humanised through the projection layer and brought down to a human scale, which everyone can relate to and take part in. Wodiczko's projection method is striking, yet sensitive. It is a great way to include society, to reach out so that all affected people can quietly find their own way into healing, emotionally, physically or socially.



Figure 42: Live projected face against the Omnimax Theatre building.



Figure 47: Holographs projected against an existing building



Figure 43: Projection effect reaching wide into the city



Figure 44: Participant in front of own projection



Figure 45: Live emotion visible, live conversation

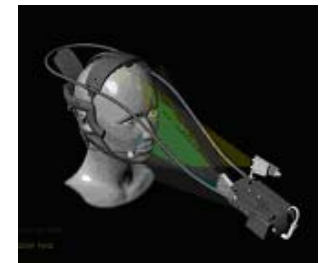


Figure 46: Head set model





Figure 48: Rock Garden of Zuiho-in Temple, Kyoto



Figure 49: Rock Garden of Ryogen-in, Kyoto

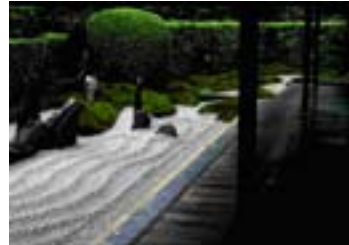


Figure 50: Zuiho-in Garden



Figure 51: Ryogen-in Garden

#### 4.4 JAPANESE ROCK GARDEN

— *Healing: Garden*

Location: Golden Gate Park, San Francisco

Architect: Unknown

Source: <http://www.educ.sfu.ca/kegan.Japangardenhome.html>

A Japanese rock garden, or Zen garden as it is known in the West, is an enclosed shallow sandbox containing sand, gravel, rocks, and occasionally grass or other natural elements. The main elements of the garden are rocks and sand, with the sea symbolised not by water, but by sand raked in patterns that suggest the rippling of water. (Figure 48, 49, 51) Plants are much less important (and sometimes nonexistent) in karesansui gardens. Zen gardens are often, but not always, meant to be viewed from a single, seated perspective, and the rocks are often associated with and named after various Chinese mountains.

Gardens typically have irregularly shaped rocks of varying sizes, some surrounded by moss, arranged in a bed of white gravel/sand (Figure 50). Large boulders are also included at shores of rock beds, enclosed by bordering shrubs (Figure 51) ([www.wikipedia.com](http://www.wikipedia.com)).

Not only will a Zen garden have an effect on the human psyche, but it will also stimulate the senses. Through interaction with the sand, the olfactory and visual senses, especially the tactile sense, will be triggered. The function of the sand refers back to sensory integration activities.



Figure 52: The karesansui garden in Ryōan-ji Temple, northwest Kiyoto, Japan.

## 4.5 AFRICA CENTRE FOR HEALTH

— *Humanitarian Design and Identity*

Location: Somkhele, KZN

Architect: East Coast Architects

Source: Design like you give a Damn, 2006

The Africa Centre for Health was built as a modern research facility focusing on reproductive and population issues. The objective was to unite African and international scientists in a rural setting to better understand the HIV/Aidsvirus and its effects.

The architects worked in close collaboration with the local talent, identifying artisans and craftspeople in the immediate vicinity of the planned centre. This guided many of the design decisions and resulted in a building that is both indigenous to the area and iconic (Figure 57). While sustainability is at the heart of the building, the real joy is in the spirit and openness of its space. A central courtyard situated under the landmark tower defines the interior, while its wood-slatted top captures prevailing winds which help to ventilate the building (Figure 53, 56). The entire building is filled with colour, bringing a sense of life and vitality (Architecture for Humanity 2006: 240).

The humanitarian approach to design – designing a building that addresses the inhabitant's needs – in my opinion, makes for a successfully operational building. It is important, to clothe the new intervention with its own local, or iconic style. The new needs to be distinguished from the old- the new having local, humanitarian character.

Holistic functioning of a building is vital for the smooth running of operations. This issue needs to be brought in to the Activities Centre.



Figure 53: Courtyard roof



Figure 54: Locally manufactured sun shades



Figure 55: Entrance



Figure 56: Water tanks in tower



Figure 57: Front view of the Africa Centre fore Health



Figure 58: Side view onto glass-enclosed portal



Figure 59: Close-up view of glass partition



Figure 60: Portal seen in wider context

## 4.6 PIETERMARITZBURG CITY HALL

— *Heritage: Time Layers*

Location: Pietermaritzburg, KZN

Architect: Unknown

Source: Pietermaritzburg City Hall Tourist Leaflet

The Pietermaritzburg City Hall is one of the city's best loved landmarks. It stands on the corner of Commercial Road and Church Street in Victorian splendour, as a constant reminder to visitors and residents alike of a long-gone era. It is regarded as the largest all-brick building in the Southern Hemisphere.

What is interesting is that the Pietermaritzburg City Hall was completed at the same time as the museum in Boom Street, yet the two have completely different styles. The original entrance of the city hall is similar to the museum in that it has an open-air foyer (Figure 60). A glass partitioning system was delicately added to the city hall's foyer in order to ensure better security and access control (Figure 58, 59). A similar system will be

needed for the entrance point at the museum, in which the original material is respected and left unharmed. An additional glass partition is needed to privatise the foyer from the street activities.

## 4.7 KZNSA GALLERY — *Combining Art and Coffee*

Location: Glenwood, Durban

Architect: Unknown

Source: [www.kznsagallery.co.za](http://www.kznsagallery.co.za) and visit

The Kwa-Zulu-Natal Society of Art Gallery is dedicated to promoting contemporary artists and art groups, and hosts and initiates exhibitions of local, national and international stature and relevance. A building extension was added onto steps in an existing park, incorporating an outdoor, light feeling into the inside of the building (Figure 65). Good natural lighting furthermore adds to the success of the building. The two-storey art gallery is combined with a curio shop and an indoor/outdoor restaurant (Figure 63, 64). Thus, the restaurant visitors enjoy the art exhibition, while the art lovers enjoy the light atmosphere of the restaurant (Figure 61, 62). Art and food can be enjoyed at the same place, at the same time.

The art exhibition of the proposed Activities Centre is situated between the foyer and café. The combination of art and coffee will make it a unique experience, where both may be enjoyed at the same time. Normally, more time is spent in a coffee shop in comparison to a walk through an art exhibition. By combining the two in the café, with the art exhibition spilling over into the café, art is further promoted. Promotions, for example Christmas artefacts, could be on display, intriguing the coffee drinker to possibly buy an artefact.



Figure 63: The interior exhibition space links to the outside



Figure 64: High volume space



Figure 65: The former park stairs now form part of the restaurant



Figure 61: Street view onto gallery



Figure 62: Link between inside and outside, coffee and art

## 4.8 MARGARET ROBERTS

### — *Healing: Herbs*

Location: De Wildt, Pretoria

Source: Discovery Magazine

The queen of herbs currently resides on a plot in De Wildt, where she is enjoying great success with her Herbal Centre. The centre offers herbal retail, a tea garden, a chapel, a labyrinth, a sand garden and much more. Roberts also interacts with the public, where the audience listens carefully to advice from South Africa's First Lady of healing herbs and fragrances.

"We are so clever," she says, "but our bodies are not coping with our own cleverness. We are doing terrible things to ourselves today. We have never had so much cancer, so many short fuses, and so much road rage. And have you noticed how few children smile these days?" "It is absolutely unbelievable, the things these plants contain." (Roberts 2007: 86)

The joys and wonders of herbs include, amongst others:

Sage: excellent for the throat, brain and kidneys. (Figure 66)

Peppermint: effective tonic for the whole system. (Figure 67)

Rosemary: has a restorative and energising powers. (Figure 68)

Ginger: helps build resistance when grated into food or made into tea (Figure 69)

Pennywort: nourishes skin and boosts circulation (Figure 70)

Lavender: Robert's personal favourite, has exquisite smell and miraculous, medicinal properties. (Figure 71)

(Jenni O'Grady: Discovery Magazine, 37-9).

By using medicinal herbs, either in the forms of tea, crème or food, the emotional and/or physical is stimulated to heal. Herbal remedies trigger the olfactory, gustatory and tactile senses and are a natural way to find harmony. The menu of the coffee shop in the centre will revolve around herbal teas, herbal light meals and herbal delicatessen.



Figure 66: Sage

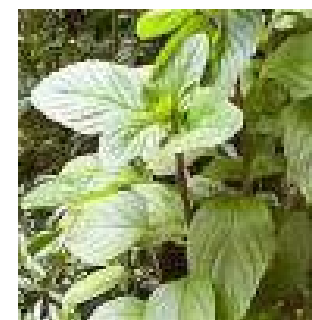


Figure 67: Peppermint



Figure 68: Rosemary



Figure 69: Ginger



Figure 70: Pennywort



Figure 71: Lavender

# 5

## DESIGN DISCOURSE

5.1 Building Evaluation

5.2 Design Development

## 5.1 BUILDING EVALUATION

The objective of this proposed Healing Activities Centre is to make it fit for harmonious human utilisation. The Centre will be formulated by the interaction between creativity, intellect and social stimulation. Important elements for a successful building interior are lighting, sufficient ventilation, comfortable interior temperatures and easy circulation.

Before design decisions can be made the building needs to be studied carefully in order to discover all time layers and evaluate the importance thereof. The building evaluation will consist of the evaluated old and the new response to it.

BUILDING EVALUATION		
Evaluation of Existing		Design Response
SITE	The site is located against a busy street (south façade). Deeper into the zoo's side the atmosphere however, quickly changes to being peaceful and quiet (Image 1).	The change in different atmospheres is perfect for the building's new function. The vibe inside the building will react to the existing activity levels.
FRONT FAÇADE	<p>The front, and street, façade is the only façade with spectacular detail. The superstructure is made up of four different building materials (Image 2).</p> <p>Silk stone makes up the foundation walls.</p> <p>Sandstone is used for the British coat of arms. (dieu et mon droit: God and my right), the four ledges stretching horizontally across the centre part, the Corinthian capital column, including the ERI (Edward Rex Imperior) initials.</p> <p>Plaster and brick eaves carry the horizontal lines of centre ledges to the building end. (above clerestory windows).</p> <p>Granite makes up the threshold to the foyer space.</p>	The front façade will be changed in order to better communicate with the street exterior. Details are discussed below under 'windows'. (Figure 90). Signage, street lights and proper pedestrian facilities will further enhance the appearance of the building. The tree, standing right in front of the building should be removed, as it obscures the building (Image 3).
EXISTING TIME LAYERS	Original Plan: this plan shows the southern, eastern and west wing as they can still be seen today. The northern wing is also part of the original plan, but is found with different properties. Its appearance, different to the others to the extent of feeling like a later addition to the original plan, would be due to it satisfying a different functional need. The current northern wing can be traced back to the original plan (Figure 94-97).	A new time layer will be added to the building, this time layer being the third one added to the building. The new time layer will speak of a completely different style, thus not making it difficult to separate the old from the new.

Evaluation of Existing (continued)		Design Response (continued)	
EXISTING TIME LAYERS	Originally, <i>Openplaats</i> , an open place, had been allocated to the end corners of the northern wing. These end blocks firstly have more modern windows, secondly have a different flooring type (parquet) than to the rest of the building, and thirdly, on the outside a line of foundation walls, jumping to a lower level is visible. It can thus be followed that the outer corners were meant to be outside, stepping down from the interior to the exterior.	The <i>Openplaats</i> areas, as enclosed later, will be kept. Wet services will equip the sides with a kitchen and ablution facilities on either side (Figure 93).	
	The last visible time layer is that of the partitions added to the inside, which are discussed under 'additions'.	This layer is not value adding to the building at all and will be removed for the purposes of the proposal.	
SPATIAL ADDITIONS	Courtyard: By having added the this wing extension, the original veranda was destroyed, leaving the courtyard bleak to the eastern side. The overall courtyard atmosphere is broken and lonely (Image 4).	This later addition (1960's), for the purpose of the newly proposed therapy centre, will be removed and the veranda will be reinstated. A veranda roof will be added again, but speaking of a different time layer. A play of light is created by the use of material, casting rhythmical shadows.	
		Furthermore, a stage is added in front of the music and art therapy rooms. As these therapy types overlap with dancing and acting respectively, shows will take place inside the courtyard (Figure 79e).	



Evaluation of Existing (continued)		Design Response (continued)
SPATIAL ADDITIONS (see Technical Drawings: Altered Plan)	<p>Western wing: These have been added to the original building to try "enhance" the museum exhibition space. These additions are present inside the southern half of the eastern wing. They consist of gypsum wall partitions and timber structures. Two doors have been completely blocked by the additions and can only be found on the outside of the building. Rooms are formed by the additions, are not functional, leaving the rest of the interior spaces awkward and confusing. The later added partitions are in no sense value adding.</p>	<p>Different levels, materials and textures run throughout the courtyard. A sensory experience is created as sand, pebbles, a water feature, lawn and scented plants are used (Figure 82, 83, 84). All textures have a therapeutic function. The bigger lawn area will be perfect for activities happening outside. Better sensory stimulation results from having the activities outside. The sand pit, as an example, is used for tactile activities. Water serves as visual stimulation or fascination as well as an audio relaxant. Scented plants, especially edible herbs, should be planted in the provided space. the scen of the plants can flow over into tasting them, by going inside the coffee shop, where a special menu includes teas and refreshments. Sensory stimulation is thus carried from inside to outside, physically and emotionally. The senses are thus continually stimulated by walking through the centre, guaranteeing an unforgettable sensory experience.</p>
	<p>Northern wing: The complete upper floor of the northern wing is divided up by partitions (Image 5). A sturdier partition forms a room in the east, while glass and thin drywalling partitions divide the western side. The western divisions are impractical and circulation throughout them is not optimal .</p>	<p>As new design proposal, all additions inside the building will be removed. An open, clean space is needed to house the conference room, which will be situated in this space.</p> <p>All later additions will be removed to make space for new partitions, which will be carefully installed accommodate the required functions upstairs.</p>

Evaluation of Existing (continued)	Design Response (continued)
<p><b>SPATIAL ADDITIONS</b></p>	<p>Tower' additions: Exhibition cabinets have been added to the ground floor. Partition additions have also been added to the top floors inside the towers, which once again are not logical or practical. The partitions consist of thin timber, which is pierced by glass panels (Image 6).</p>
	<p>Western façade: A rectangular addition, stretching from the street to the zoo, was built next to the western façade (Image 7). The addition consists of corridor rooms that were previously used for accommodation. They are now either left abandoned or claimed by the homeless. The addition roof stretches against the museum facade and thus covers the wagon door openings (Image 8). The addition was not well thought through and hinders the museum building.</p>
	<p>Eastern façade: Car ports and other shelter structures have been added to the eastern façade. These lack maintenance and are of no value anymore. Uneven blocks also protrude from the ground floor walking level, which do not seem to have any function (Image 9).</p>
<p>Basement: The spatial layout is confusing and impractical. A bigger area to the left of the existing staircase can be useful for gatherings (Image 10). The other side however, is subdivided by arches (Image 11), forming a corridor, leading to another 'bricked-in' corridor. This former arched construction is possibly necessary to support the above floor.</p>	<p>The additions are not practical and divide the original space into awkward rooms. All additions will be removed in order to create the original open space, which is needed for the proposed exhibition- and admin tower.</p> <p>The addition will be removed for the purpose of this design proposal. The addition leaves the corridor space dark and cold. By having the addition removed, firstly one of the two doors on the façade will be able to fully open up again, and secondly, light will fill the interior of the proposed library and seminar room. A facility for outside recreation is also created by opening up the space, allowing good communication between the library and seminar room.</p> <p>All added structures will be removed, leaving the façade clean and unblocked. The protruding concrete blocks on outside floor level will also be removed, levelling the surface for easy walking. A driveway will be added to the east of the building, which will lead from the gate off Boom Street to the main kitchen, where delivery will take place. The building thus has an independent vehicular entrance.</p> <p>The basementstructure will be kept as is, except that the bricked-in arches will be opened up for better circulation and accessibility. A door on the northern side side will be inserted to facilitate direct contact with the zoo. The slope of the site at the back of the building is on the same level as the basement floor.</p>

Evaluation of Existing (continued)		Design Response (continued)
CIRCULATION	The existing circulation is difficult due to the additions, inhibiting circular movement. Cross circulation is therefore almost impossible.	By removing the courtyard addition and reinstating the veranda, movement around the courtyard will be possible. The veranda circulation is extremely important in connecting the individual building wings. Cross-cutting through the courtyard will not be possible, as different height levels keep different textures. The informal audience seating will serve as social centre.
	An eye-catching ground floor wooden staircase in the northern wing leads to the top floor (Image 12). It consists of timber, where newel post and balusters are profiled and painted. The staircase is boxed in at the bottom, where it disappears in the top floor.	The existing staircase is still stable and is situated in a logical, functional position. The paint on the timber will be stripped, showing the original timber texture and colour.
	A steep timber staircase leads to the basement from the northern wing (Image). It sits in a corner and is positioned under a trap door. No railings are attached to the staircase, almost leaving it as a ladder.	The existing staircase will be removed, as it is dangerously steep for public and animal use. A new staircase will be added underneath the existing staircase in the northern wing. This staircase will lead down to the basement, where Animal Therapy will be facilitated. By placing Animal Therapy in the basement, an easy and strong link is formed with the zoo. The centre therefore reaches beyond its interior to connect within the zoo.
	Identical, mirrored staircases in the towers lead up to the first floor. These staircases look similar to the one in the northern wing. The staircase in the eastern tower is concealed by additional partitions (Image 14).	All cladding onto the staircases and partitions will be removed to emphasise the original state of the staircases. The paint on the timber and vinyl layer on the treads will also be removed. Any worn out tread, which has become structurally unsafe should be reconstructed. The staircase should represent the original.
VOLUME	The greater part of the building contains a floor to ceiling height of approximately 5.8m. The only higher volume is that in the 'library', where floor to ceiling height reaches 7m. A height of 3,7m runs throughout the northern wing.	Sufficient floor to ceiling height allows for mezzanine levels being added to the Dry Art and Music Therapy room. The additional floors provide therapists' offices and more private therapy or practise rooms.
		Inside the library the extra level houses quieter reading facilities, internet and other electronic services.

Evaluation of Existing (continued)		Design Response (continued)
VOLUME		The mezzanine level in the coffee shop allows for further seating and/or storage space.
VENTILATION	Ventilation space underneath the wooden floors allows for sufficient air circulation, which can also be confirmed by the cast iron vents visible underneath the veranda floor in the courtyard (Image). The original plan also indicates this area as 'Crawling Space'.	Sufficient floor and roof ventilation will leave a great deal of the interior cool in summer.  Cross ventilation is assisted by the added openings in the eastern- and northern façade.
	Roof vents are present all along the different roofs of the wings (Image 16).	
	Room ventilation is minimal due to insufficient openings in the exterior walls.	
WALLS	The original exterior and interior walls are all lime plastered. An extra plaster, a pitting plaster, is added on the inside of the walls to prevent the later applied paint from being soaked into the bricks. A lime-based colour only can be applied to the walls. The original colour scheme, pink and creme, can be seen where the later applied PVA colour is peeling off (Image 17).	Light partitions will be added to the interiors, without touching the existing walls. A different theme colour is allocated to every room- to repaint the wall and finish them to specifications, the paint will also need to be lime-based.
CEILINGS	West wing: An important ceiling, the only ceiling to be vaulted in, is left in the northern half of the west wing, which for the proposal will be left untouched and fully exposed (Image 18). 20mm quarter rounds are attached to the additions in the southern half as cornices on new timber ceiling.	The library will be housed in this space, where the interior allows the ceiling to be perceived in admiration. The quality and character of the ceiling adds respect to the room.

Evaluation of Existing (continued)		Design Response (continued)
CEILINGS	East wing: Very expensive and exquisite pressed steel ceilings were fitted in the eastern wing (Image 19). The ceiling was presumably imported from a big company in France, England or Germany. These ceilings contain a deeper, more decorative pattern. All pressed steel ceilings are finished off with a profiled steel cornice.	The valuable ceilings in the eastern wing will be left and will be able to be viewed closer from the added mezzanine level.
	North wing: a cheaper ceiling was installed here, which consists of 150mm imported tongue and groove Baltic deal ceiling boards. 150x12.5mm timber profiled cornices frame all timber ceilings. 22mm softboard acoustic panels, random drilled, were added to all upper floor ceilings in the north wing (Image 20). All other ceilings in the building are either not original or too damaged to be preserved.	The acoustic panels which have been added later, will be removed, leaving the original Baltic deal ceiling exposed.
	Other pressed steel ceilings that are worth preserving can be found in the foyer (Image 21), top exhibition floor and top admin floor (Image 22). The names of these spaces correspond to the newly proposed plan.	The lower added ceilings in the front façade towers will be removed to reveal the pressed steel ceilings behind it.
FLOORING	A beautiful black and white chequered imported marble floor covers the current foyer (Image 23). This floor compliments the time in which the building was built. (1899-1902)	This floor is the only marble floor throughout the building. It is still in good condition and adds fine character to the foyer in proposal. The floor will be kept.
	The southern-, east-, west- and partly northern wing contain original 110mm clear Oregon pine flooring. However, battleship lino flooring was stuck over the original Oregon pine floor in the western wing, while the eastern wing's floor was covered in 'Hunt Leuchars & Hepburn' parquet flooring (Image 24). This flooring types flared from 1965-75. The outer ends of the northern wing show a different, later installed parquet timber floor (Image 25). The floor of the northern wing was later covered under carpet.	All later added flooring layers will be removed to expose the original Oregon pine floors. If damaged, the floors will be renovated and treated accordingly.

Evaluation of Existing (continued)		Design Response (continued)
FLOORING	A basement is underneath the middle section of the northern wing. Rough concrete flooring stretches throughout the basement, leaving it cool and uninviting.	Seeing that Animal Therapy will be placed in this space and animals will frequently move through the interior space, the flooring needs to be cleaned easily. It is a north-facing basement, allowing it to be a warm, friendly space. Tiles will be added- these are easy to clean and will not affect the interior temperature negatively.
	Local blue slate slabs make up the walkway surface of the veranda (Image 26). It can be assumed that the slate comes from the Erasmus Kloof quarry. Almost half the veranda slate has been covered by the new flooring material in the courtyard addition. The original slate half is thus lost.	A new veranda walk way will be added, covered by a new, non-slippery flooring material. The new material will speak of its own time, thus allowing the original slate floor full recognition.
	A hand chiselled granite threshold separates each exterior door from the veranda and interior.	The thresholds are in good condition and are valuable to keep.
WINDOWS	Most windows are only found on the northern and southern side of the north wing. Slightly protruding architraves can be found above the window holes on the exterior. Standard sliding sash windows are inserted into all the window openings (Image 27). The windows are set back deeply to the interior. Timber State Oregon window sills make the suitability questionable. One sash window, on the top and bottom floor, facing the courtyard can be seen per tower (Image 28).	All existing windows will be kept. Windows will be added onto the eastern and southern façade to enhance interaction with the outside and allow for better light quality. The newly added windows will be light and simple, adding a new time layer to the building.
	More modern steel windows are placed in the northern wing corner ends (Image 29).	
	Half round timber windows fenestrate the top tower floor to the street (Image 30).	
	Two timber casement type windows with small panes can be found in either tower to the street front.	
Centre pivoted clerestory windows are found on the southern street façade and on both (east and west) sides of the east and west wing (Image 31).		

Evaluation of Existing (continued)		Design Response (continued)
WINDOWS	A customised window has been inserted into one of the recesses next to the main entrance, along the southern façade.	This window will be removed. All other recesses along the street façade will be opened up in order to allow good communication between inside and outside. In so doing the building will engage the passerby.
DOORS	Architraves also frame the top of all the original doors. Exterior double flb (framed, ledged, braced) doors are spaced throughout the exterior courtyard walls (Image 32). Original finger plates are still placed on the doors. Original handles can also be found on most original doors (Image 33).	All original doors will be kept, with the paint removed to celebrate the former beauty of it. All other doors that are added to eastern and northern façade will speak of a new style, a new time layer.
	Two wagon doors can be found on the western façade. The thresh level of these doors unfortunately does not allow connection with the ground level, as the slope results in a fall of > 1m.	These doors will be kept as they are, except that the paint will removed to reveal the original wood grain.
	A wrought iron gate separates the interior of the foyer with the exterior street scape (Image 34). This gate is still the original, as rivet marks can be seen at all joints.	A further glass seperation to the wrought iron gate will be added to the street's side. This will improve privacy, weather and noise conditions.
	No doors, except a later added double sided flb door is found on the eastern exterior façade (Image 35).	Self manageable doors will be added into the eastern façade, facilitating direct contact with the outside.
LIGHT QUALITY	Clerestory on the south- and west wing are painted black to completely block out any light from the outside. This was probably done when the building was still used as museum to bring 'independent lighting control' to the exhibition space. It is sad that despite all effort to enhance the building, no attempt worked and the building lost a great deal of quality. The changes also lead to the building being cold and hostile.	In order to achieve good lighting, firstly, the paint on all affected clerestory windows needs to be stripped. This will allow the natural light to penetrate the interior, thereby improving the light (lux) levels and increasing the inside temperature.

Evaluation of Existing (continued)		Design Response
LIGHT QUALITY	More light penetrates the eastern façade through the clerestory windows, leaving the space relatively well illuminated (Image 36).	<p>An opportunity to maximize the light of morning sun is lost due to the lack of fenestration on the eastern façade. In the design proposal door openings are cut into the wall, enhancing the interaction between inside and outside. The eastern facade recess location will be used as guide to where openings will be cut in.</p> <p>Recesses are also present along the southern façade, of which one is filled with a window. Five more recesses will be opened up, of which two will form part of the proposed coffee shop, while the other three will allow visual access into the wet art space. These openings will improve the interaction between the building user and passer-by on the street.</p>
	The best light quality can be found throughout the north wing. Windows are spaced generously along the northern façade and all are left uncovered (Image 37).	
	The openings in the southern façade are limited to the windows in the towers and one opening to the left of the foyer opening.	
SUN CONTROL	Asbestos louvres on the eastern and western clerestory windows were added by Udo Küsel, a former zoo director. These are in a bad state and partly disintegrated. These louvres are not functional anymore and furthermore block out any potential light (Image 38).	<p>The louvres will be removed, leaving the clerestory windows exposed and allowing light to enter the interior.</p>
		<p>The new veranda roof will be added to where the courtyard addition will be removed, thus occupying the same area, just treated differently. The pavillion roof will therefore fully cover the stage.</p>



Evaluation of Existing (continued)		Design Response (continued)
SUN CONTROL		<p>A partition is formed along the edge of the southern veranda, leaving the inside veranda more private. This will screen off the ablution blocks on one side and add a sense of security. This particular veranda strip will be used during the night as well, when residential guests wish to move between the dining hall, ablution and accommodation. It therefore should be absolutely safe and comfortable. As it is the southern side of the wing, it will tend to be colder and darker. To compensate for this, the addition will be well sealed and insulated and alters with light penetrable sections.</p> <p>Sun control is also added to the door openings on the western façade. This control system can close up against the existing door or stretch open to block out the sun.</p>
ELECTRICITY	<p>Only partial evidence of electrical lighting can be seen inside the building. The first clue being in the foyer, as one enters the building from the street's side. An old chandelier is still hanging from the ceiling (Image 39). Also an exposed electrical socket sits on the wall leading from the foyer into the east, where numerable wires protrude (Image 40).</p> <p>In the eastern wing, fluorescent light fittings are suspended from the ceiling. The fact that fluorescent lights were added speaks of a later addition (Image 41).</p> <p>Two fluorescent lights in the eastern side of the southern wing permanently shine dimly.</p> <p>The last indication of electrical light in the building is in the northern wing, where more fluorescent and other light fittings were added. It is therefore a mystery as to where and what exact wiring runs throughout the building (Image 42).</p>	<p>The old chandelier has character and will therefore be restored and kept in place. New, appropriate lighting will be inserted throughout the building, serving each specific function. Together with this, the building needs to be rewired completely to make it fit for the proposed uses. The new wiring should run above ceiling level and in the crawling space under the wooden floor. The northern wing has the least heritage value. If necessary, wiring can be chased into the walls.</p>

Evaluation of Existing (continued)		Design Response (continued)	
WATER & SEWERAGE	Not a single original toilet is found in the building. A toilet has been added later to the ground floor of the northern wing.	Male ablution facilities are added in the north-western corner of the building, while the ladies' ablution fills the northern wing next to the dining hall. An ablution room for disabled separates the two. All together 14 toilets, 30 basins, nine showers and five urinals will be added. The old existing sewerage and water pipes should be removed and new pipes added instead. The proposal shows a duct on the ground floor abluitions that hides all pipes and takes them to one municipal connection point. When installing the new pipes care should be taken as not to damage the old building.	
	100mm galvanized vent piping was used in the eastern tower, possibly leading water from a gutter on the central foyer roof. These pipes pierce through the original ceiling in the towers (Image 43).		
	The only other signs of water pipes are firstly those of the two hand basins found, one in the northern wing and one in the western front tower (Image 44). A 100mm LCC (London County Council) cast iron vent pipe, which is still sealed with lead, leads up from the bottom floor and punches through the original ceiling in the north wing (Image 45).		
	A sewerage pipe is suspended from the ceiling in the basement. Other pipes are also found there that run along side the sewerage pipe (Image 46).		
WATER DAMAGE	The building, as found now, is in derelict condition. According to the book <i>Building 100</i> , the building suffered from irreparable pipe burst damage.	Evidence of this, however, is not obvious throughout a great part of the building. Basement: water marks can be found on the floor.	
		Courtyard addition: timber beams and gypsum ceiling material is left sagged and broken. Throughout most of the building visibility is poor, as the light is blocked out (Image 48).	
OTHER	Boxed-in parts sit inside the outer walls of the towers. These stretch from the ground floor through to the top floor. It can be assumed that original fire places are behind these boxed. Also, chimneys on the tower roofs confirm the existence of the fire places (Image 47).	All boxes will be removed to expose the fire places to the interior. If the fire places are only accessibl from one side, the fire place in the western tower will be opened up, so it is accessible from both sides- the coffee shop and exhibition. Floor protection will be added in front of the fire place, if not yet existing.	

## 5.2 DESIGN DEVELOPMENT

### 5.2.1 Macro Site Development

#### Site plan

It seems that the former Nature Cultural History museum is just occupying needed space on the zoo property. The buildings around it thus move closer and closer, almost suffocating the museum building. The space surrounding the building should thus be used optimally. Currently the only vehicular access to the building is from the zoo's admin side. Pedestrian access into the building is possible through the front wrought iron gate or the later added single door on the north-east corner.

Two gates are incorporated into the original fence along the street front; a gate set further in gives access into the zoo. The latter gate will serve as delivery entry to the main kitchen. All gates will be reinstated in order to simplify access onto the Activities Centre's site. The Centre will thus function independently. A deck will be built in front of the two wagon doors on the western facade to allow access into the building. The two rooms (library and seminar room) will thus be linked from the outside. A door will also be inserted into the basement, facilitating direct contact with the zoo. Pedestrian access will therefore be possible from four different sides. (Figure 72)

#### Zoo links / routes

Tours will be led through the zoo as part of the received therapy. The aim is to also have activities in the zoo, such as Bird Calls (see SI), and having direct contact with therapeutic animals. Such animals would include tame elephants, horses and other appropriate zoo animals. The choice of animals will depend on the therapist and client.

The walkways should trigger the senses by for example, having a distinct texture that will give off a specific sound when walked on; or be accompanied by a scented plant. The goal is to have walkways that are easy to read, easy to feel or easy to smell in order to automatically also guide the sensory impaired clients. The signage should link up with the design of the walkways. (Figure 73)



Figure 73: The colour-coded routes lead from the Healing Activities Centre to each specific therapy animal.

#### Signage

The new signage installed through the zoo should be unique in between the already existing signage, allowing easy recognition and orientation. Each route to a specific zoo animal should be colour-coded. Therapy information points should also correspond with the specific colour.

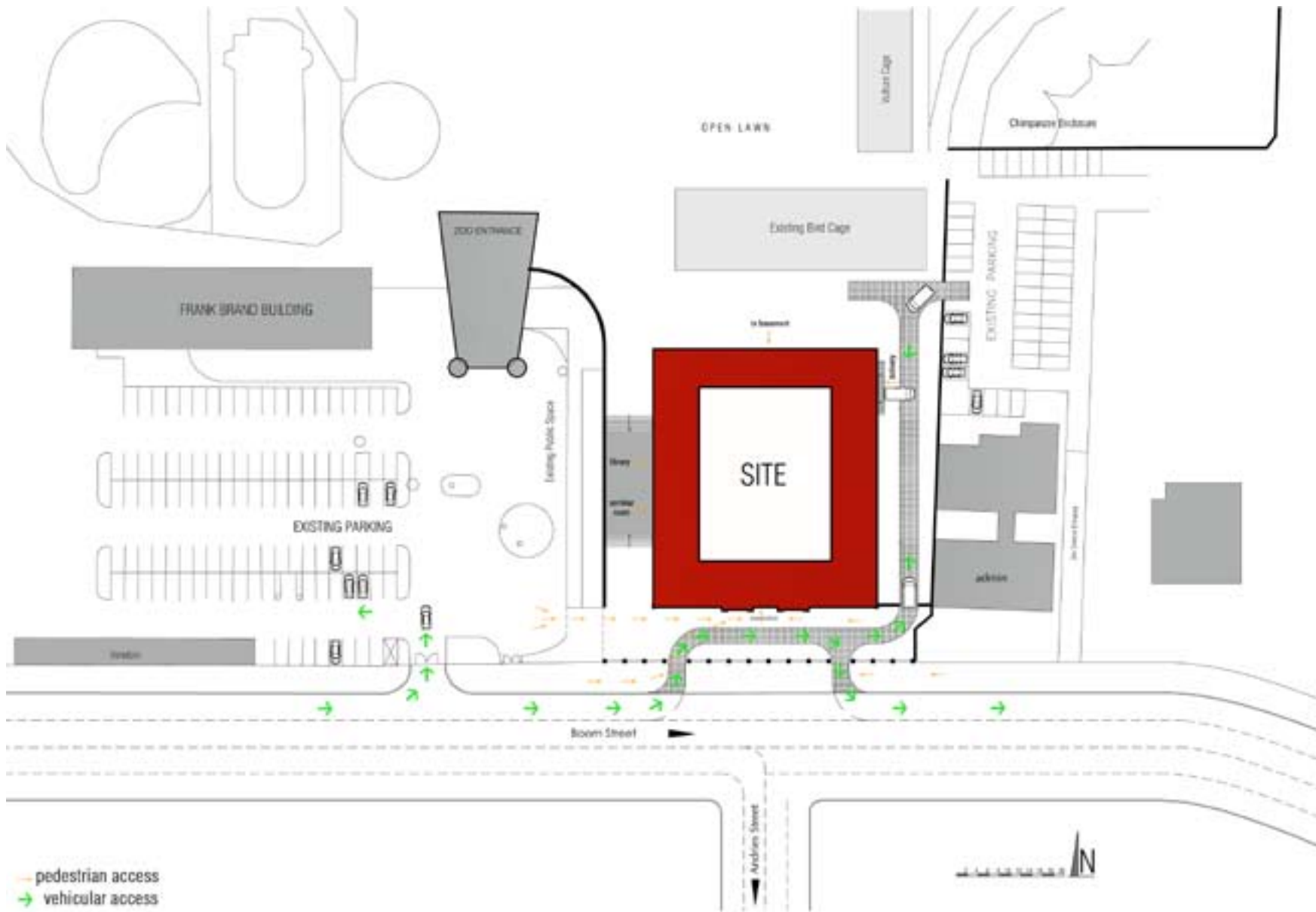


Figure 72: Vehicular and pedestrian acces to the building

## 5.2.2 Micro Site Development

### Interior Space Allocation

As the brain is divided into certain areas for processing the sensory information, the interior of the Activities Centre will also consist of specific zones for the different therapy types.

Most zones will have a balance of visual stimulation, suiting all patients. Every zone will have an individual theme colour, leading to its own identity and character. (Figure 75) Each space should be flexible enough to integrate all, but also transform into private spaces to only accommodate certain patient types.

Apart from the above mentioned zones, the centre needs other zones too to be fully functional. These include the reception and waiting area, the exhibition space, an admin block, accommodation facilities, delivery point, cleaner's store room and ablution facilities. (Figure 77)

### Building Plan

The main therapy types that needed to be accommodated were Art Therapy, Music Therapy, Animal-Assisted Therapy and Aroma Therapy. Each therapy type requests different spatial requirements.

Animal-Assisted Therapy was placed in the basement so that there would be enough space for all individual animals and their owners. In addition, the natural ground level drops by one storey from the street- to the northern facade, allowing a direct link to the outside zoo. From this point also, groups can meet to go to specific animals in the zoo for therapy. (Figure 73, 76) The placement for AAT is slightly separate from the rest, suiting those to whom animals do not appeal. (Figure 74, 76)

Art therapy was split in two- the Wet Art and Dry Art. Wet art was placed in the eastern end of the street facade. The newly inserted 'window boxes' will allow the passerby to be drawn into the space, linking the outside with the inside. New doors are added to the eastern facade, where the participants have the freedom to move outside on the deck. The Wet Art room also provides for a corner, where aroma foot baths can take place. These are of course moveable and can happen anywhere. Placed in the Wet Art room, the scent will travel out luring the pedestrian in. All wet types of therapies are grouped in this room. (Figure 74, 77)

Dry art is located in the southern half of the eastern wing, having direct access to the Wet art room. This room makes spaces for occupational therapy forms and quieter therapy. Due to enough floor to ceiling height (5.8 m) a mezzanine level is added, providing for additional therapy rooms and offices. The mezzanine system is later discussed in detail. As art therapy overlaps with drama, provisions for a stage are made. (Figure 74, 77)

Music therapy in turn flows over into dancing performances. Art- and Music therapy are therefore placed next to each other, so they can share a stage. Moreover, these two therapy types are placed in the eastern wing, which has been damaged by the former courtyard addition. (refer back to 'building evaluation') As a result, this wing allows for a greater design intervention. (Figure 74, 77)

The northern wing's ground- and first floor are seen as more private and are also treated accordingly. These floors would accommodate groups that book the centre for a specific time period. The main kitchen would provide them with meals, while it can also compliment the coffee shop. (Figure 74, 77)

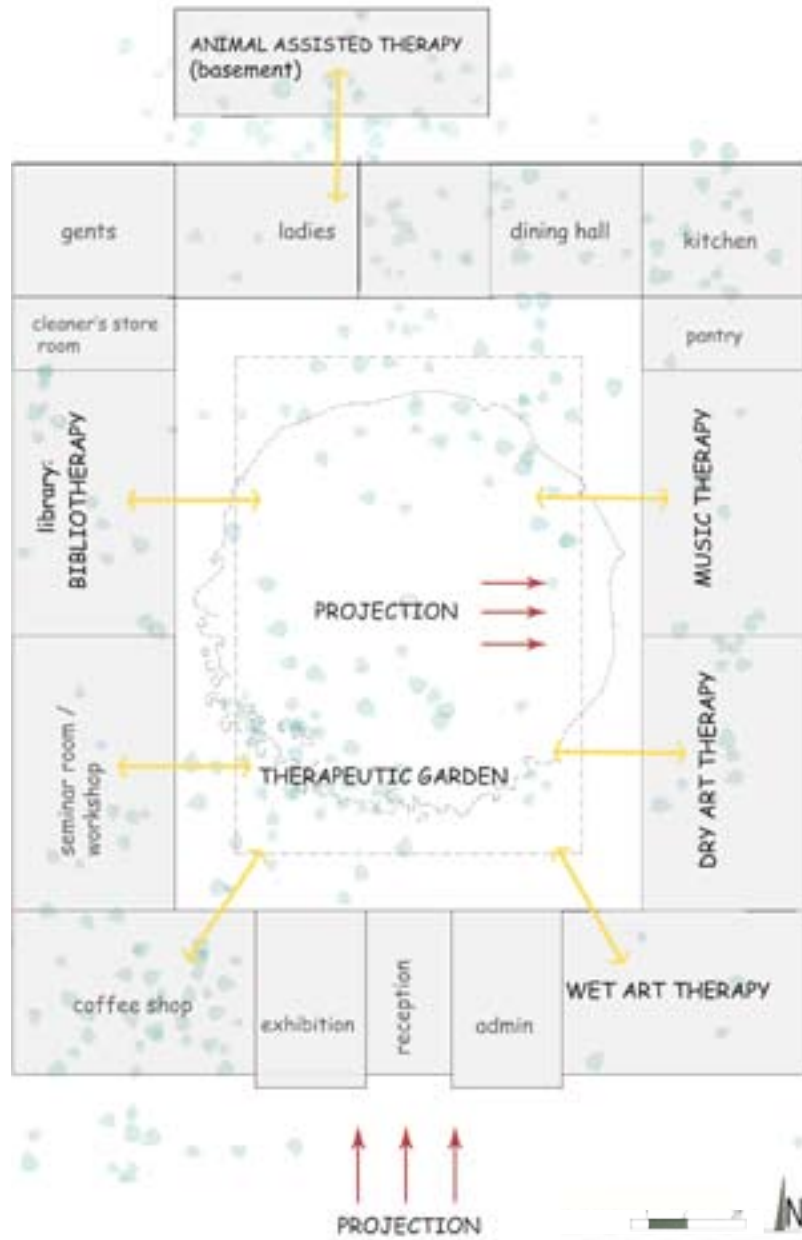


Figure 74: Therapy Allocation in Healing Activities Centre

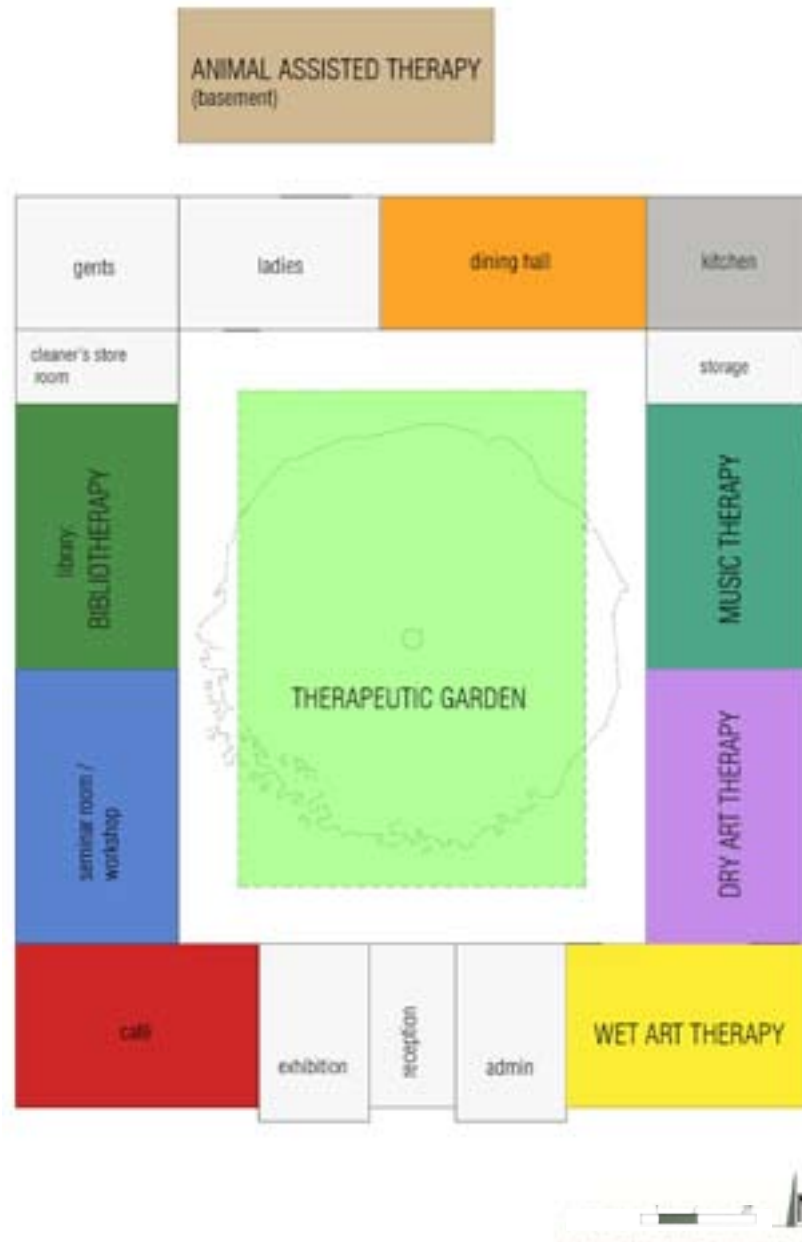


Figure 75: Colour Placement in Centre

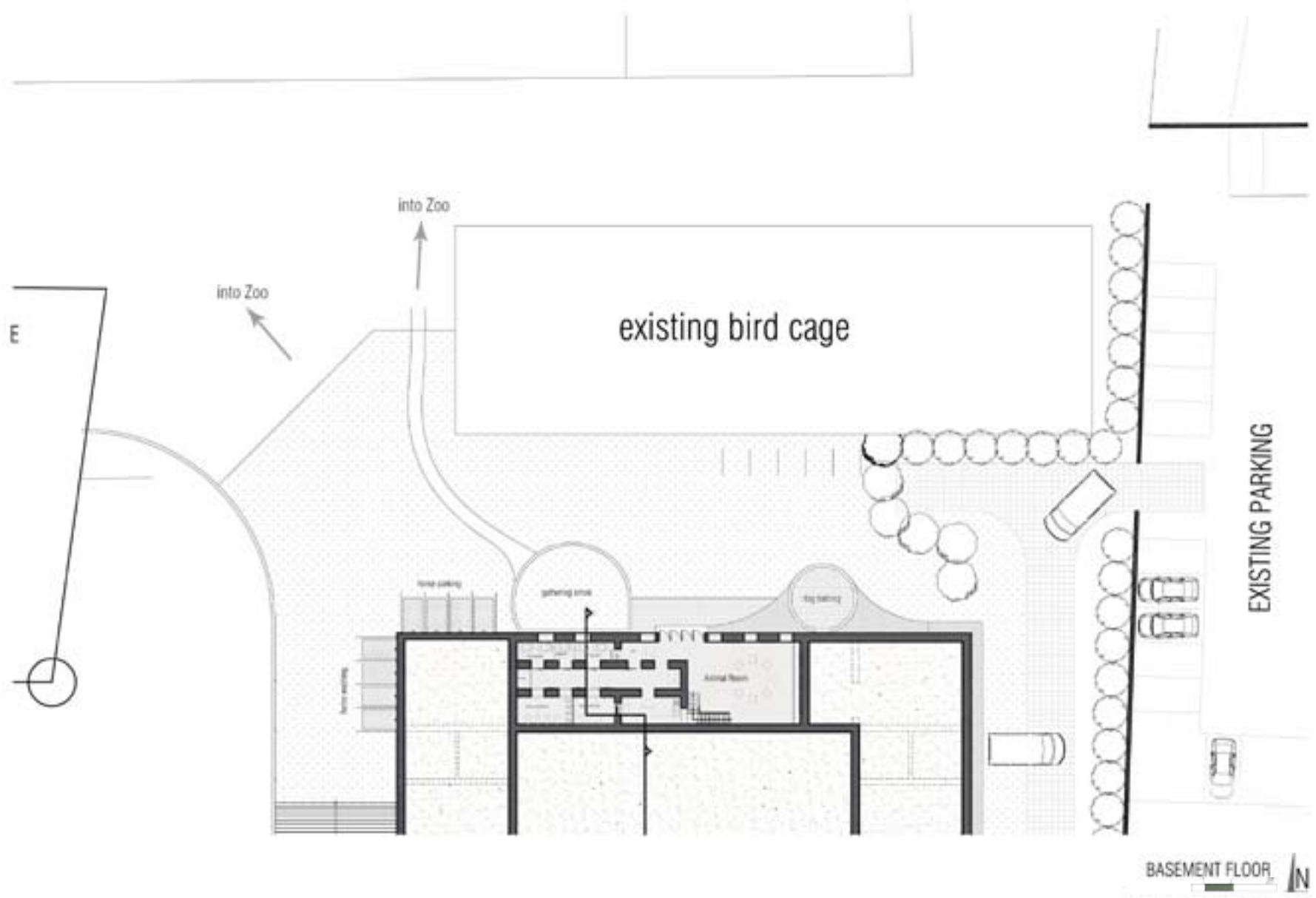


Figure 76: Basement plan linking into zoo



Figure 77: Ground Floor Plan of the Healing Activities Centre



The veranda will be reinstated, allowing circulation along the perimeter of the courtyard. This new floor will consist of Quartz Flooring, which is a suitable material for an inside/outside setting. Protruding from the veranda floor will be the stage. The 10,5x6m performance area will be constructed to meet 'spring timber floor' requirements. This is necessary as the dancers' feet should stay impact protected throughout performances (Figure 78a-c).

The stage is covered by a Pavilion Roof, which takes form of the prior courtyard addition. In so doing, the later added time layer is remembered, but improved. It is a light element which is added to the courtyard, not touching the existing wall. The height of the roof dramatises the stage. A modern element is added to the courtyard, emphasising the old and the new (Figure 79a-e). What's more, is that the construction material of the pavilion roof is used to fix tracks to it. These tracks contain automated screens, which can slide out to form the stage scene. Also, the inner screens can swivel, thus creating yet another stage setup. All screens are Grandview projector screens, onto which the back drop image etc can be projected. (Figure 80a, b) A tree house will be built into the existing London Plane tree in the centre of the courtyard, in which the projector, stage lighting control and other technical equipment will be kept. (Figure 81) The stage setup is flexible, allowing for any performance requirement.

Different levels and textures make up the courtyard. The aim of the courtyard is to bring all therapy types together, in order to optimize sensory integration. A sand pit runs along the western veranda edge. 'Chess' blocks, which are on the same height level as the veranda floor, are imbedded into the sand. Coffee tables and chairs will fill this surface as continuation of the coffee shop. (Figure 77, 82)

A pebble bed lines the northern edge. Water spouts are strategically placed inbetween the pebbles, so that water squirts form a pattern. This pattern changes height and rhythm, almost playing with onlooker. The sound of the water squirts collapsing onto the pebbles is therapeutic and will affect any person in the courtyard. (Figure 83)

An amphitheatrical line shapes the central seating area. A circular seating level unfolds in front of the stage, which is split into two heights. The higher seating level is a lawn bed which stretches deeper in between the sand and pebbles; the other the pebble bed on which a masonry seating surface is mounted. The setup thus cater for all ages, invited by informal, spontaneous seating. The lowest courtyard level, also biggest area is topped with lawn. Many of the SI activities would take place on this level, but also on all other courtyard levels. (Figure 84)



Figure 78(a): Perspective view of stage in context

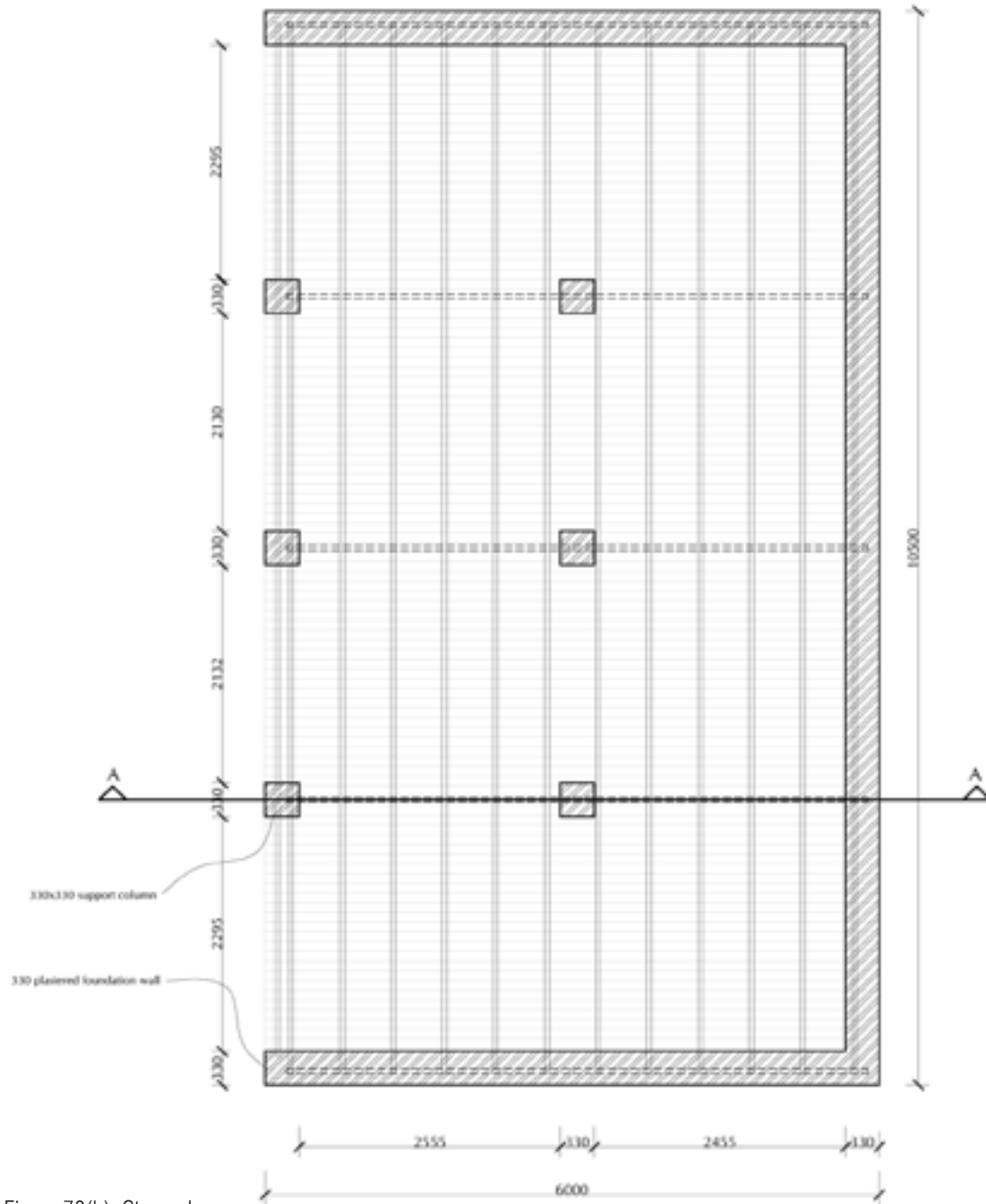


Figure 78(b): Stage plan

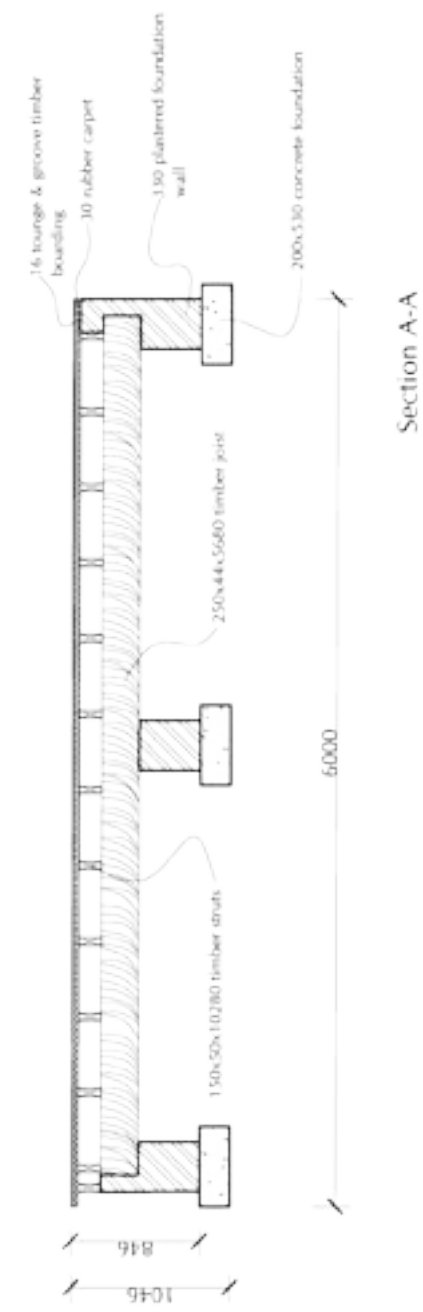


Figure 78(c): Stage section

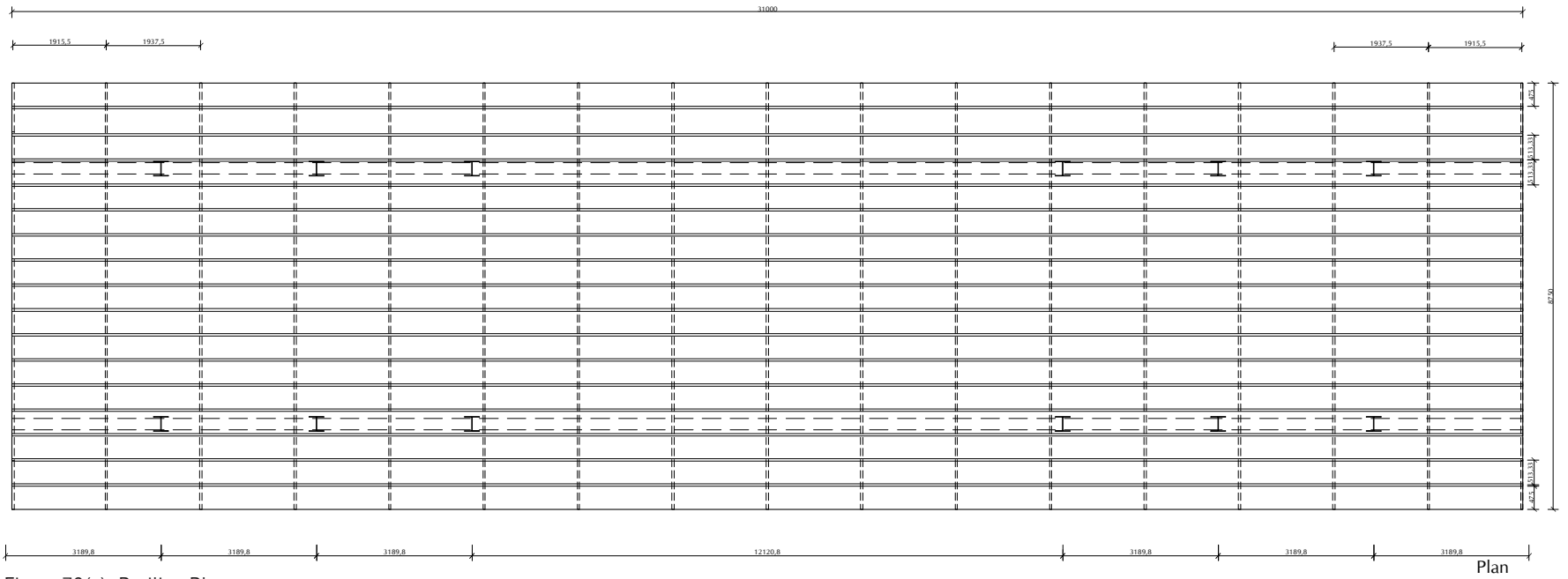


Figure 79(a): Pavilion Plan

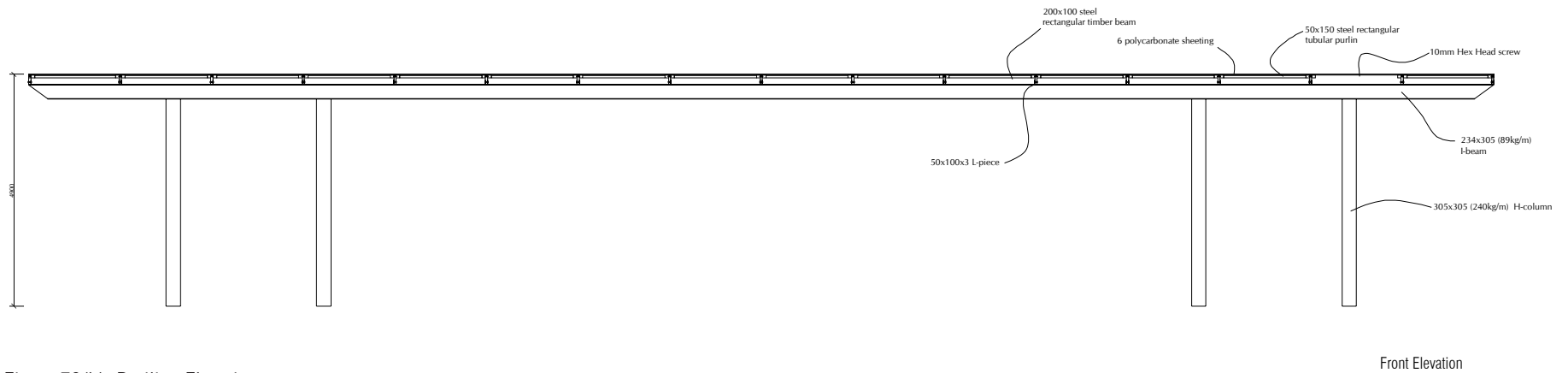


Figure 79(b): Pavilion Elevation

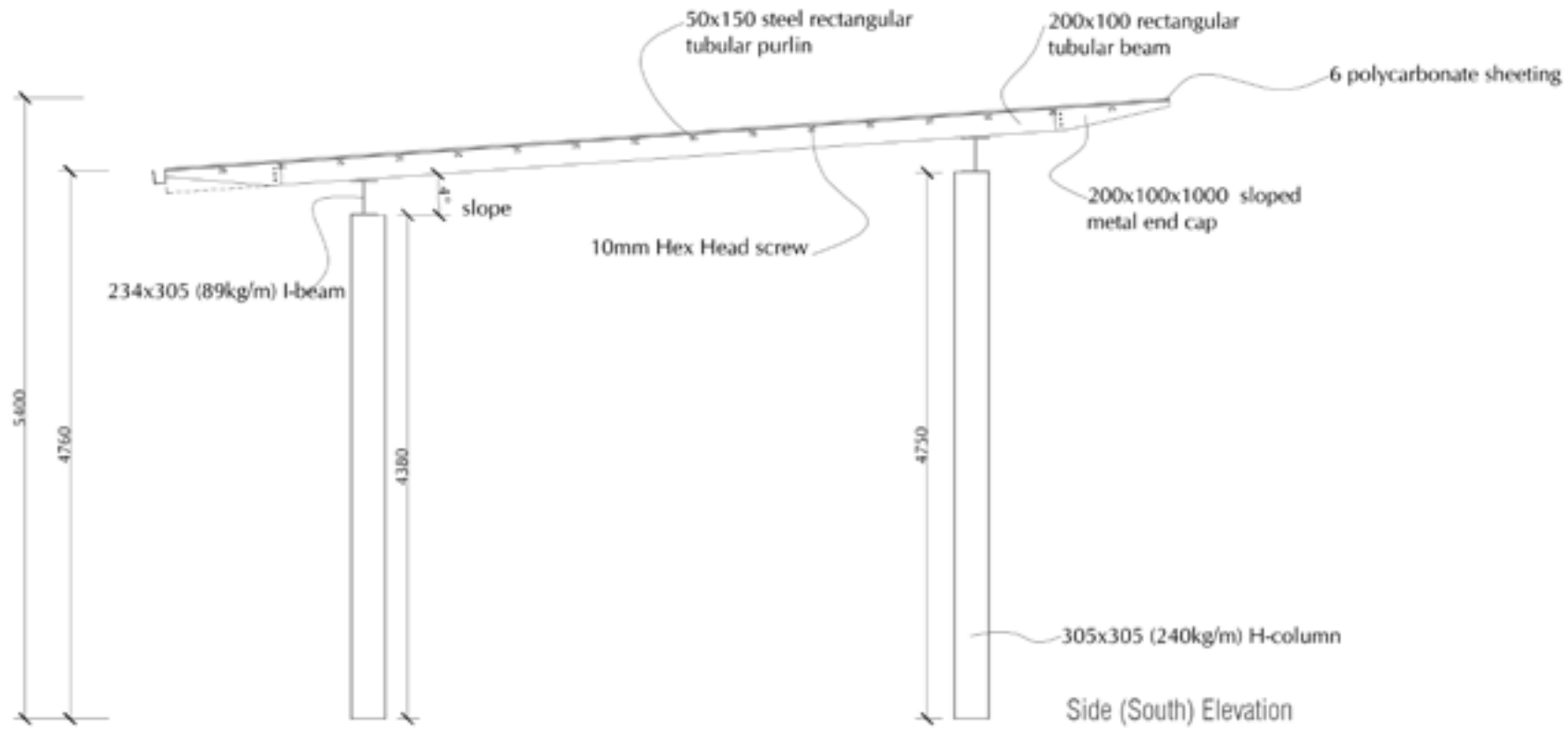


Figure 79(c): Pavilion Side Elevation



Figure 79(d): Pavilion Structure in perspective, seen from the north;

seen from the south.



Figure 79(e): Pavilion Structure in context

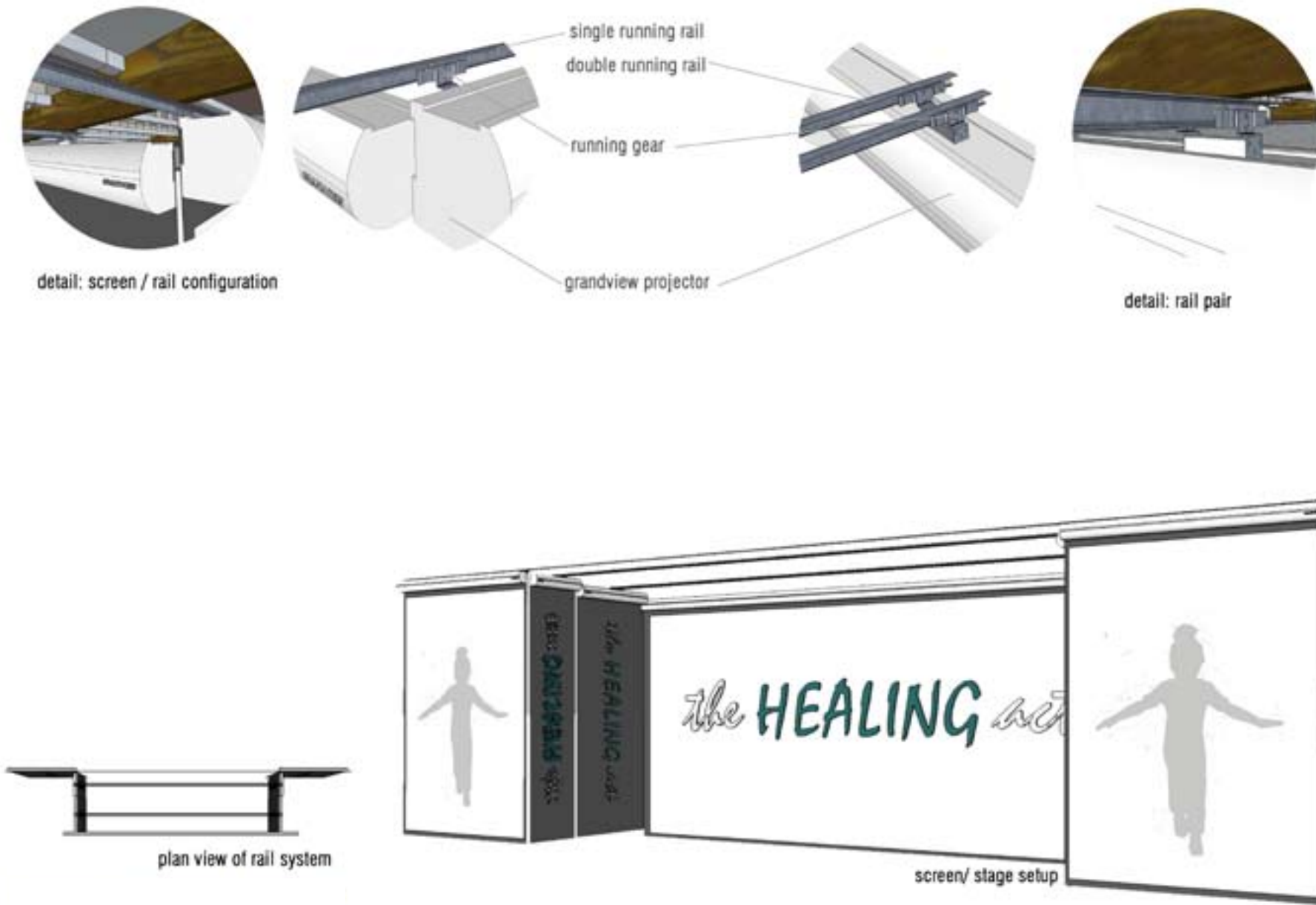


Figure 80(a): Assembly of the Track System

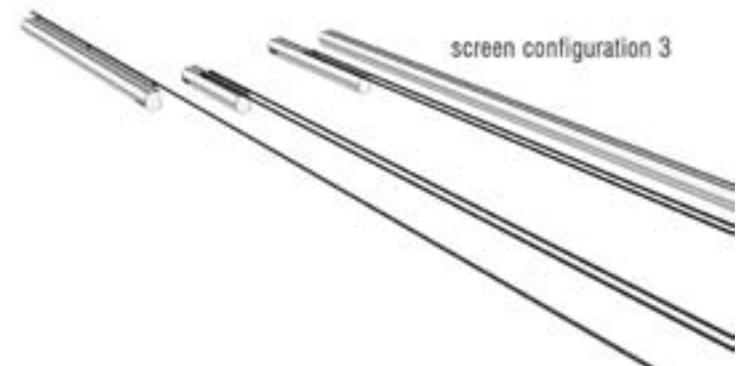
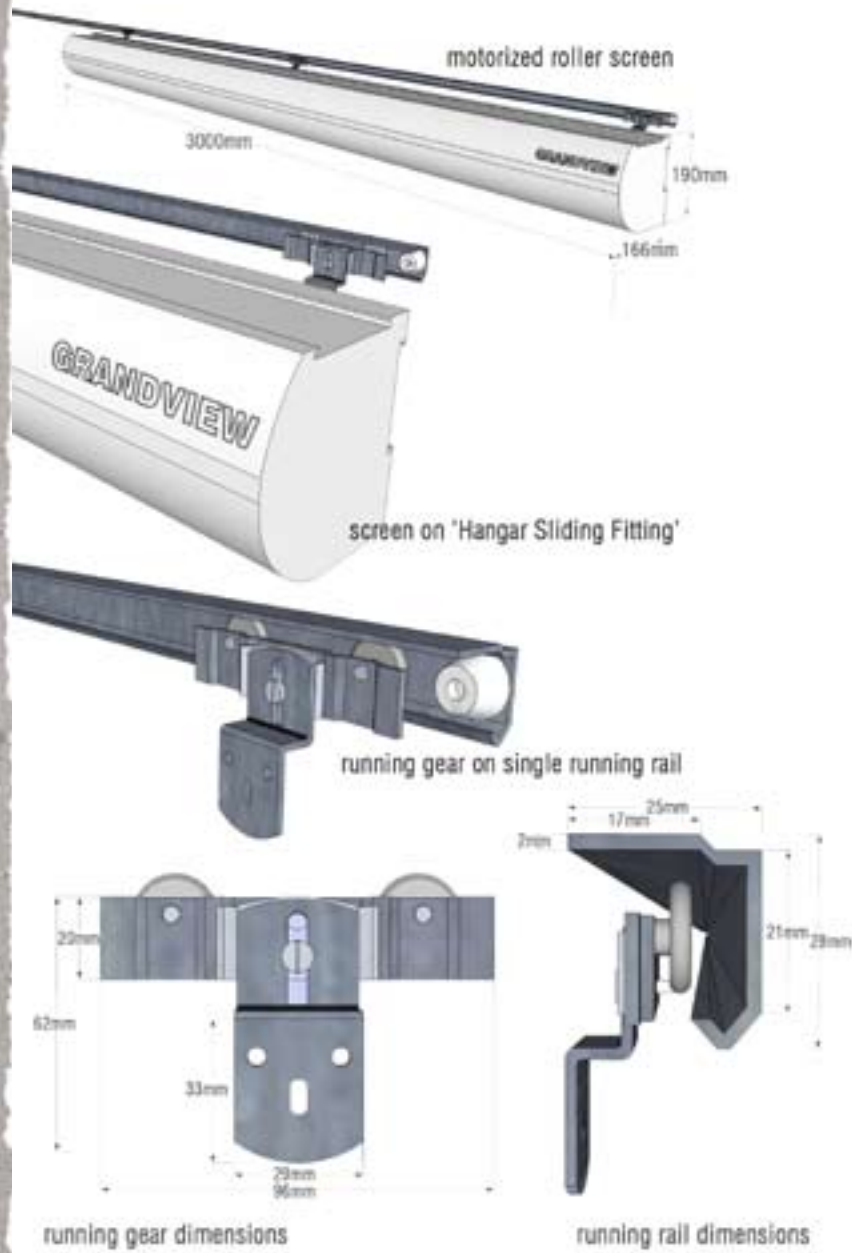


Figure 80(b): Pavilion roof Track System

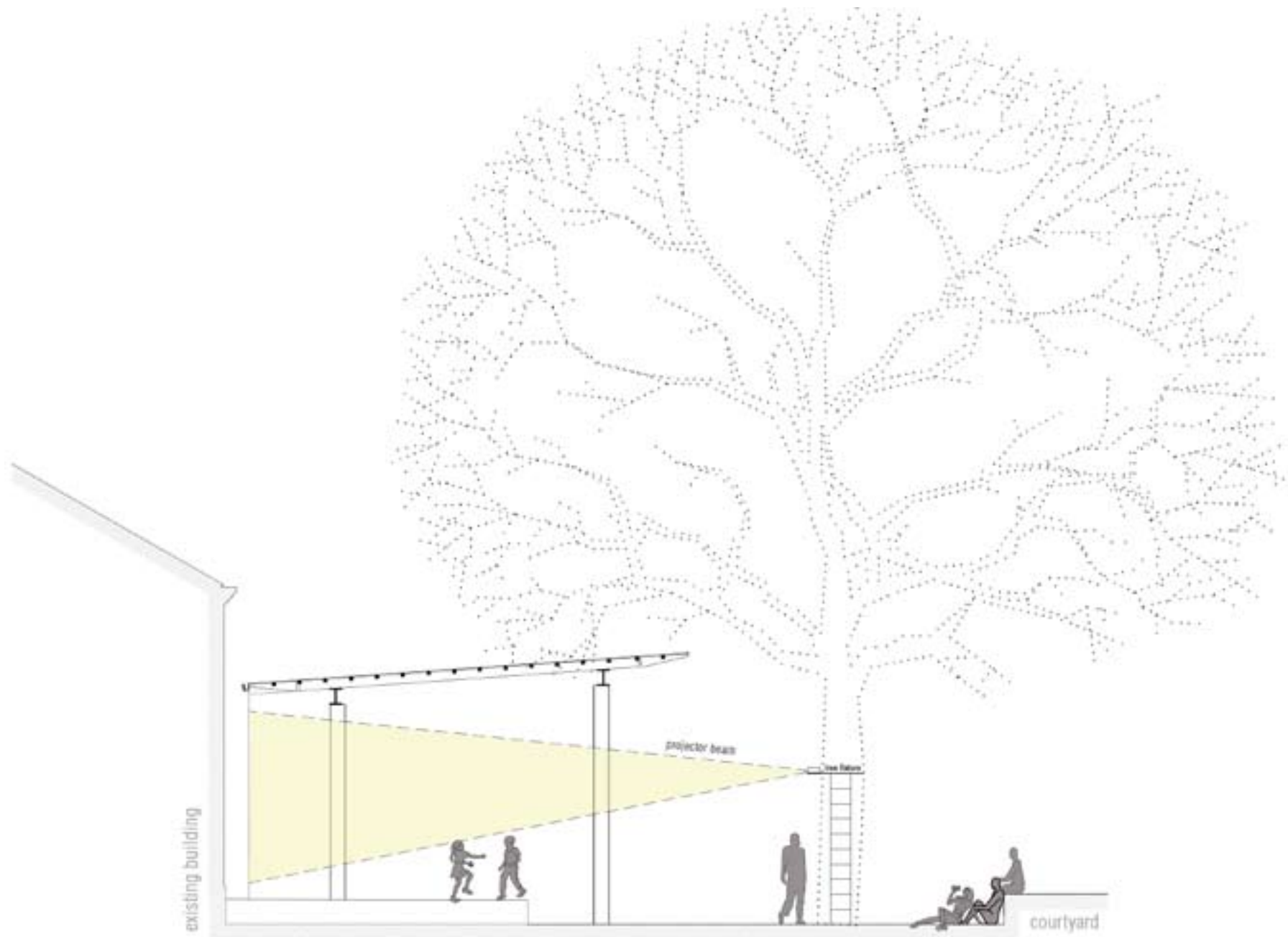


Figure 81: Projection onto stage





Figure 82: Extended coffee area into courtyard



Figure 83: Pebble bed and water feature. The different hight levels create seating opportunity.



Figure 84: Different levels and textures inside courtyard

### 5.2.3 Interior Design Development

#### Name / Identity

The Centre will be named *Healing Activities Centre*. Patients going to the centre will receive healing via activities relating to the different therapy types. (see Therapy Approach: Chapter 3) As mentioned before, each room will have its own theme colour, lending it its own identity. In order to achieve the centre's identity, the names of all rooms will start with 'healing'. Example: Healing Café, Healing Art, Healing Music etc.

#### Foyer

This space serves as an orientation point, where visitors are received by the receptionist and led to their particular destination point. A waiting area in the front allows visitors to have a seat, either while the contact person is called, while waiting for the patient to finish therapy or while waiting to get picked up again. The receptionist will address all traffic coming into the building.

#### Exhibition Area

To the west of the foyer, the exhibition tower can be found. As the patients produce art pieces during their therapy session, their art will be exhibited in the 'Healing Exhibition' tower. Exhibiting the art aids in healing the patient, by him receiving recognition for his work. The art works can also be sold, depending on the consent of the owner (patient). A variety of art will be displayed, such as paintings, drawings, sculptures, clay ornaments, puppets and other artefacts relating to craft. Special exhibitions can also be arranged, for example, a Christmas Market, where the art will be sold, promoting the Activities Centre and the artist. The exhibition space will flow from ground floor up to the first floor, where wall openings will allow the viewer to look down into the 'Healing Café', into where the art will also spill over.

#### Art Café

Moving further west from the exhibition, the visitor will enter the 'Art Café'. This café will serve light meals and snacks, such as sandwiches, pies, salads, soups, muffins and cakes. The food types will be sourced in on a regular basis and of a type that is ready made. This is essential as the kitchen in the café will not be able to handle any bigger orders. The kitchen, although handling small meals only, will need an extraction fan. A 1,8x1,2 extraction canopy will be inserted at the northern boundary of the café kitchen, where heavier meals will be prepared.

Seating units are arranged on the ground and mezzanine floor. Here art will further be promoted, in so combining it with the art of coffee drinking. A new coffee drinking experience is created. (details are discussed under Product Design) (Figure 85)

Also, the fire place will be opened up, lending the interior a warm welcoming atmosphere. The fire place, having an almost hypnotic effect on the onlooker, will furthermore lead to healing or escaping. The coffee drinker is again confronted with art in the columns supporting the mezzanine level. (see product design)

When upstairs, the client has another visual link to the 'Healing Exhibition' next door. By looking down, an overview of the café is achieved. From this level also, the coffee drinker can look out onto the street and in his mind be a part of those activities. The interaction between inside and outside is made possible by the opened recesses. (see also Building Evaluation: windows) The mezzanine level will experience a different, a quieter atmosphere.

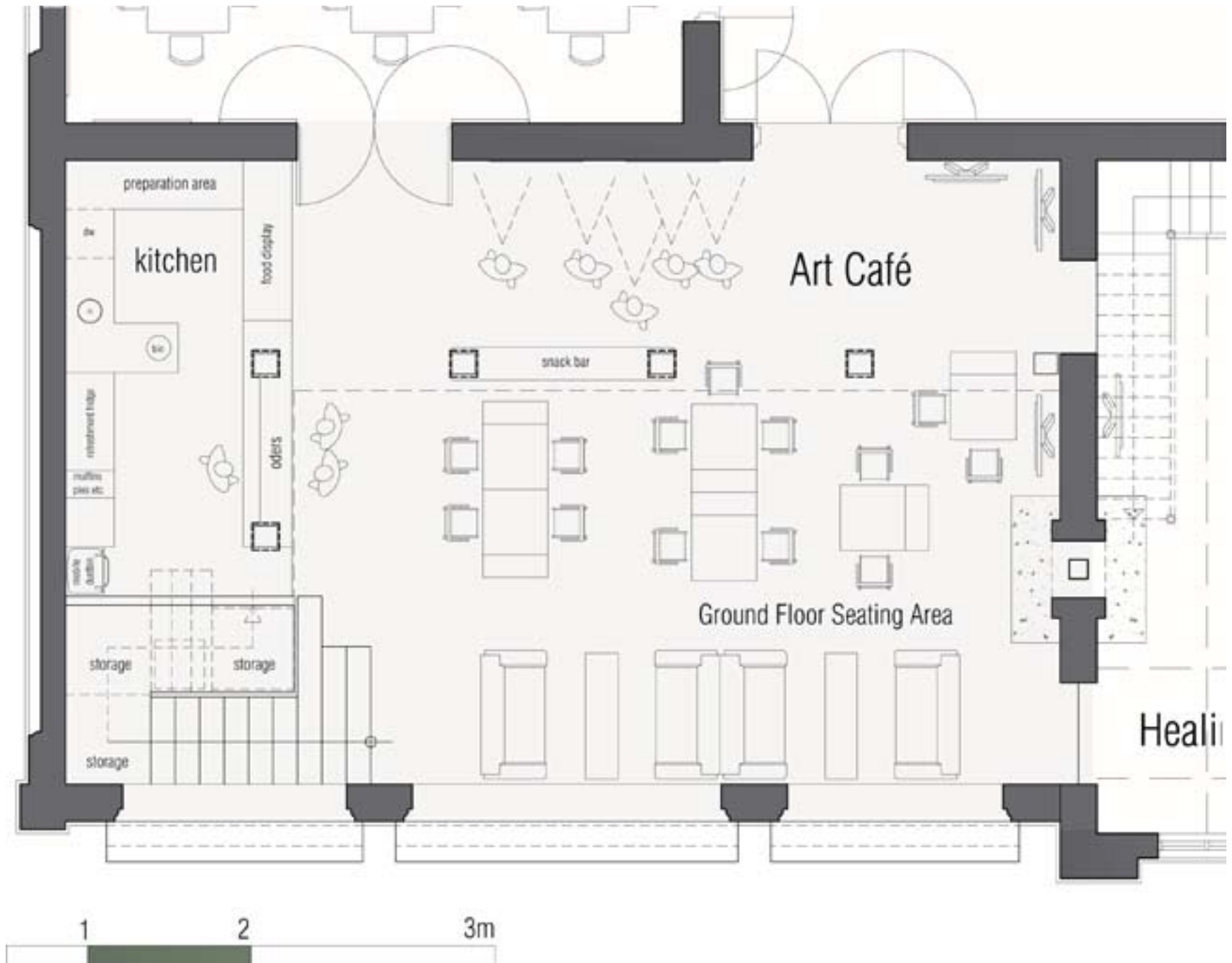


Figure 85(a): Ground floor plan of Art Café

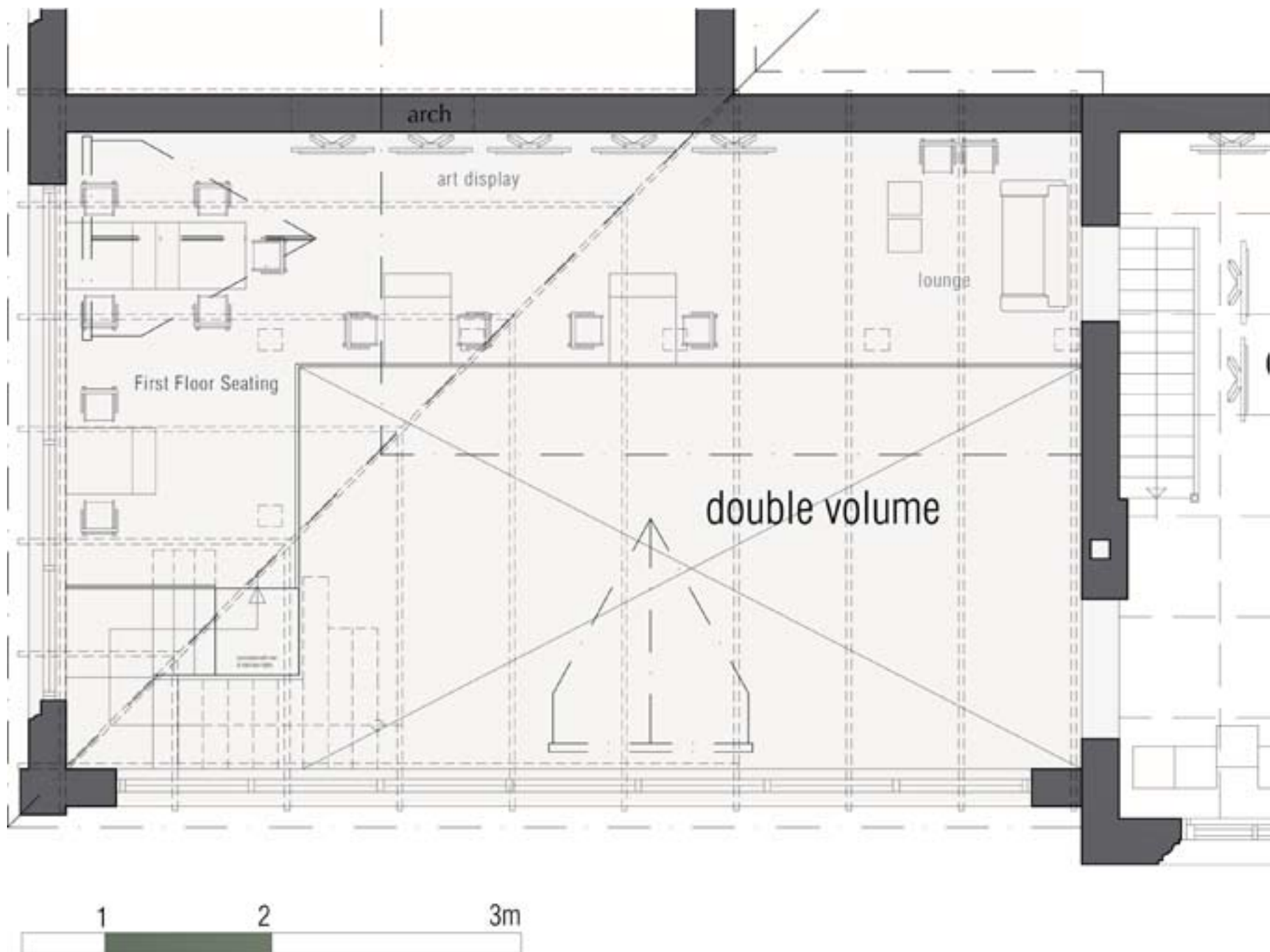


Figure 85(b): First Floor Plan of Art Café



85(c)



85(d)



85(e)

Figure 85(c): View into Art Café from staircase

Figure 85(d): Perspective towards kitchenette underneath mezzanine floor

Figure 85(e): View into Art Café from the 'Healing Exhibition'



85(f)

85(g)



85(h)



Figure 85(f): Exterior view into Art Café

Figure 85(g): Perspective onto mezzanine floor

Figure 85(h): View towards adjoining door and mezzanine gallery



### Admin

Next to the foyer on the east, the admin tower can be found. Here, the managerial staff and event coordinators would be seated. Their job would include to organize of events, such as the SA Chess Tournaments, bridge competitions, work shops etc. Work stations are situated at the bottom, while the top contains staff meeting- and storage facilities. The admin tower and receptionist in the foyer will work well together as they are placed adjacently.

### Main Kitchen

Meals and other necessary beverages will be prepared in the main kitchen. The meals are however, aimed at a different user group than the café. Groups, for example, work shop members, team building groups, school groups etc would receive their foods and beverages from the main kitchen. Enough seating for a group of 27 is provided in the dining hall neighbouring the main kitchen.

### Seminar Room

The above mentioned groups would make use of the Seminar Room. In addition to those groups, the room will be filled by the members participating in the chess tournaments, bridge competitions, lectures, work shops etc. The eastern inside wall is kitted with a Grandview roller screen, onto which can be projected. Different furniture arrangements can be accommodated in this room, as shown in Figure 61. Rows of chairs can be set up in order to house a audience, while the same chairs can also be placed around tables used during work shops. The tables should be of such a type, that they can fold away easily and be stored in brackets against the wall.

### Accommodation Room

Groups that booked the centre for, example a week, need accommodation facilities. These can be found on the first floor in the northern, more private wing. 14 beds are placed in the communal bed room, which could double up as bunker beds and provide for 28 sleeping facilities. When having entered the bed room, two toilets, one on either side can be found. To the other side of the bed room is a communal lounge, which holds a television and games. Here, the visitors are encouraged to have casual conversations.

### Product Design

The seating unit consists of a container which unfolds to hold a table top and three chairs. The table top consists of red U463 perspex, into which a leuco dye is mixed while the perspex is still in a matrix stage. The dye is a powdered microencapsulated thermochromic dye made from encapsulated spiropyranes of fulgides. When leaning onto the table top or placing hot mugs etc onto it, the dye will react to the temperature rise by reversibly changing colour from transparent to coloured, eg. white. In so doing, the coffee drinker 'interacts' with the table top when it reacts to the temperature touch, giving back personal information.

The proposed chairs are already on the market- the specific one chosen folds flat to 40mm thick, are 440mm long and 920mm high. (Sold at Mr Price Home) Each seating unit can accommodate one to three persons. On the top of the seating unit is a glass box, which serves as display box for artefacts. The display box can be stocked by opening the container door in order to be able to pull out the display drawer. This would mean that all is locked and safe when the unit's door is locked. On the opposite side of the table top is more opportunity for display. The glass door can be opened, and a flat painting or drawing be placed inside. Thus, while seating visitors, art is displayed in numerous ways.



1 closed unit from front  
**OPENING UP UNIT DOOR**



2 opening the cupboard door



3 flipping open the display lid



4 pulling out display drawer



1 closed unit from back

**UNFOLDING SEATING UNIT**



2 flipping up table top



3 folding down table legs & adjusting leg height

Figure 86(a): A step-by-step guide as how to operate the seating unit

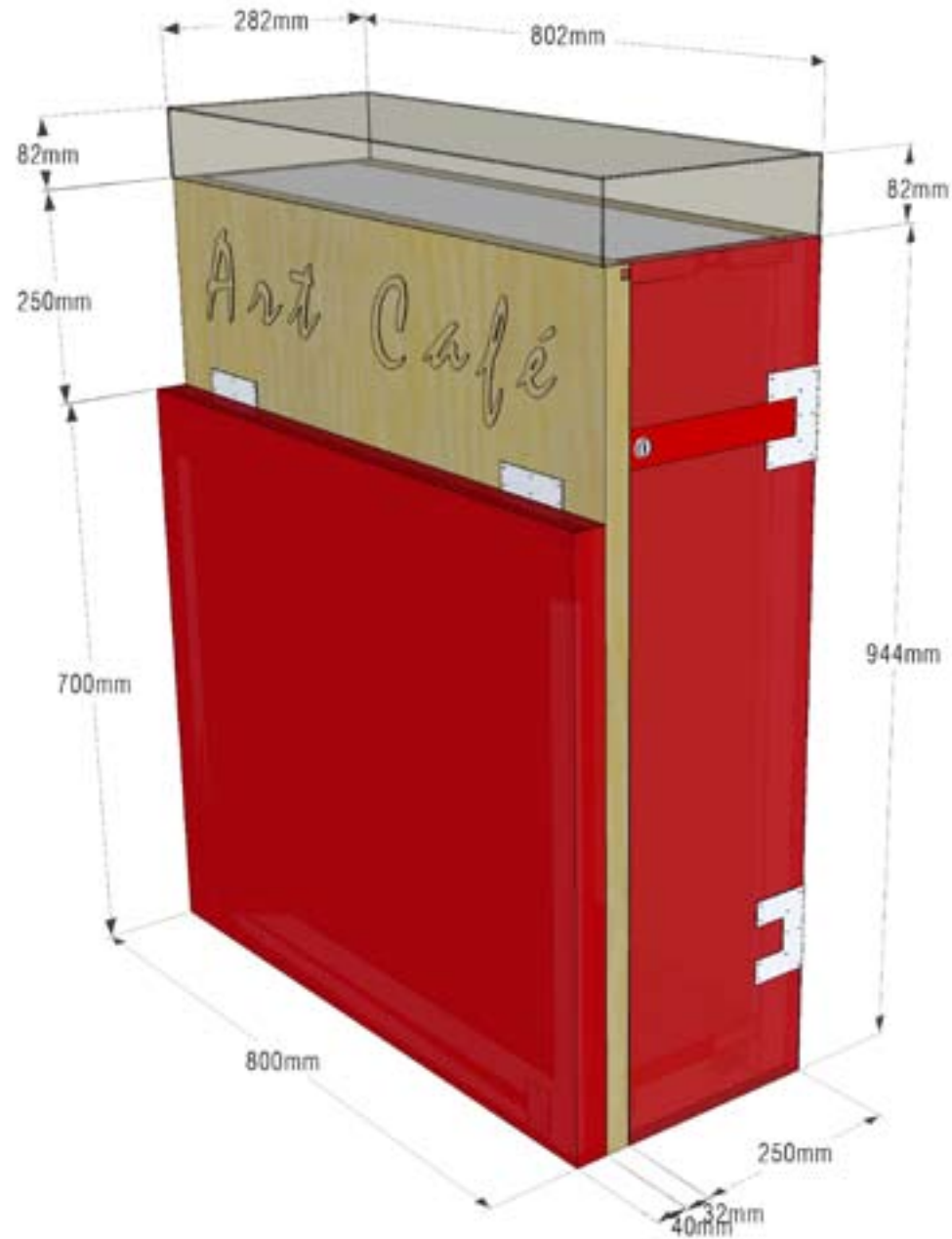


Figure 86(b): Seating Unit dimensions

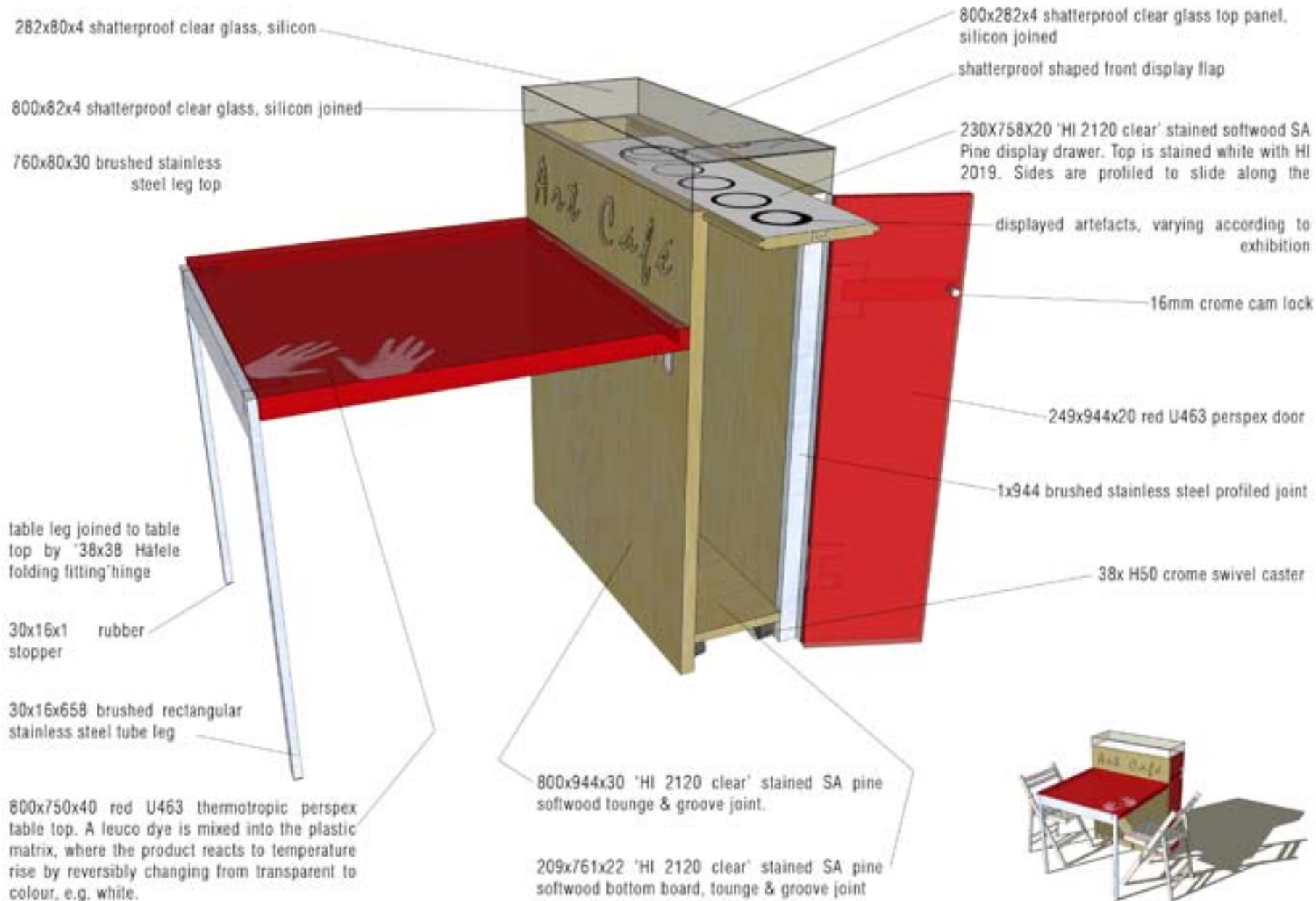


Figure 86(c): Labelled description of the Seating Unit

The column is made up of two vertical timber laths, separated by a spacer which also keeps the laths in position. The spacer, however, full fills another function, as it consists of a box, in which a LED light strip is placed. The artifacts or café products can be placed in between the laths, on top of the spacer. It will be light be the spacer box above it. Each column will keep four spacers. The columns are one component of the mezzanine system. (Figure 87)

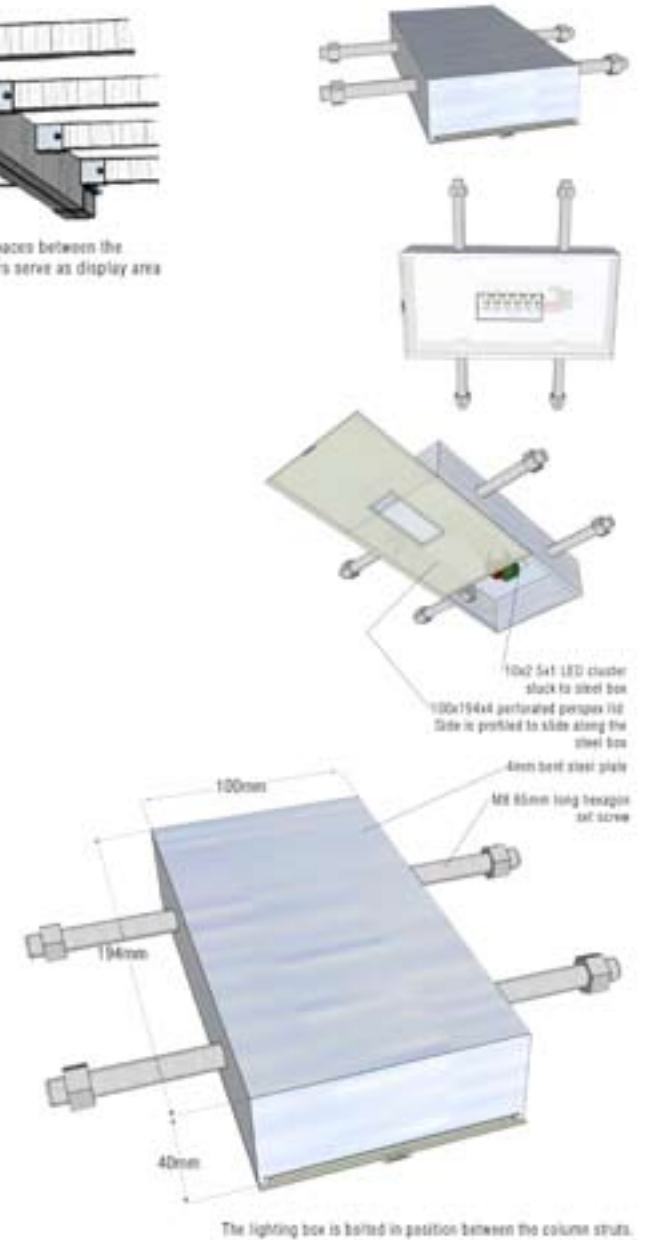
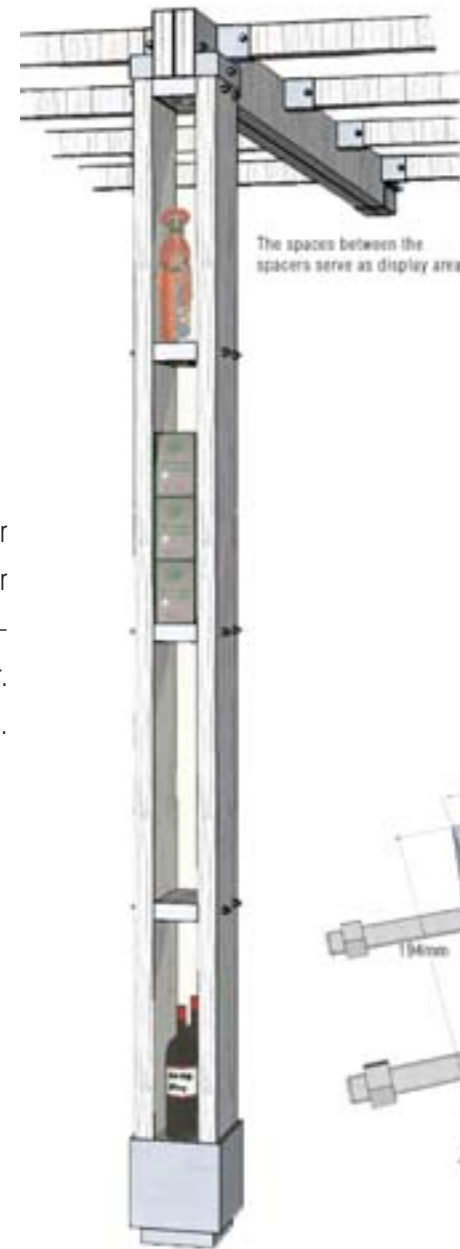
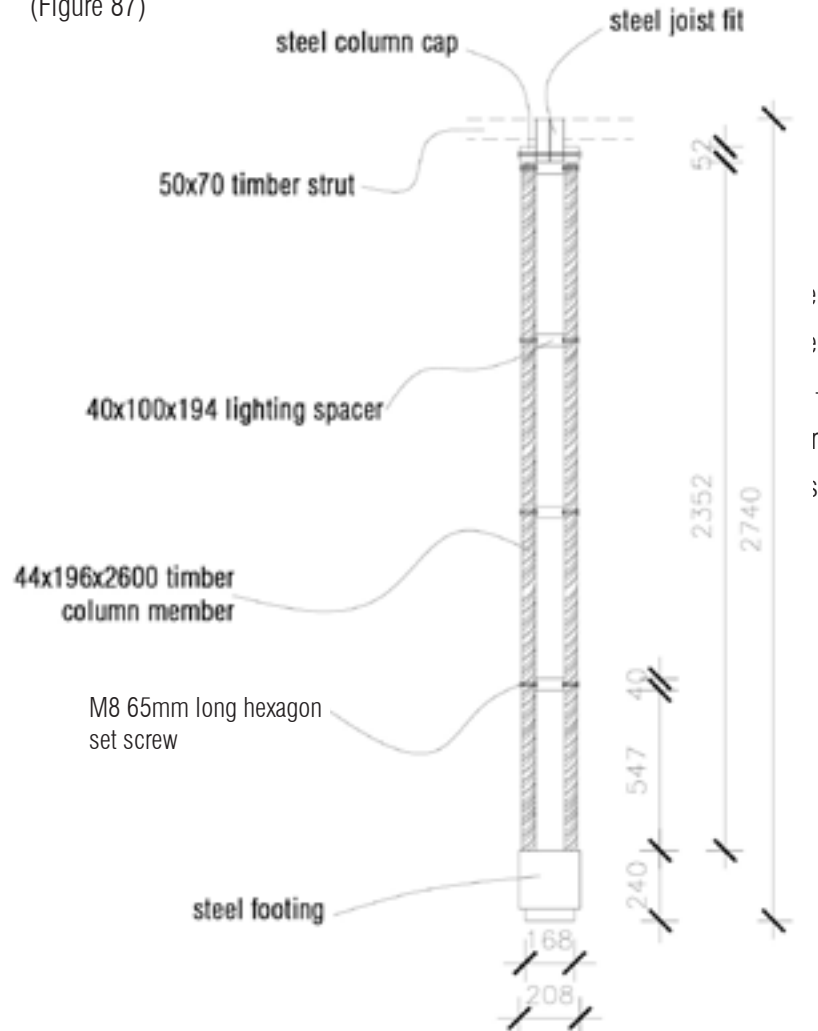
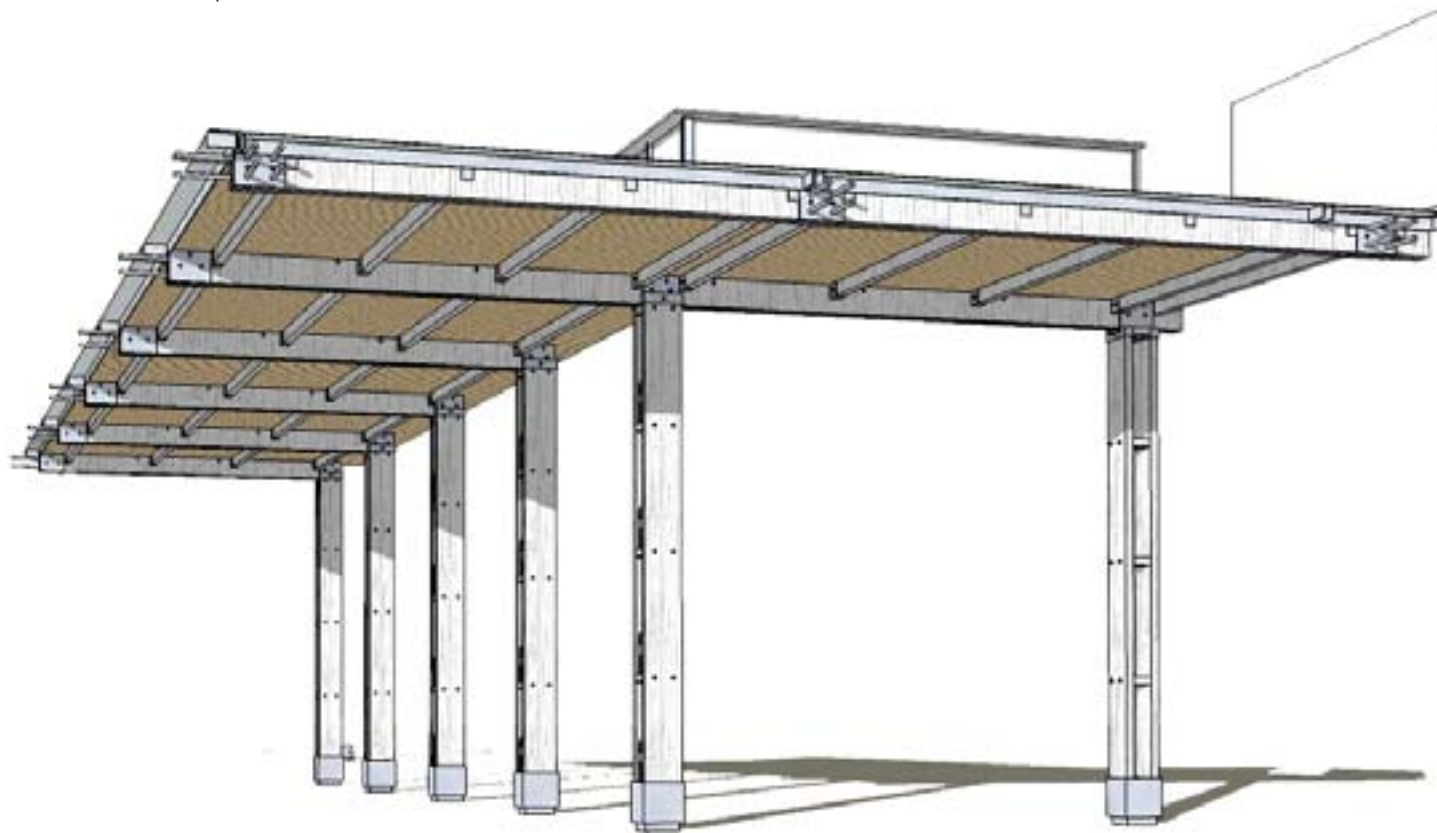
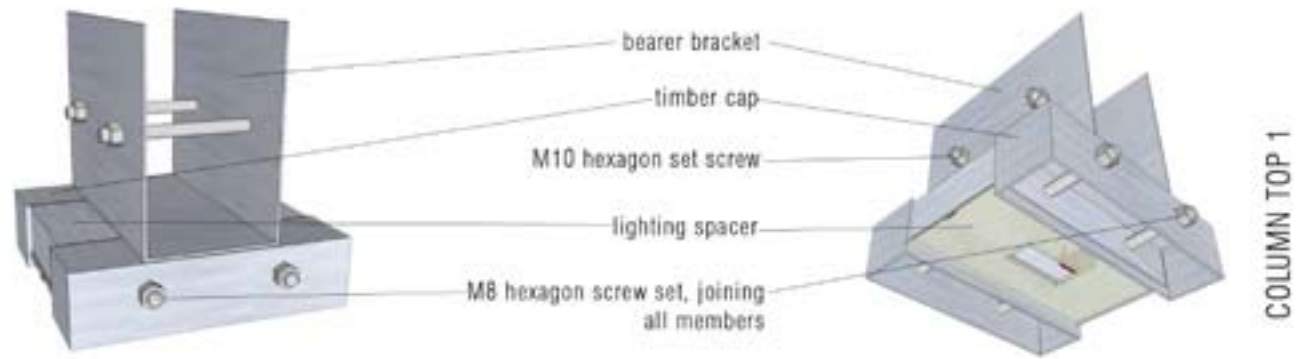


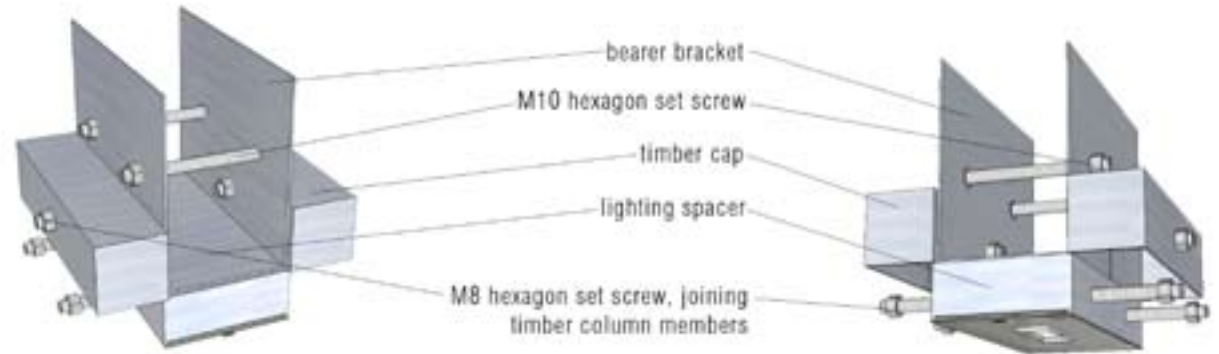
Figure 87(b): Multi-functional column spacer

The aim of the mezzanine system was to have a system, which is easily assembled in a room. Another requirement was for it to stand onto an existing timber floor, which as in this case, is ventilated underneath- i.e. hollow. Each column standing on the existing timber floor should therefore be supported properly from underneath. This is only possible when the columns stand on top of the existing piers. The spacing of the columns therefore follow the grid of the piers. The new mezzanine system responds to the old, already existing system. Brackets slot on top of the columns, into which horizontal laths fit. Cross brack-



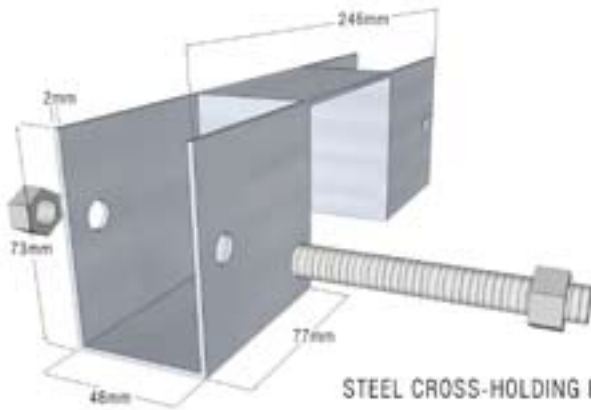


COLUMN TOP 1



COLUMN TOP 2

Different column tops are provided for the different column orientations. The timber 'bearer' changes direction.



**STEEL CROSS-HOLDING BRACKET:** holds struts in position, slots over timber bearer. The cross-holding bracket is bolted to the timber bearers.

Figure 88(b): Labelled column tops and cross bracket

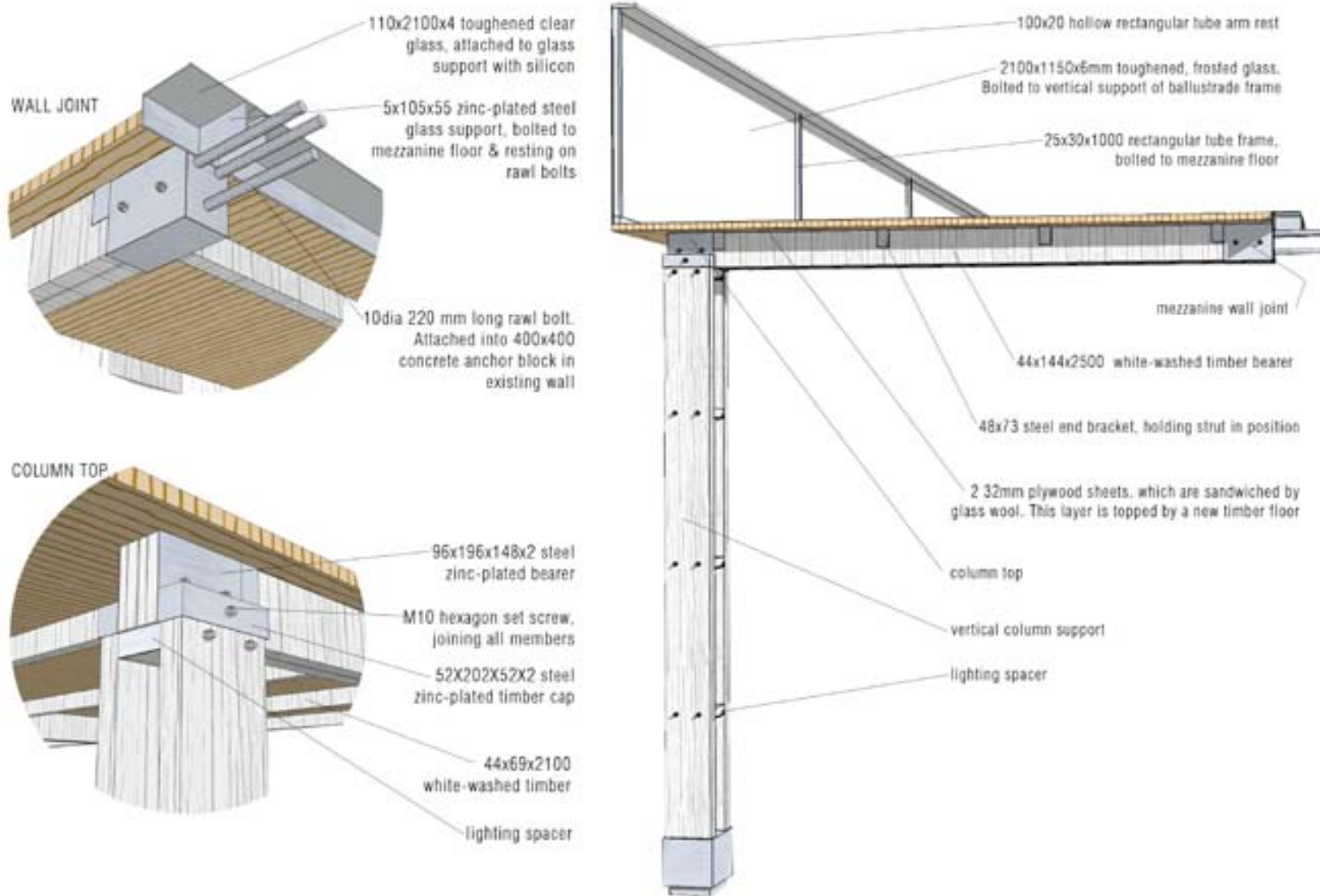
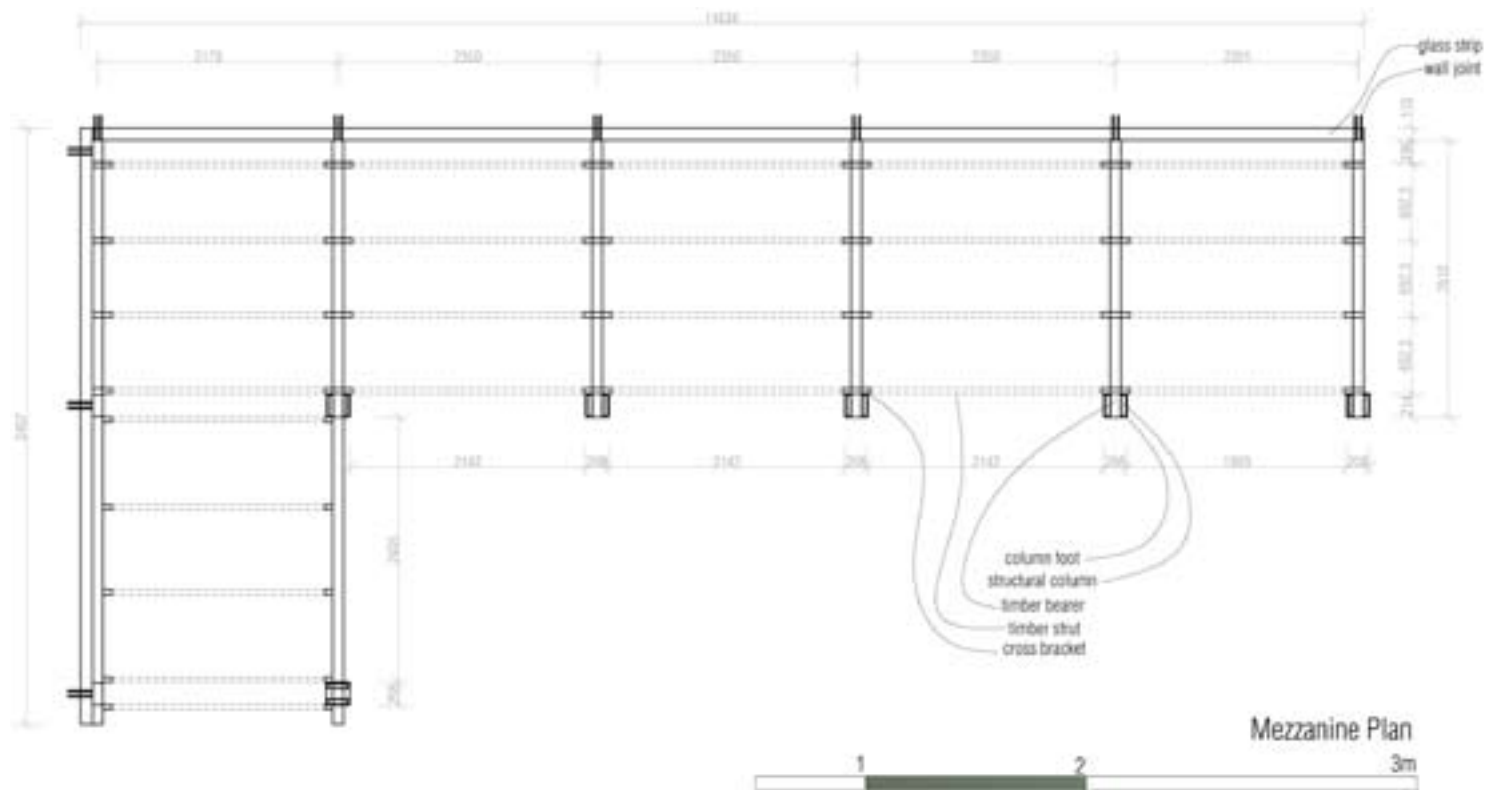


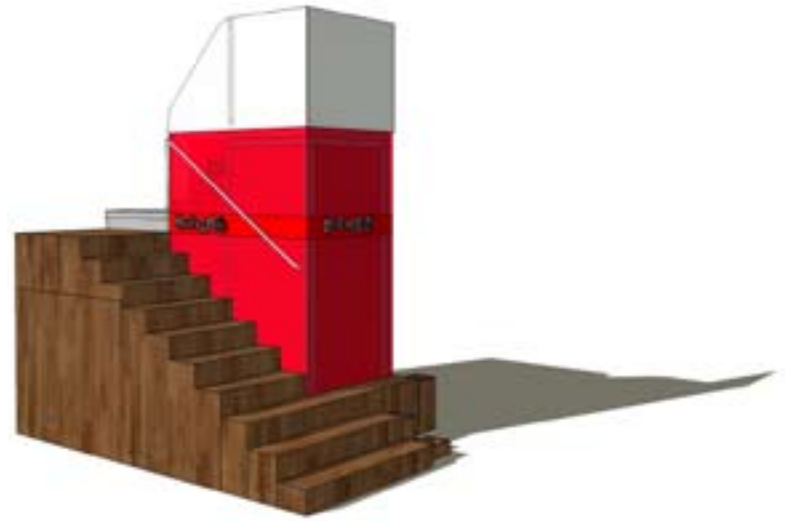
Figure 88(c): Labelled mezzanine system





refrigerators etc. The staircase is a light overall weight, so it 89a-d)

Figure 88(d): Plan of assembled mezzanine system in coffee shop



While the staircase leads up to the mezzanine level, the space below it is used for storage purposes in the café kitchen. The bottom three treads serve as display surface, whilst they also function as drawer space. The act of moving up vertically is emphasised by having the staircase in front of the street window, where the passerby's will see the legs moving almost out of the building. To the kitchen's



Figure 89(b): Back of staircase, showing storage facilities

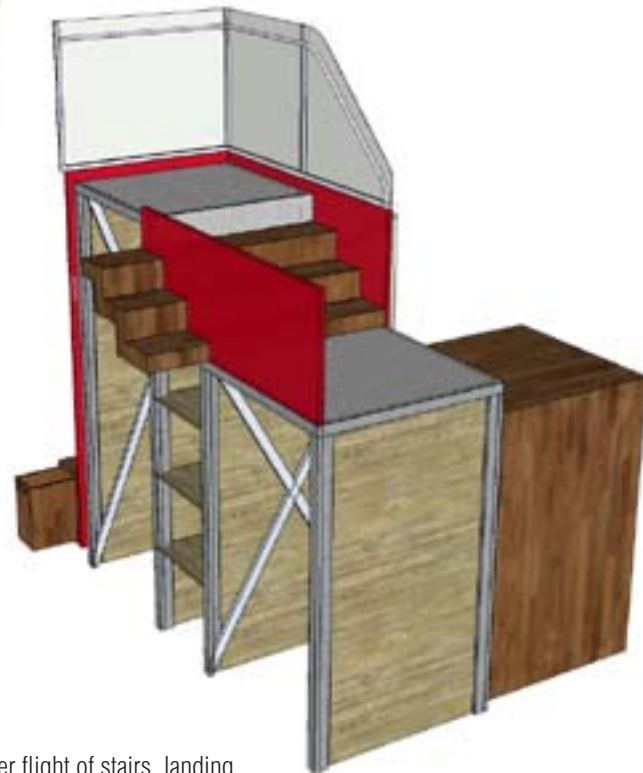


Figure 89(c): Upper flight of stairs, landing

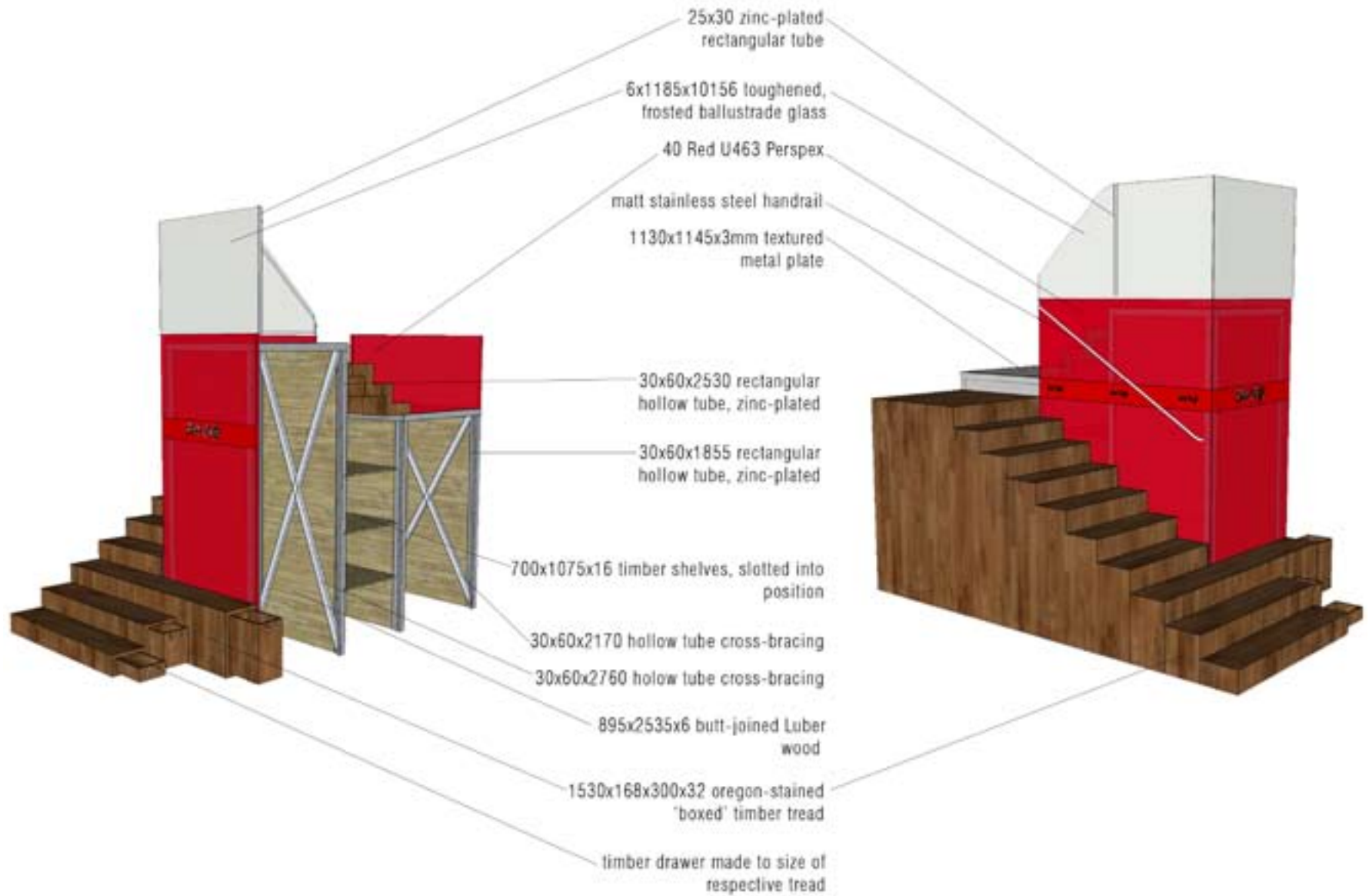


Figure 89(d): Labelled Art Café staircase

The side wings of the southern façade are opened up so as to allow communication from the street side to the interior (Figure 90d). Activities happening inside will lure the passerby in. The façade is opened up by opening up the existing recesses along the exterior wall (Figure 90c). A later added window to the west of the main entrance will be replaced with the new 'recess cover'. As the openings will be on the southern, therefore colder side of the building, glass covers are added which have a warm hue. To emphasise the old and the new time layer, the proposed recess covers will appear to float in position, thereby touching the building only lightly. The recess covers slope down at the top, preventing water collection. The front glass panel slopes inwards, avoiding water to trickle down along it (Figure 90a). Once the water flows off the recess cover, it is absorbed by a gravel bed below it. Ventilation is allowed for by the air gap between the wall and recess cover (Figure 90b).



Figure 90(c): 'Recess cover' on front facade

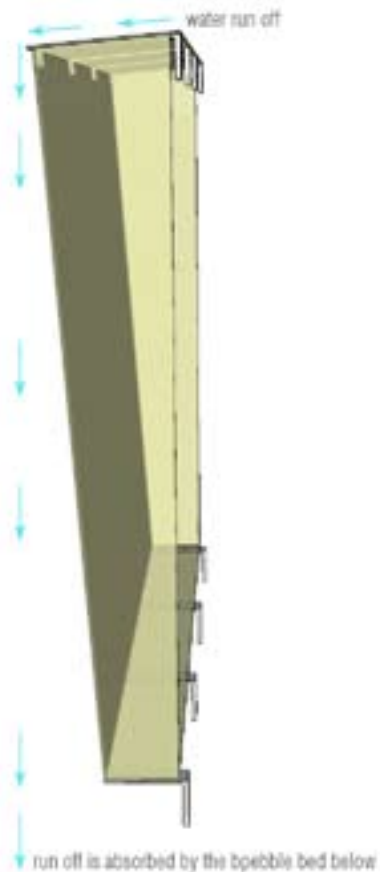


Figure 90(a): Diagram showing water run off of 'recess cover'

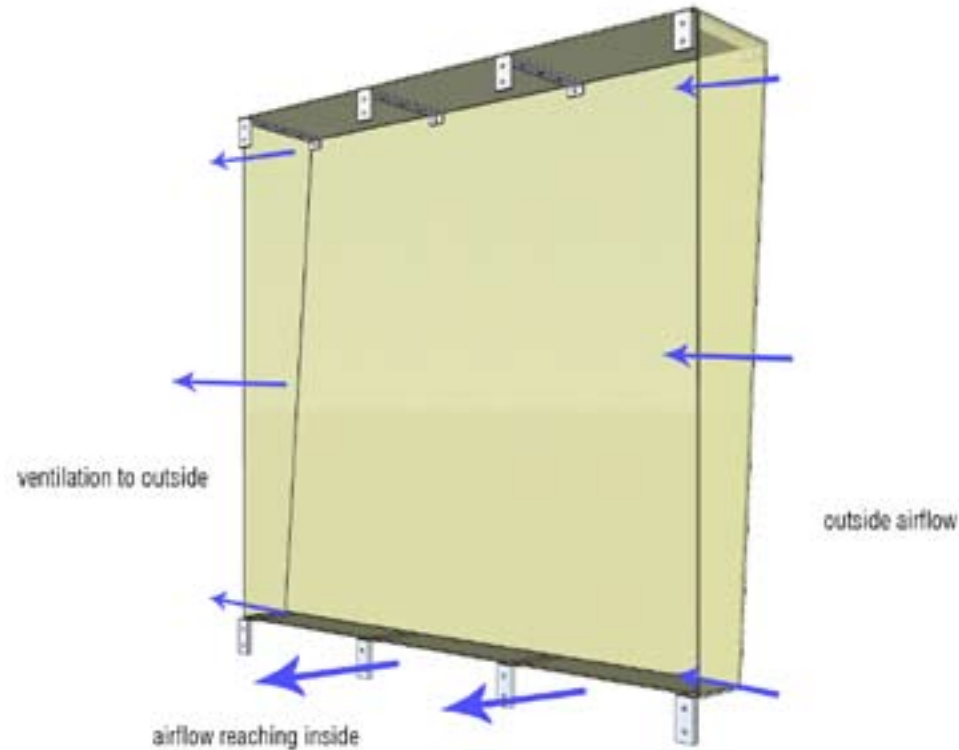


Figure 90(b): Ventilation diagram of 'recess cover'

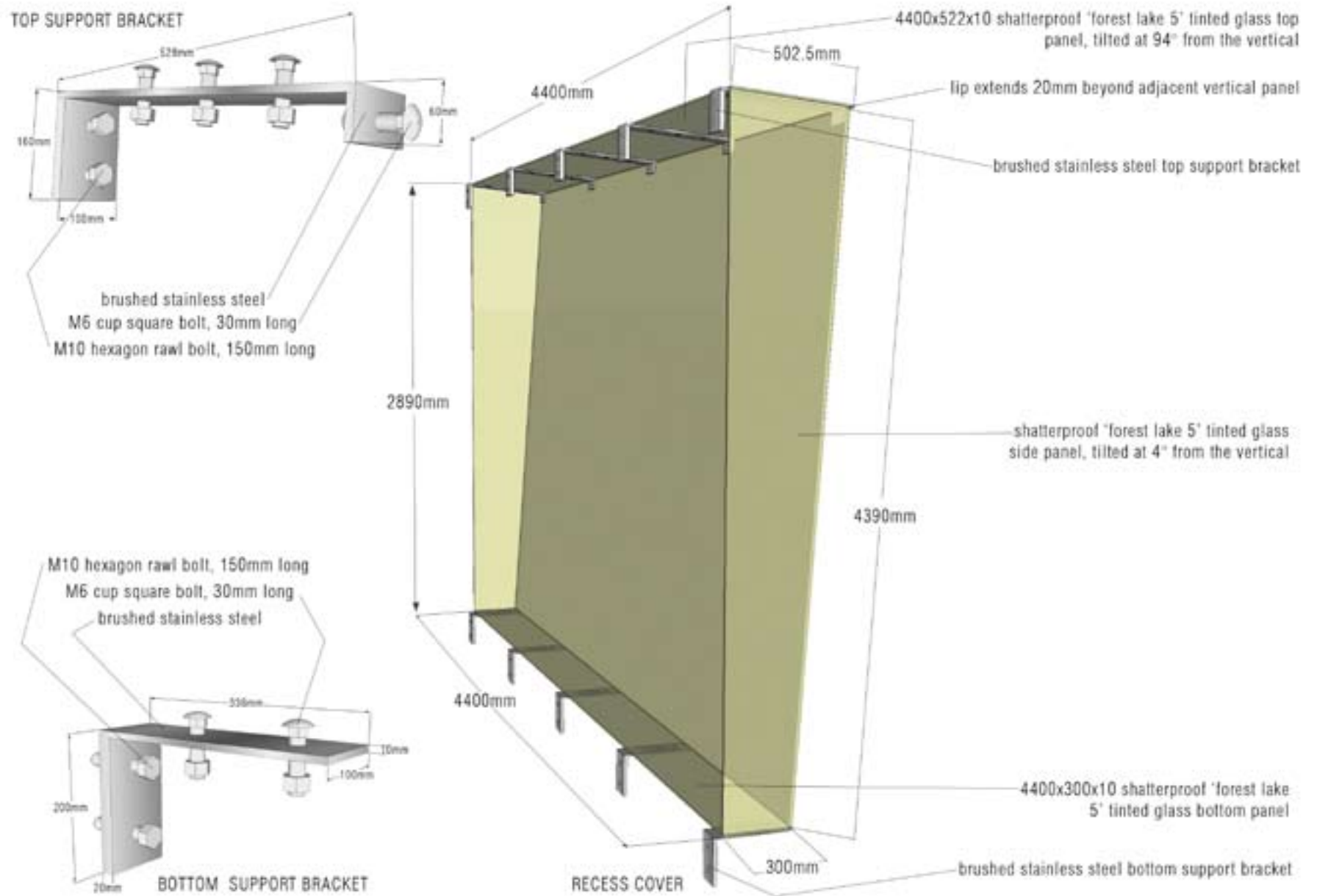


Figure 90(d): Labelling of the 'recess cover'



Figure 90(e): Enhanced communication between the exterior and interior

# 6

## TECHNICAL RESOLUTION

6.1 Baseline Document

6.2 Acoustics

6.3 Lighting

6.4 Fire protection

6.5 Services

## 6.1 BASELINE DOCUMENT

The Sustainability Building Assessment Tool (SBAT) is used to assess the sustainability of the building in terms of the building's performance. Three main categories; namely, social, environmental and economical; make up the criterion to be investigated. The proposed centre will respond to the SBAT, as well as the National Building Regulations (NBR).

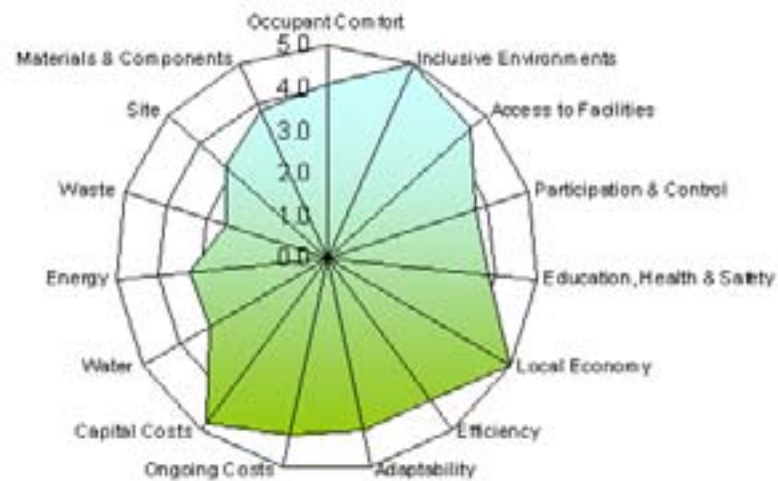


Figure 91: The calculated sustainability of the proposed project. The average building performance is 4, which is fully acceptable as the building is re-used.

### 6.1.1 Social Performance

#### Occupant Comfort

The aim is to have as much natural light as possible filling the interior, either through the courtyard, or from the outer sides. By opening up the walls (eastern and southern) and removing the paint from the clerestory windows, sufficient natural light will enter the interior during the day. Dimmable, energy-saving

electrical lighting will be used during the evening activities. Not only will the amount of natural daylight be improved, but the efficiency of natural and cross ventilation will be improved as well. The existing clerestory windows will allow hot air to rise and escape. The goal is passive ventilation, whereby little energy is needed to achieve a lot. (Figure 92) The intensity of ventilation and light influx will be controlled by adjustable screens. In other words, each building user will easily be able to mechanically adjust his/her space to suit his/her personal thermal comfort. If possible, mechanical ventilation will be limited to the kitchens, café and toilets.

Inside the building, the audible sounds change from traffic noise in the south of the building to a tranquil, bird-chirping environment in the north. Acoustic panels will ensure ample sound insulation from the noise in the music rooms and from the street side for the rest of the building. The audible sound relates to the percentage of direct openings to the sound. In turn, the openings allow for viewing of the adjacent landscape. Views are created out onto the streetscape and to the east. The views stimulate upliftment, entertainment and education. Nature, peace and harmony will form the main focus.

#### Inclusive Environment

A variety of transport types are at the Healing Activities Centre's disposal. A taxi rank is situated diagonally opposite the old museum building. The driveway into the centre's premises allows for a pick-up zone straight from the door step. The Belle Ombre train station is situated four blocks to the west from the site and the Pretoria station lies just over 2 km to the south of the site. Buses and taxis pass by the chosen site regularly, allowing for ample transport opportunities. Public parking is allocated directly to the west of the building. The walking distance from the parking site to the building is kept to a minimum.



Clear information regarding the signage itself and the placement thereof will be appropriately provided. Good colour contrast (black, white, yellow and red), the appropriate lettering (Helvetica) and size are important. Comprehensible signage will lead to the one main entrance, where orientation will take place.

– The building should stand out like an icon along Boom Street.

Prominent staircases and ramps will indicate a change in level. Tread nose treatment and contrasting colours are essential to avoid confusion and injury. All floor materials, especially on level changes, should be non-slip. Movement or orientation in and around the building will be easily accessible and understandable. All edges should be round and objects shorter than knee height

to prevent tripping and falling. For working surfaces to be accessible to all, working tops should not be higher than 750 mm.

Protruding objects inside the bathroom, for example the shower head, should be of contrasting colour. Lever handles should be used throughout, on which hot and cold water are clearly indicated. Handrails along ramps and inside the bathroom are to be provided for wheelchair users. Cupboard doors and inside windows will be of a sliding type to prevent protrusion, and all knobs should be flat and of a colour different to that of the door or drawer surface.

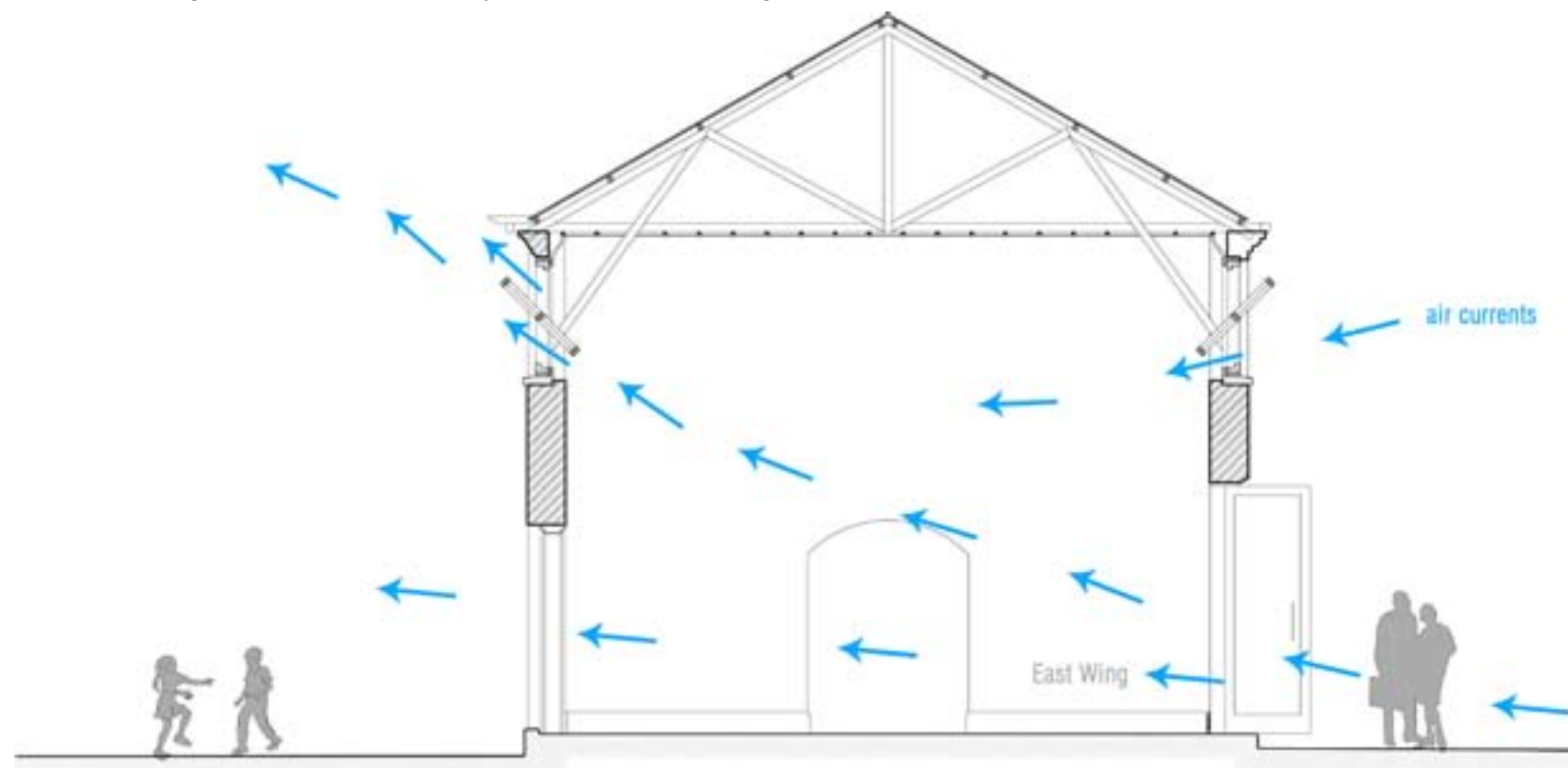


Figure 92: Passive ventilation diagrambe omitted to

### Access to Social and Economic Facilities

The Healing Activity Centre is to be kitted with internet facilities and telephone lines to allow communication via fax, phone and e-mail. The centre will also be connected to satellite, as the international meetings will be held in the seminar room.

Due to internet access in the library and at reception, online banking will be possible from within the building. In addition, the receptionist will be able to accept card payments. Outside the building, three ATMs are found along Bloed Street, and the zoo plans to install an ATM on its premises as well.

Informal and formal trading occurs right along Bloed Street and filters through to Boom Street. Vendors also trade inside a stone structure next to the zoo's main entrance. The foyer of the Healing Activity Centre will provide buyers with therapy-related items, such as aromatic essential oils.

Numerous schools are located in the vicinity of the site, making it convenient for children who have problems to come to the proposed centre (see *Chapter 2: Education and Health*). The closest school from the site is the Prinshof School for the Blind and Visually Impaired, which will be within walking distance of the centre. An intimate residential area is embedded between the Prinshof School and the east border of the zoo premises. Two residential flats are also located opposite the centre on either corner of Andries Street and Boom Street.

Opportunities for informal social gatherings inside the courtyard and the Art Café will be possible. A kiosk with benches and lawn areas is situated inside the zoo premises within close walking distance of the Healing Activity Centre.

### Health and Safety

All new materials to be used inside the building may not emit any harmful gases or cause skin irritations. Should accidents occur inside or outside of the building, the cause and frequency of such accidents should be investigated immediately. If conditions leading to the accident can be changed, they should be altered in order to prevent future accidents. Staircases or any level changes must be well-lit in order to prevent falling or tripping.

Since Boom Street is currently an unsafe environment, safety from parking to the building is to be addressed by ensuring well-lit routes. Passive surveillance will be carried out from the foyer's range of vision as well. Cameras will also be installed in order to monitor throughout the inside of the building, as well as the outside. Lighting outside and inside the building will be such so as to limit opportunities for crime. Only if necessary, will a security guard be hired to patrol the area.

### 6.1.2 Environmental Performance

#### Water and Waste Management

Rainwater will be captured from the roof and stored in a tank, after which it will be filtered to make it fit for drinking purposes. All consumable water will be provided from the collected rainwater until this supply is depleted, after which available municipal water will be used.

The courtyard is drained from all four corners. The runoff occurring inside the courtyard, as well as the grey water from the building will be used to irrigate the courtyard. All newly installed water pipes will need to be certified and approved by a specialist. Taps should be sealed tightly as to avoid leakage.

All waste inside the centre needs to be routed down to the refuse yard outside

the main kitchen. As the centre has its own private access route, waste will be picked up from the site directly, specifically at the delivery platform outside the main kitchen.

Materials impossible to restore will be classified as builder's waste. This would include broken bricks, timber pieces, broken ceilings, etc, and it will be possible to use the waste as a bulk for earth fill or to level out slope problems inside the zoo.

#### Site

The chosen building is currently deserted, qualifying as a brown field. A 100% energy and space is thus saved, as the site and project revolve around the re-use of an existing building. The building will not be negatively affected by adjacent buildings, regarding the air flow and sunlight penetration.

Half of the courtyard will consist of lawn, whereby the users will sense the reconnection to nature. A certain percentage of plants in the therapeutic garden will be edible and even curing. In order for the courtyard garden to be accessible and presentable at all times, it will need to be managed through gardening services. This would include pruning, organic insecticides and general up keep.

#### Energy

The existing building is completely re-used, therefore saving a great amount of capital energy. Renewable and low embodied energy materials are used throughout the design process in order to keep the overall energy usage down. The timber to be employed will be standard SA pine, thereby avoiding unknowingly depleting a special forest.

#### 6.1.3 Economic Performance

#### Local Economy

All new additions to the building will be contracted out to local companies (not further than 50 km from the site), so as to boost the local economy. Such suppliers, for the completion of the project would have to focus on timber, glass, steel and polycarbonate. The contractors employed will, in addition, have to be able to maintain and repair where and when necessary. Where possible, materials that require little or no maintenance will be used. Local educational and therapeutic manufacturers will be asked to supply the necessary furniture and fittings to the centre.

#### Efficiency

It is aimed for the building to function at 80% capacity, which is possible due to the variety of activities throughout the day and into the night. Weekend tournaments will further support in using the building to its full capacity.

The therapy-related part of the building will be occupied for 12 hours during the day and for three to four hours in the evening. A total of 15 to 16 hours will be spent in the building per day. However, the accommodation wing will be occupied for longer periods. The accommodation facilitators will live in the building on a permanent basis.

As the building houses different functions, different space provisions will be provided. Some activities will be physical, requiring more space; while other sessions will comprise group forms, which require less space per person.

The design of the new furniture and fittings to be placed inside the building should react to the relationship between the material and component size should be optimal in order to minimise wastage (see Product Design: Mezzanine System).

### Adaptability

All spaces inside the building have ceiling heights of 3 m or more, which allowed for efficient spatial changes. Current load-bearing walls separate the rooms into big workable spaces. Partitioning is created through insertion of the mezzanine system, which suggests a different space quality beneath it. It is built on a modular basis, where the required area to be covered can be built to suit individual needs. Also, the usable surface area is increased. The inside room spaces can be connected to the courtyard outside, as the activities stretch out into the courtyard. Inside furthermore becomes outside when performances are held.

The design of the furniture allows for it to be easily configured for different usages. The seating units can accommodate between two and three persons per unit, while two units can be joined to seat four people. The seating unit is multi-functional (see Product Design: Seating Unit).

### Ongoing Costs

The entire workforce operating inside the building will receive a manual on the efficient operation of the building. Temperature, light and ventilation control are core issues.

The building will have accessible metering- and performance system, through which water and electricity usage, and waste and accident figures can be monitored and compared. By using the building efficiently, the ongoing costs are kept to a minimum.

Enduring costs will also be made up of the staff's monthly pays. This however is the centre's cost, not a building cost. Cleaning aids and the general maintenance

of the building will contribute to ongoing building costs.

Technological services, namely internet connections, satellite connection, telephone and fax services, projectors, screens, etc which are used throughout the building, will have to be updated and improved regularly.

## 6.2 ACOUSTICS

A hearing conservation program must be implemented when employees are exposed to 85 dB or more in an 8-hour day. The typical restaurant operates at an 80dB level, but some can reach as much as 110 dB! The sound levels from the kitchen in the Art Café should be kept to a minimum by using quiet machinery. In addition to that, the mezzanine bottom floor layer consists of 32mm plywood sheets. This material reflects the high frequencies that carry information to the audience while absorbing low base sounds that generate noise. By adding glass wool in the cavity between the plywood layers, low frequencies are absorbed. The existing plastered brick walls (450 mm thick) also contribute to good sound insulation from the adjacent rooms.

It is also important for pavilion roof in the courtyard to have a good acoustical performance. Sufficient sound must be carried from the stage to the listener and not get lost in the courtyard before reaching the listener. This is achieved by the pavilion roof, which slopes up towards the listener. The sound from the stage is thus directed up and away from the performer. The stage screens furthermore concentrate and direct the sound to the listener. In addition to that, a speaker system can be installed, if wished by the audience.

40mm thick, 40kg/m<sup>3</sup> Fibretone sheets will alternatingly clad the seminar room. These sheets absorb all superfluous frequencies, allowing for comfortable acoustics.

The same material will be used in the 'Healing Music' room and Dry Art room. All rooms on the mezzanine floor, where instrument practicing, choir practicing, etc will take place must be cladded with 32mm plywood sheets, sandwiched by glass wool. Fibretone sheets will be behind the plywood layer, ensuring that no sound can escape the practise rooms, causing noise disturbance.

Comfortable conversation and storey-reading will be assured by building a 'play cubicle' from the swinging doors on the west wall in the Dry Art room. The same material as for the Art Café will be used, where the necessary frequencies are reflected allowing comfortable conversation, while the unwanted, noisy frequencies are absorbed.

### 6.3 LIGHTING

The Healing Activities Centre will mostly be used during the day, where natural light plays an important role. Electrical lighting will be necessary during the evening facilities, the guest accomodation wing and caretaker's accommodation.

For artificial lighting in the centre low voltage dichronic halogen lamps, tungsten halogen lamps, LED lamps and fluorescent lamps are used. LED clusters are used in the spacer box as these give off little heat. This is vital as the display on top of the spacer may not heat up. Also, LED clusters are energy efficient and give off the required amount of lux.

Low voltage and tungsten halogen lamps will be used in the exhibition area as these lamps enhance the spatial light quality and colour rendering. Cool white energy-saver fluorescnet bulbs are placed inside the wall lights. (Figure 117-119).

### 6.4 FIRE PROTECTION

Little evidence of proper fire fighting equipment is found in the building. Later added sprinklerheads are placed along some pressed ceilings, but it is doubtful wether these are still in working condition. No additional fire extinguishers are to be seen anywhere else in the building.

New preventative measures and fire equipment should be included in the Healing Activities Centre. Fire hose reels and 4.5kg carbon dioxide portable fire extinguishers will be provided at strategic points and will be visible to the user by clear signage. All have to comply with the SABS 543. The existing timber floor in most of the building is a great fire hazard. A new sprinkler system should be installed throughout the entire building. All materials in the centre should have a minimum fire stability of one hour.

### 6.5 SERVICES

As the existing building is only supplied with very limited wet services, a new sewerage and water system will be installed into the building. The municipal sewer connection is on the western side of the building, to where the off flow will be connected. (Figure 93)

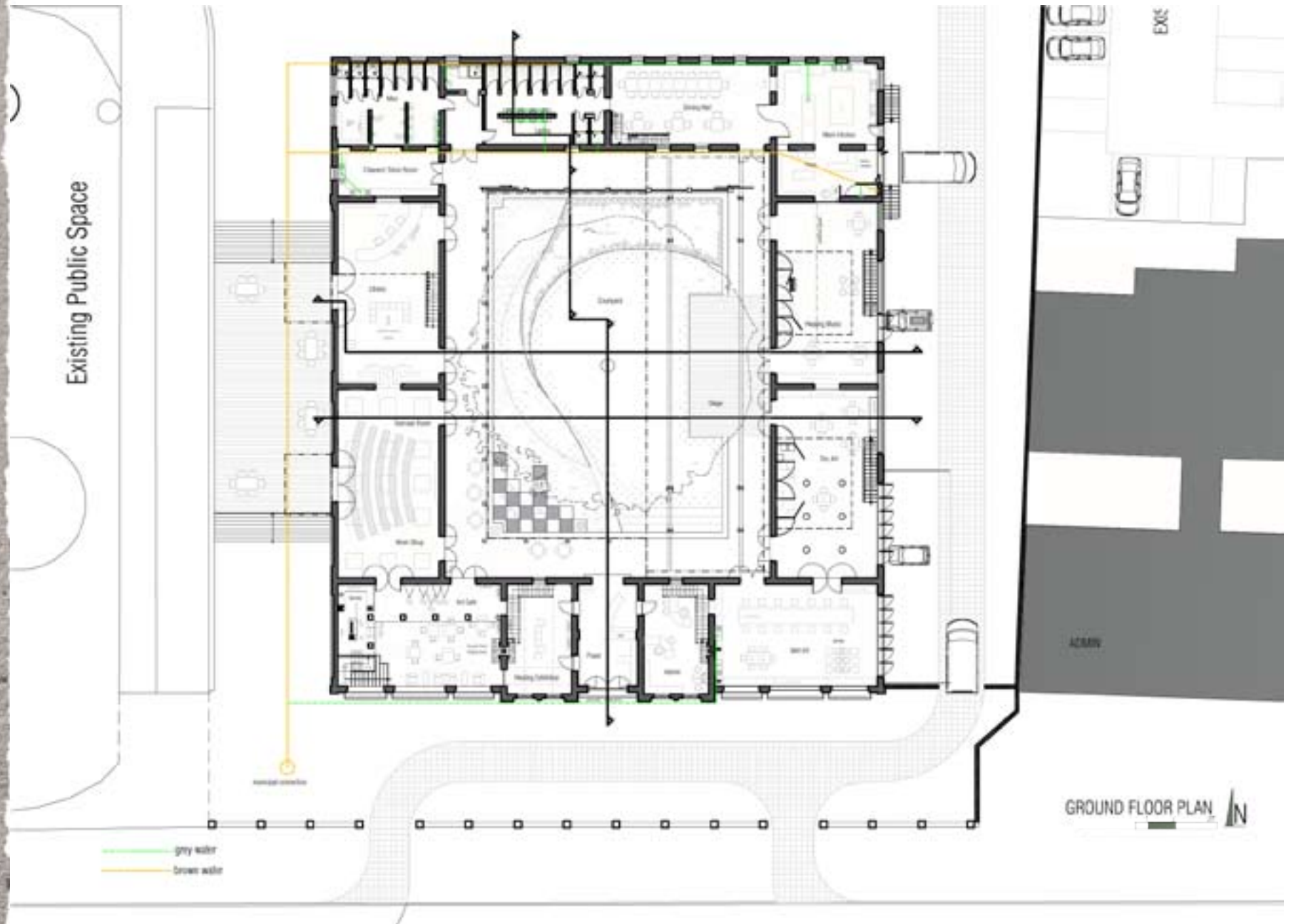


Figure 93: New Sewerage Plan

# TECHNICAL DRAWINGS

Original Plan (Time Layer 1)

Altered Plan (Time Layer 2)

Proposed Plan (Time Layer 3)

NOTE: The drawings of the Original Plan and Adapted Plan are combined on the elevations and sections to follow. The Second time layer (beige) is added to the original.

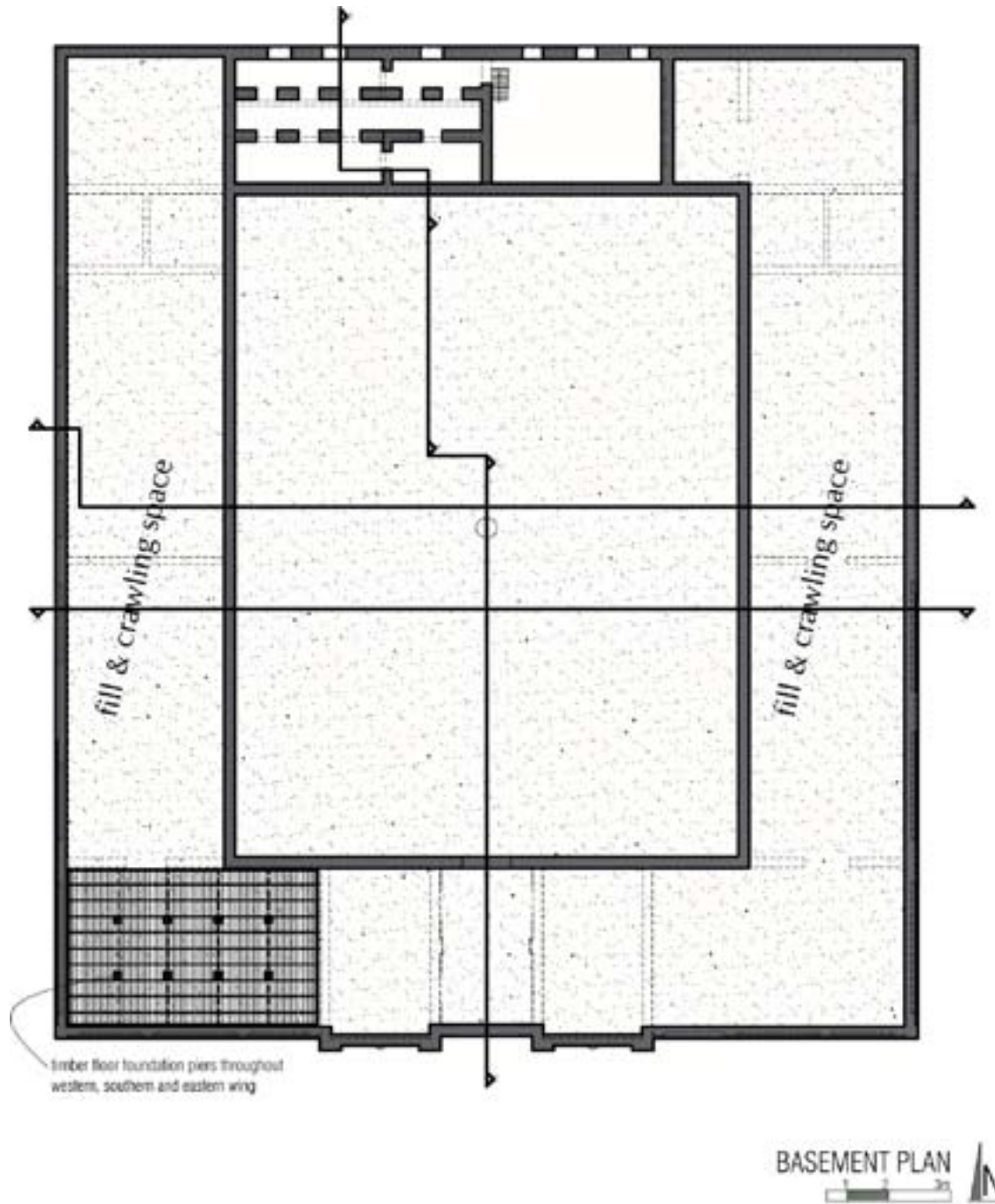


Figure 94: Original Basement Plan



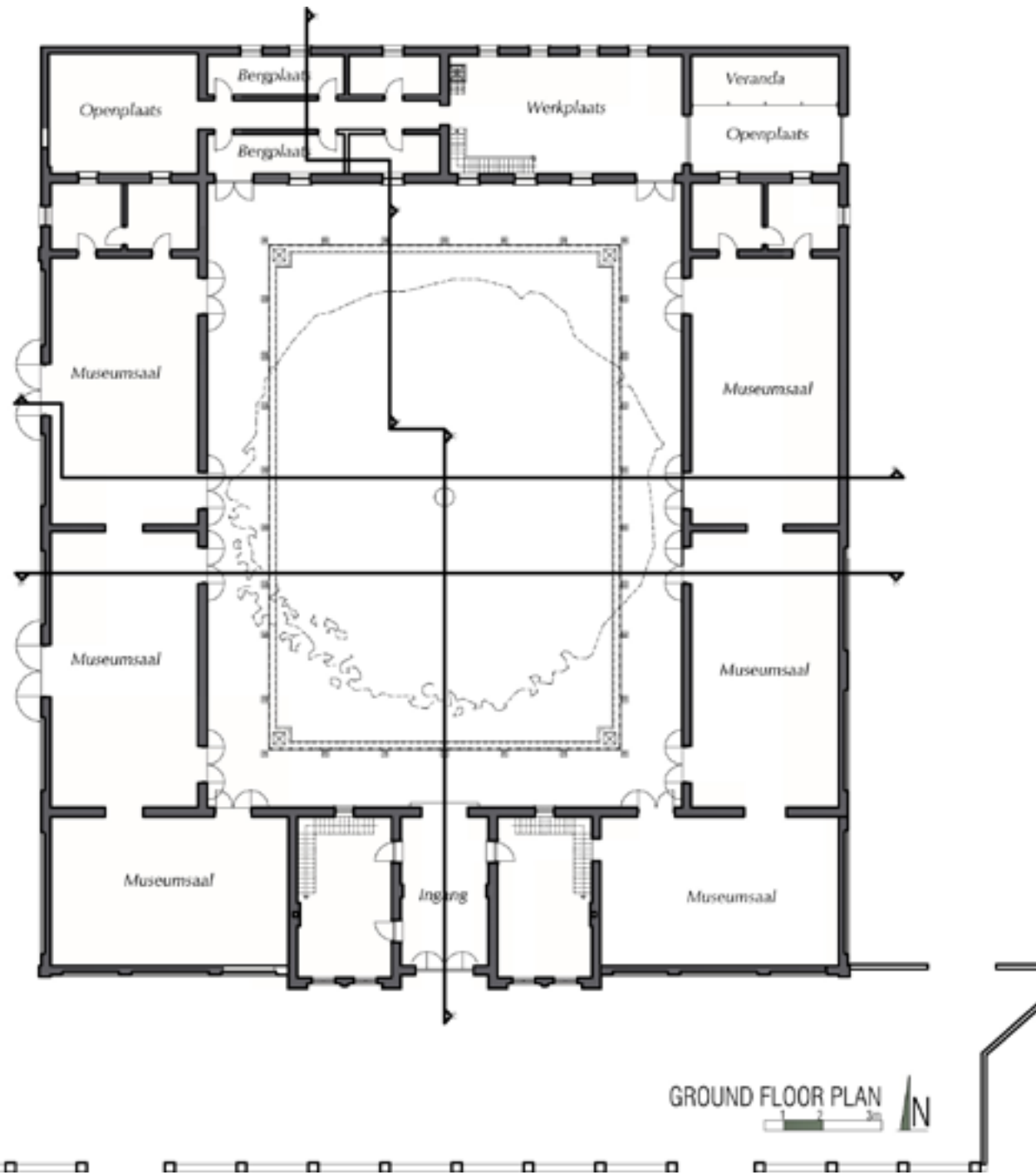


Figure 95: Original Ground Floor Plan

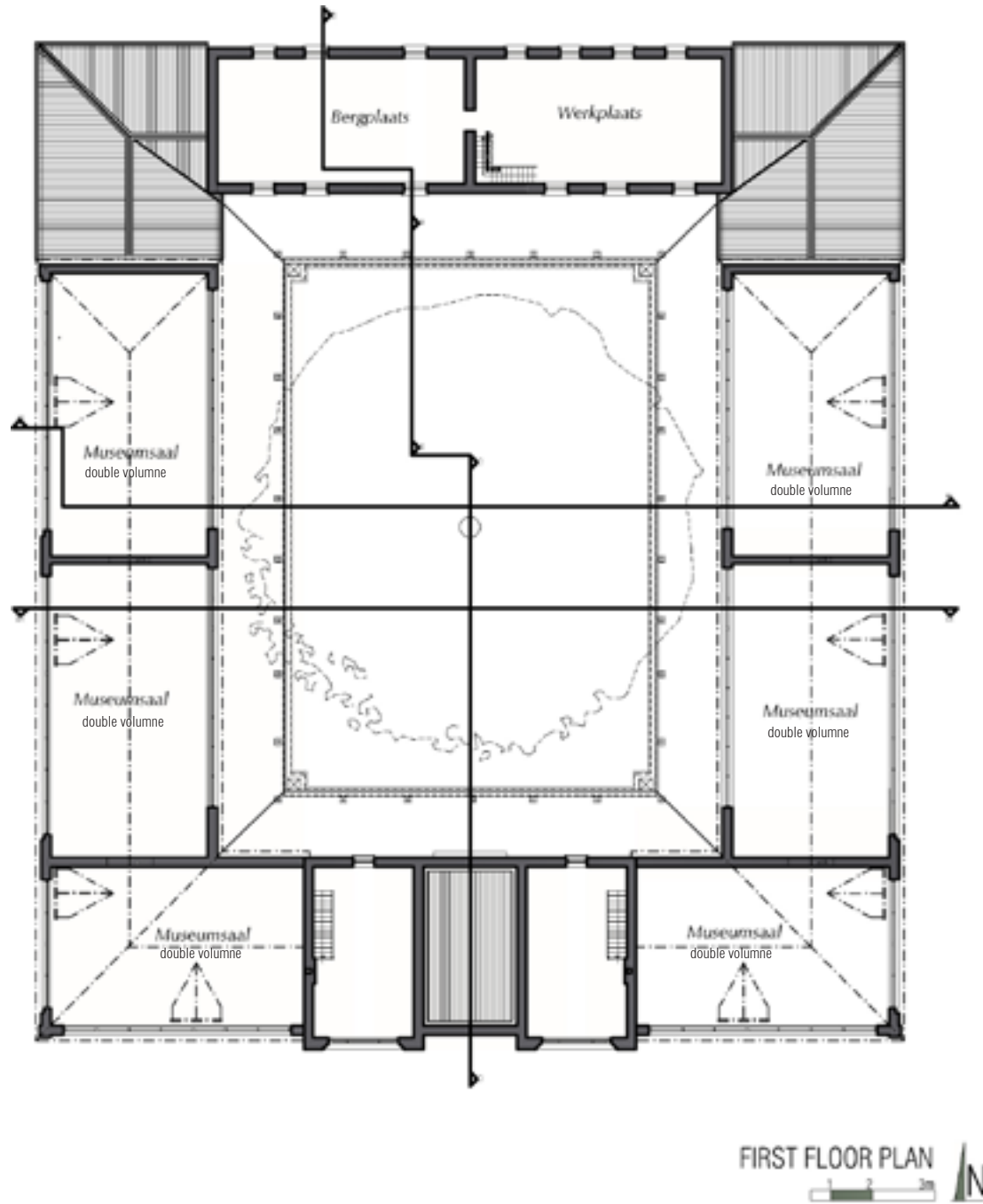
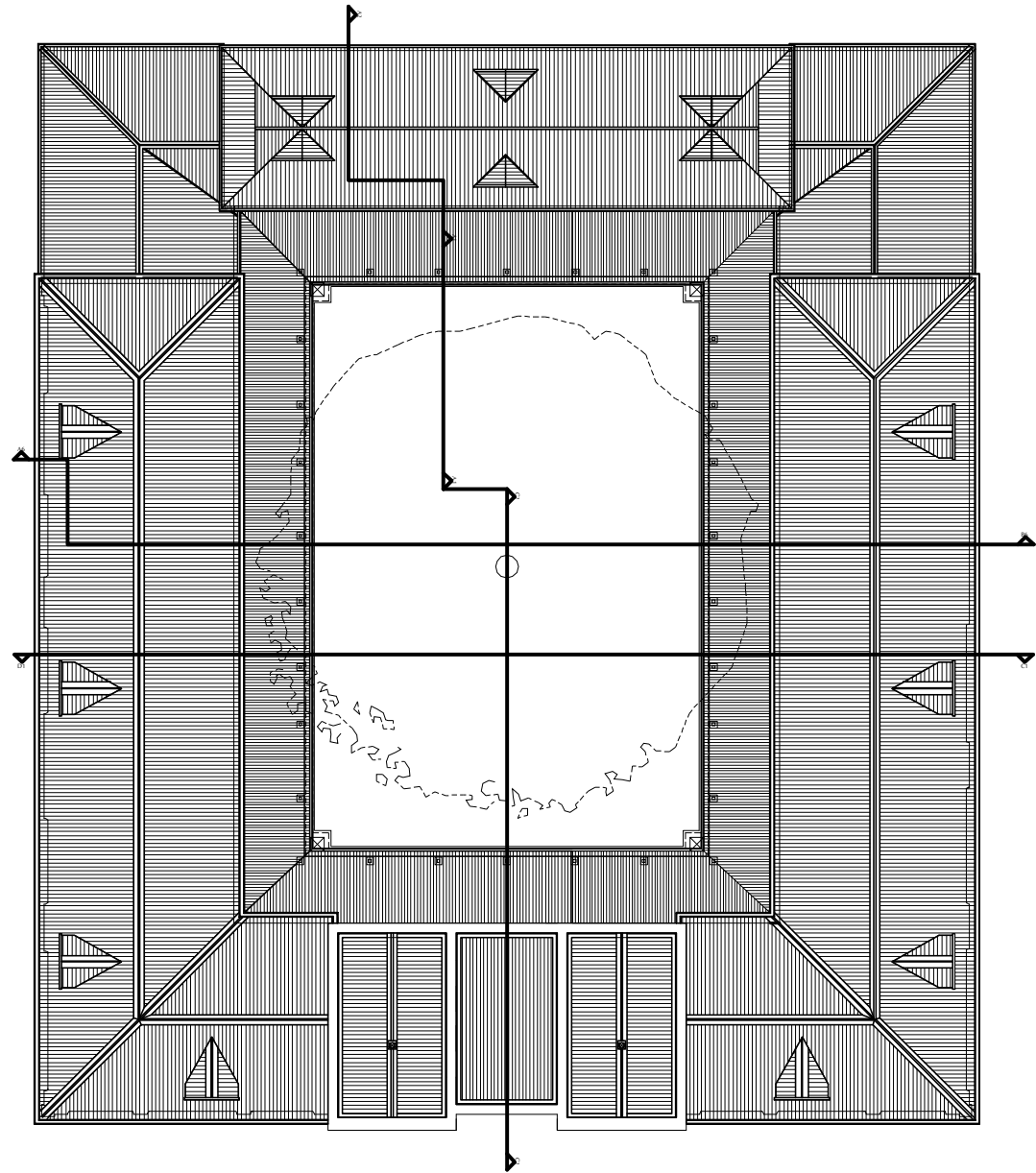


Figure 96: Original First Floor Plan



ROOF PLAN  
1 2 3m

Figure 97: Original Roof Plan

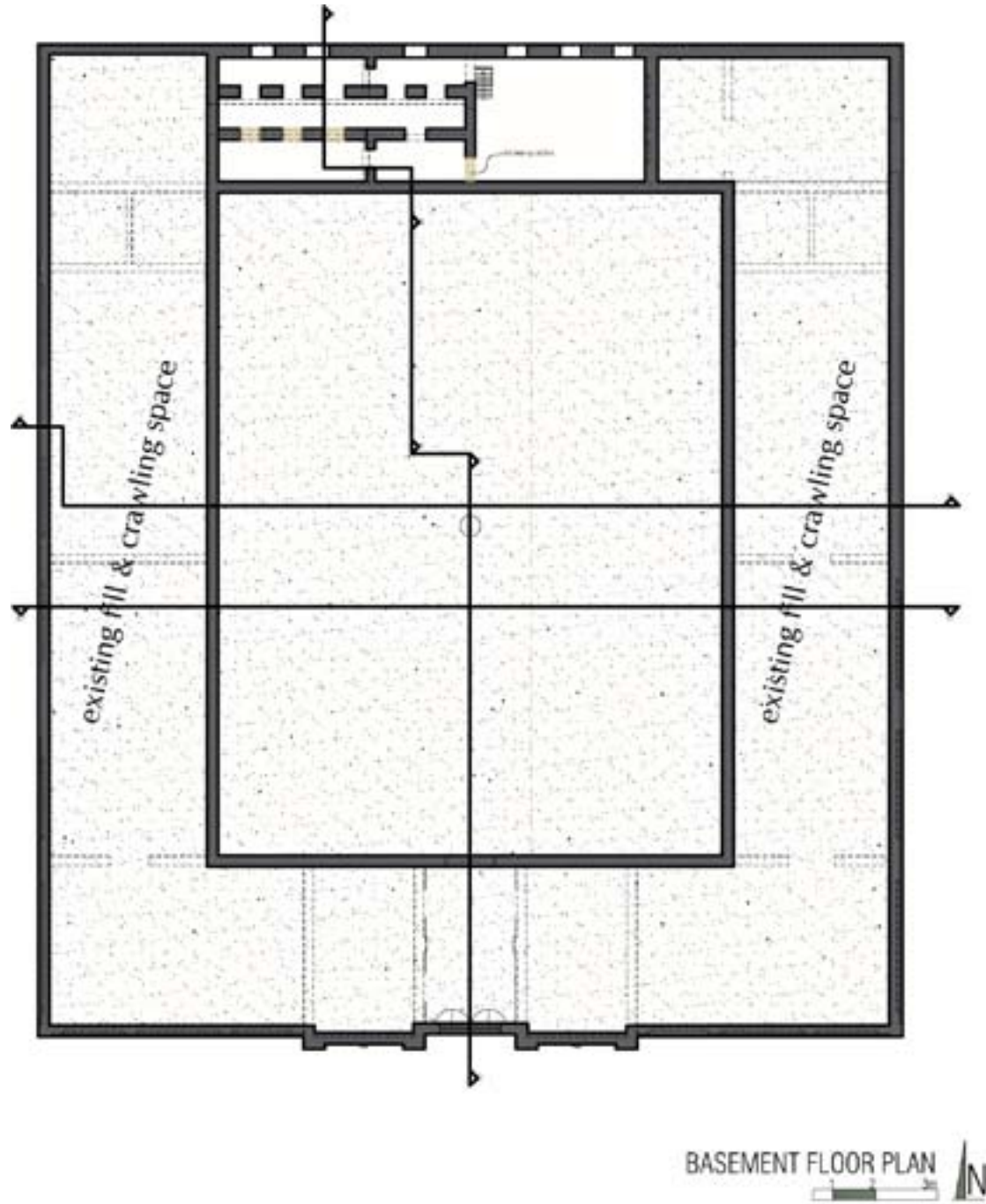


Figure 98: Altered Basement Plan

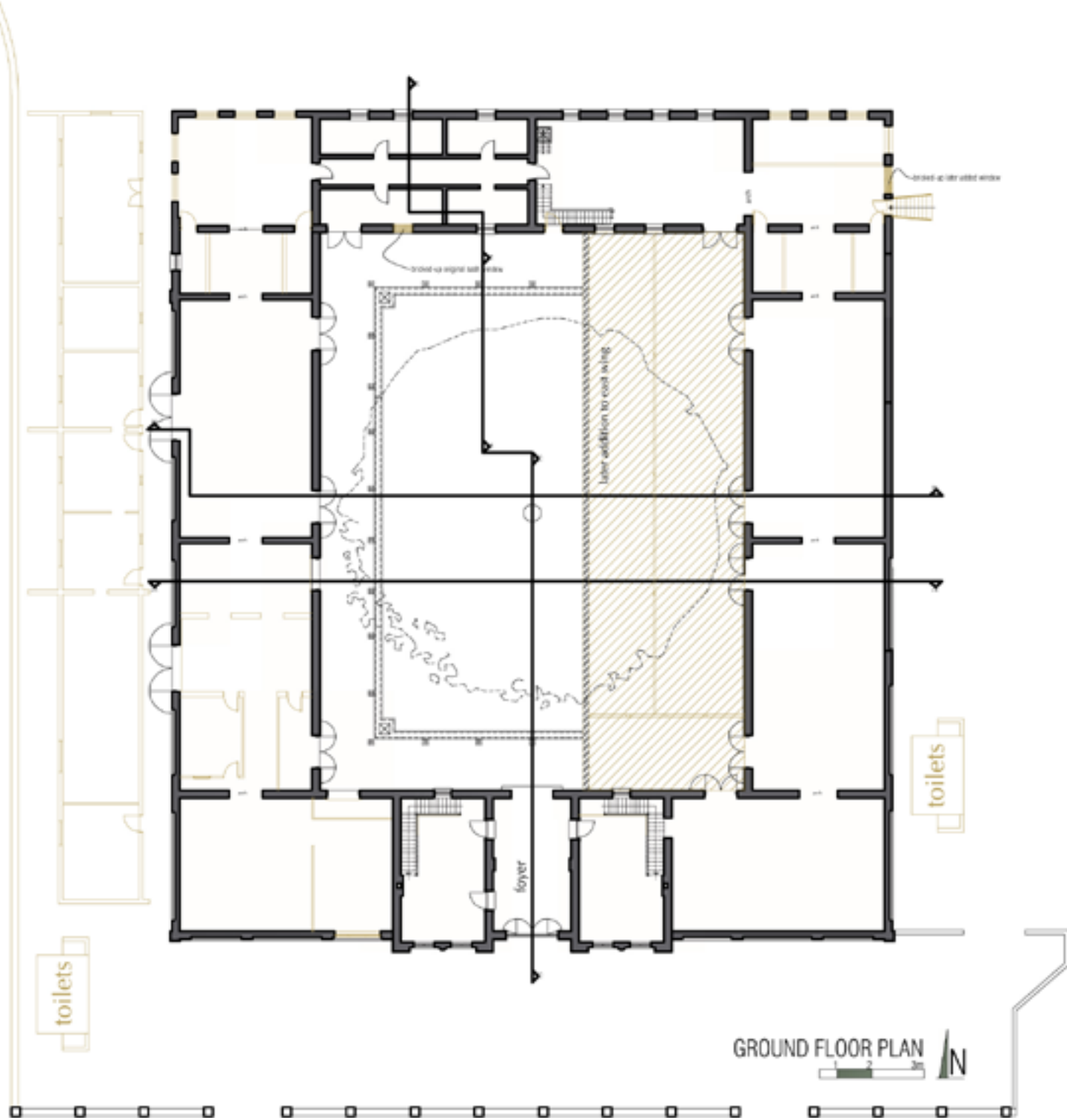


Figure 99: Altered Ground Floor Plan

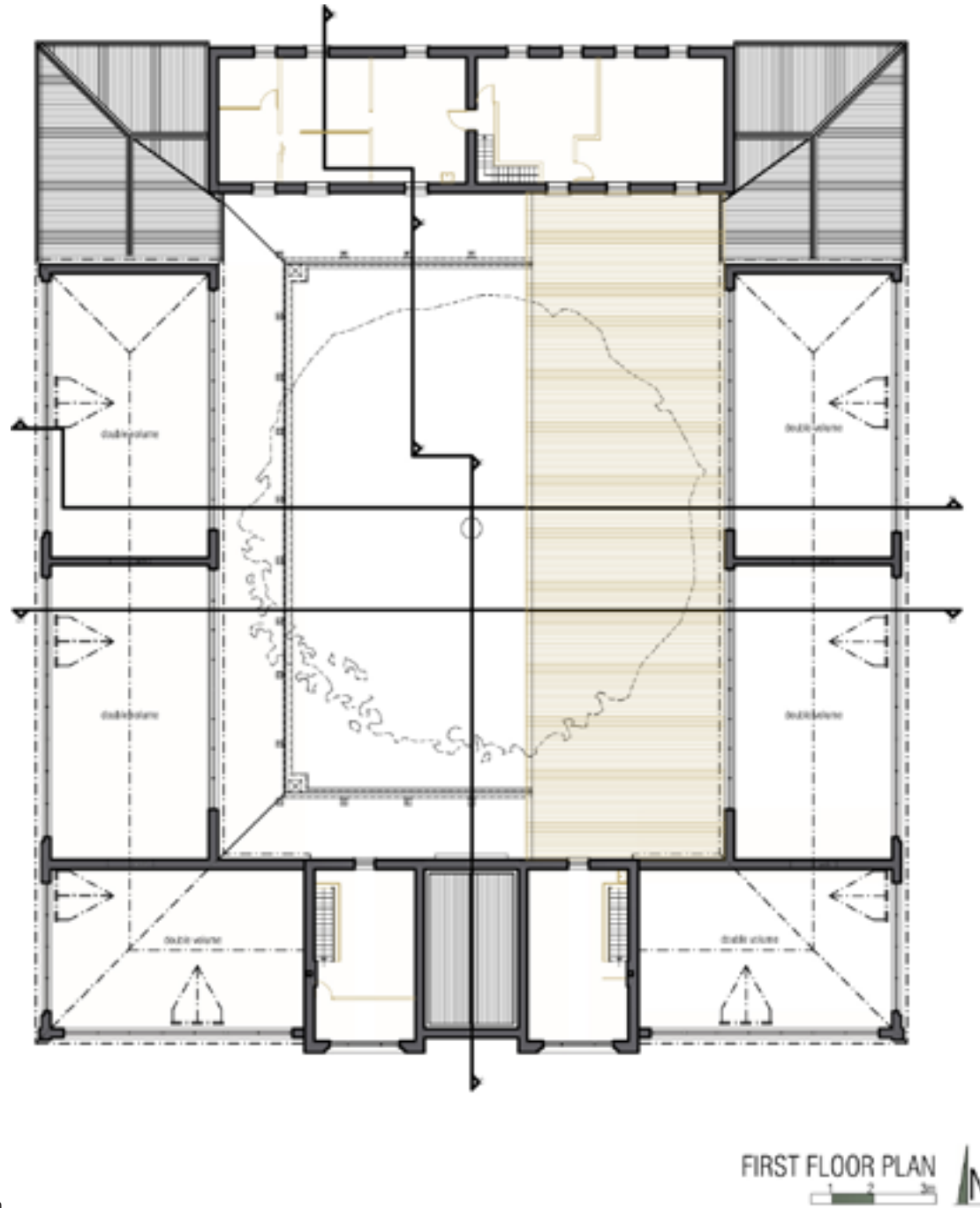
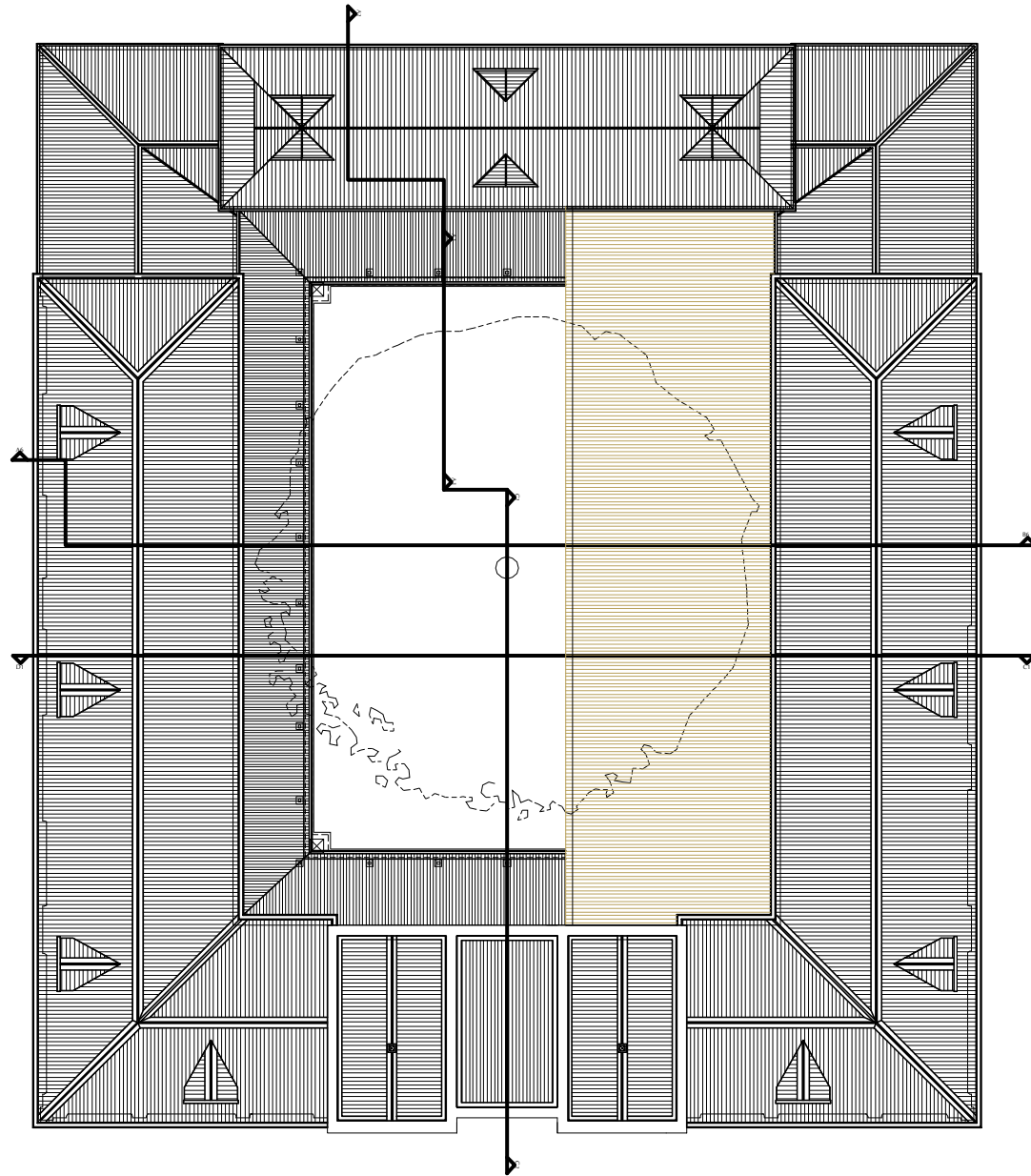


Figure 100: Altered First Floor Plan



ROOF PLAN  
1 2 3m

Figure 101: Altered Roof Plan

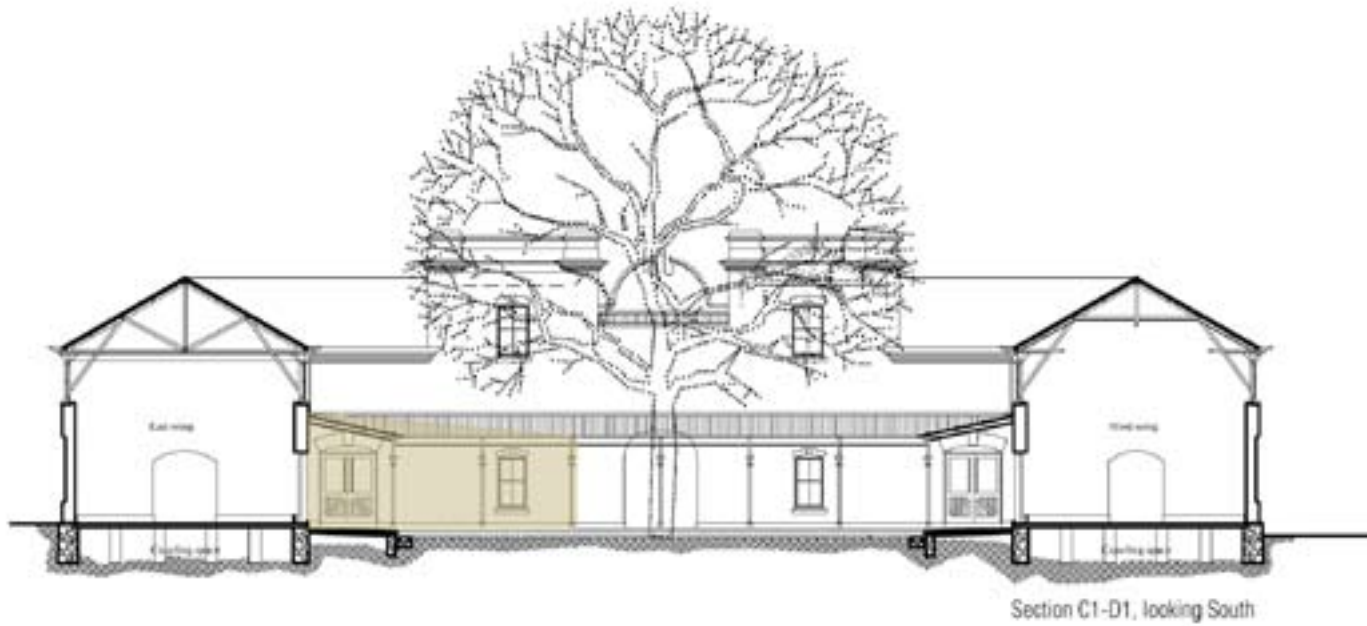
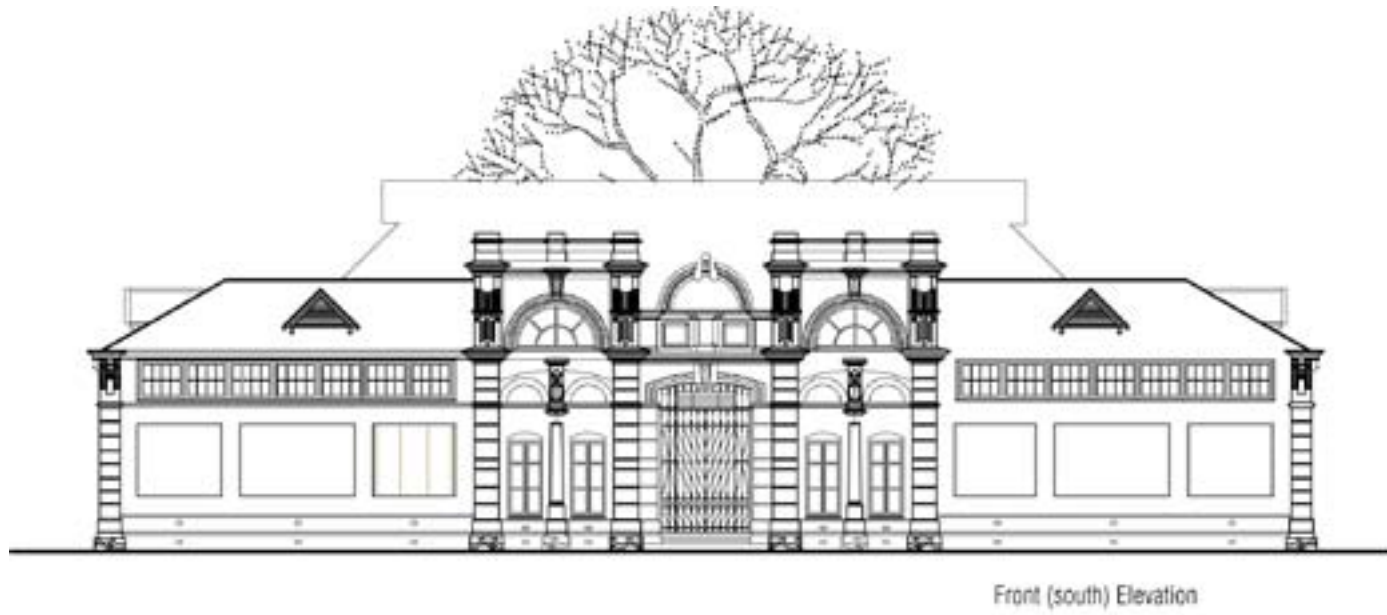
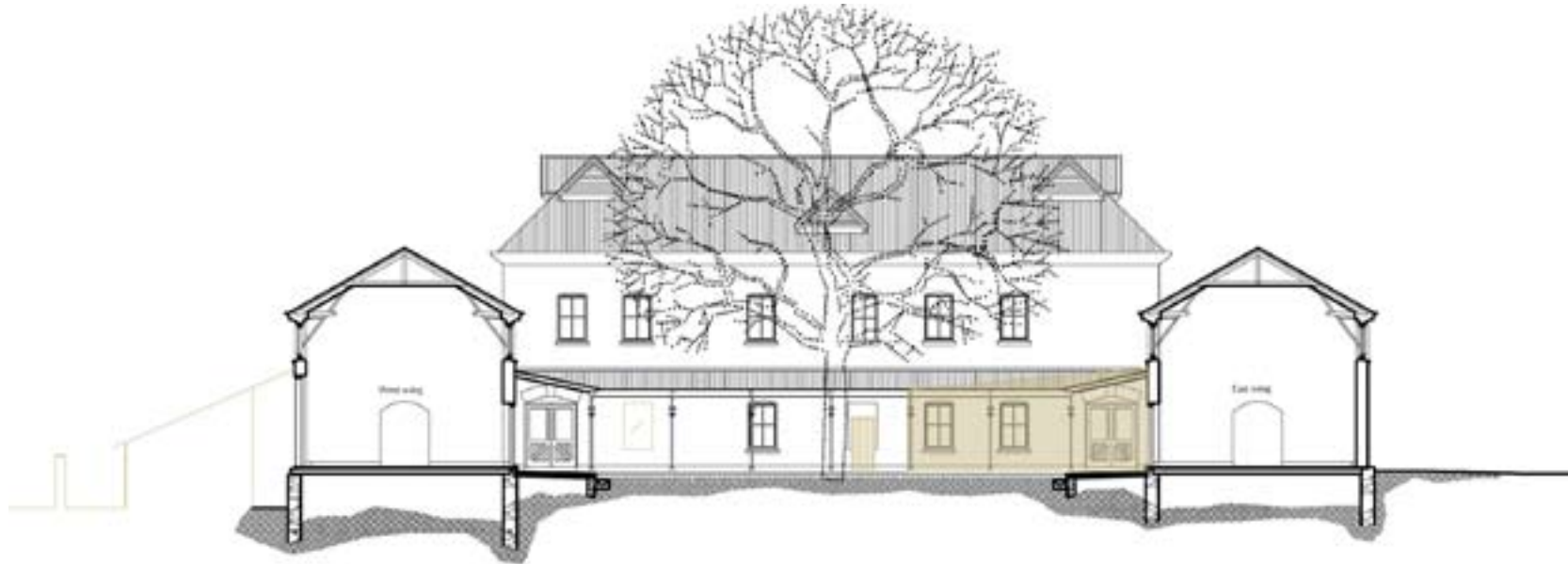
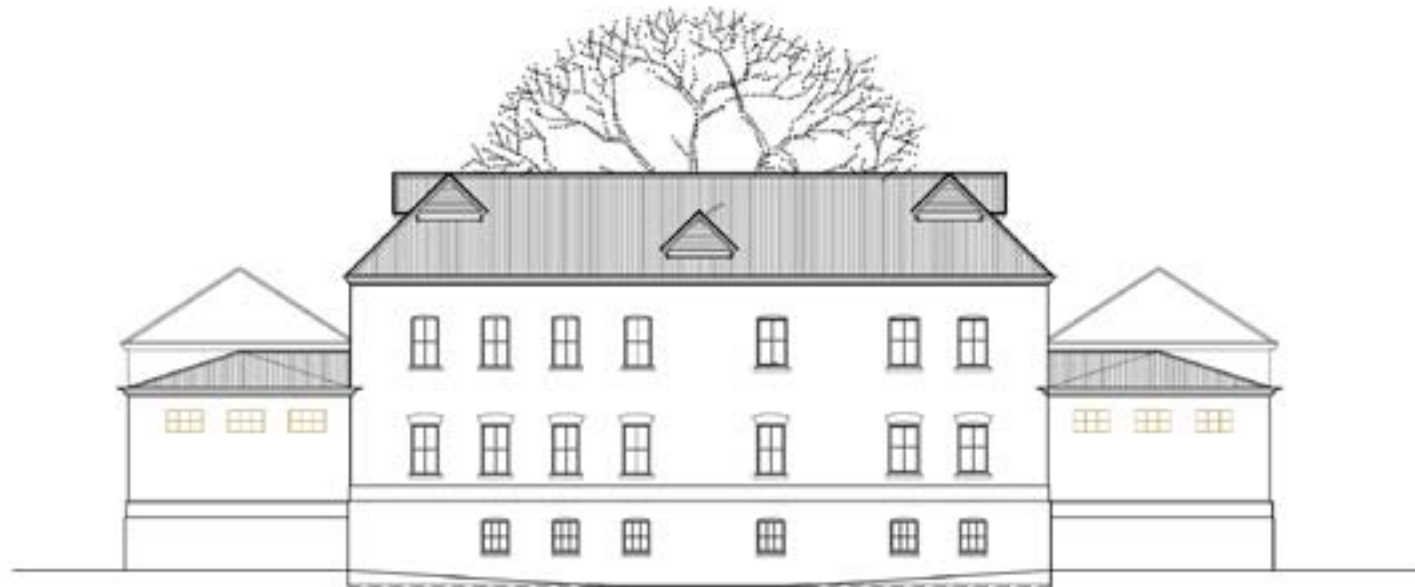


Figure 102: Altered South Wing and Courtyard Elevation





Section A6-B6, looking North  
Courtyard South Elevation



Exterior North Elevation

Figure 103: Altered North Wing and Courtyard Elevation

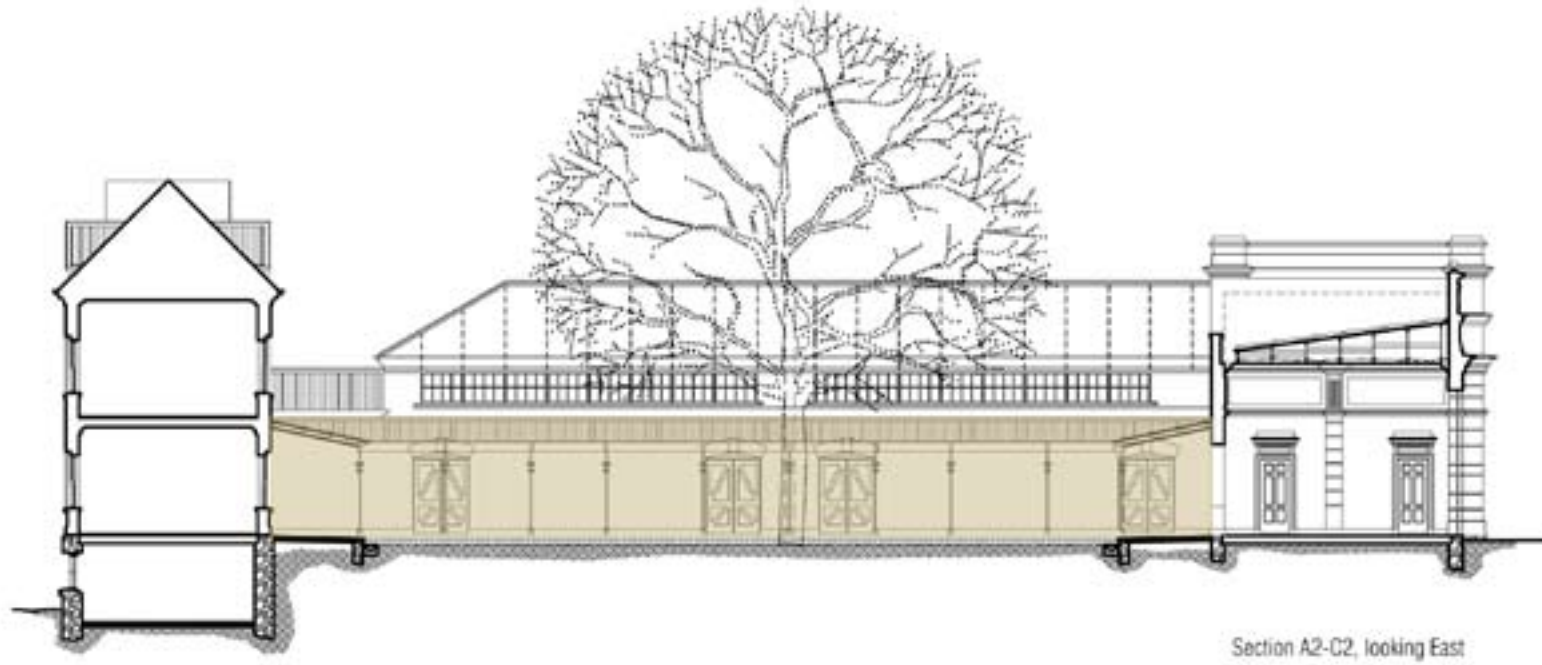
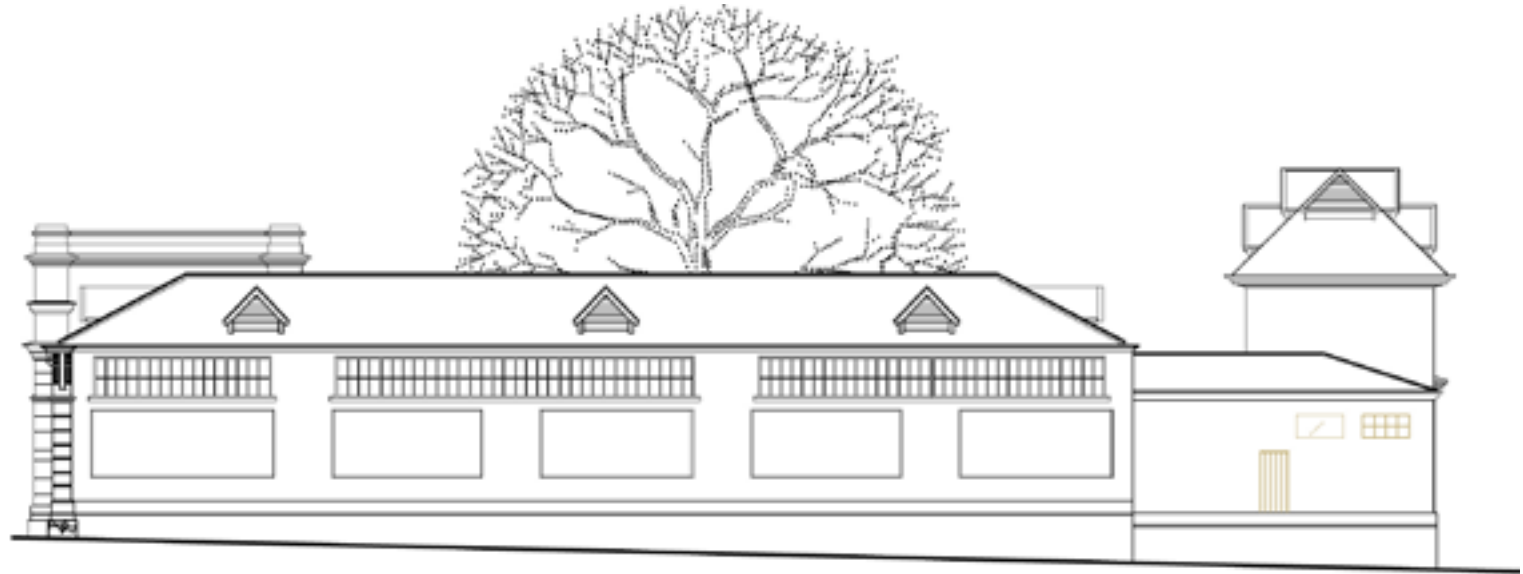
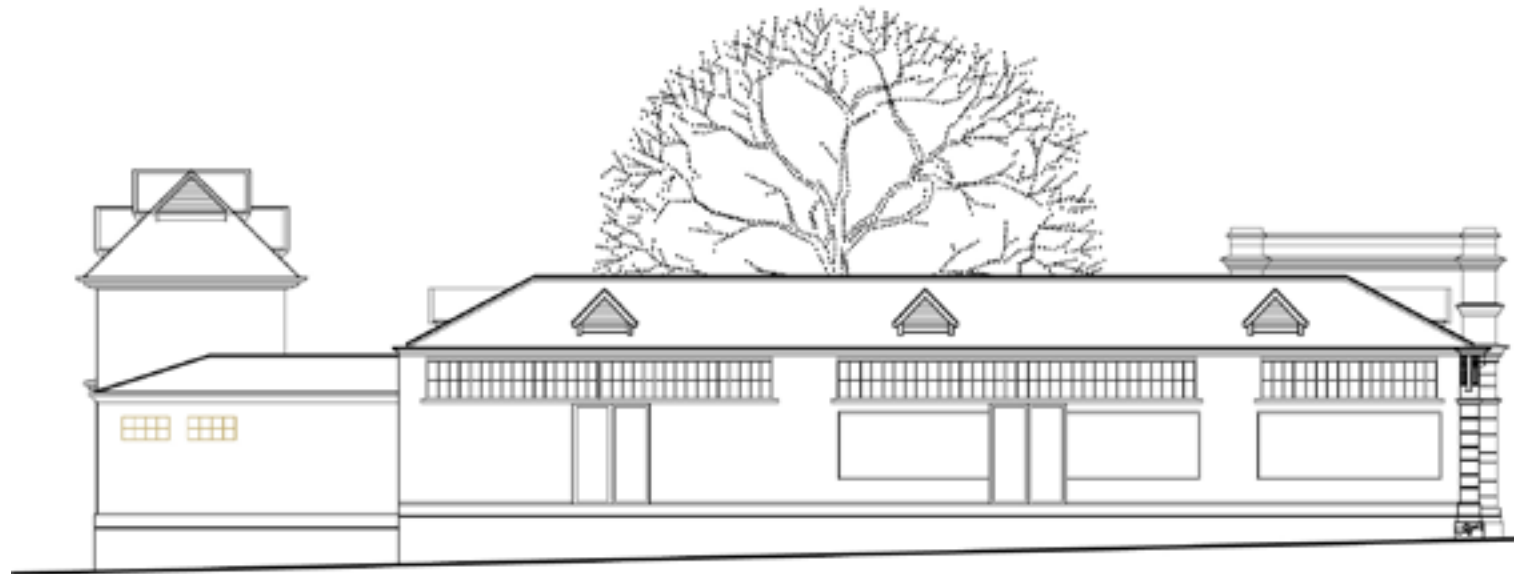


Figure 104: Altered Courtyard Section and Elevation

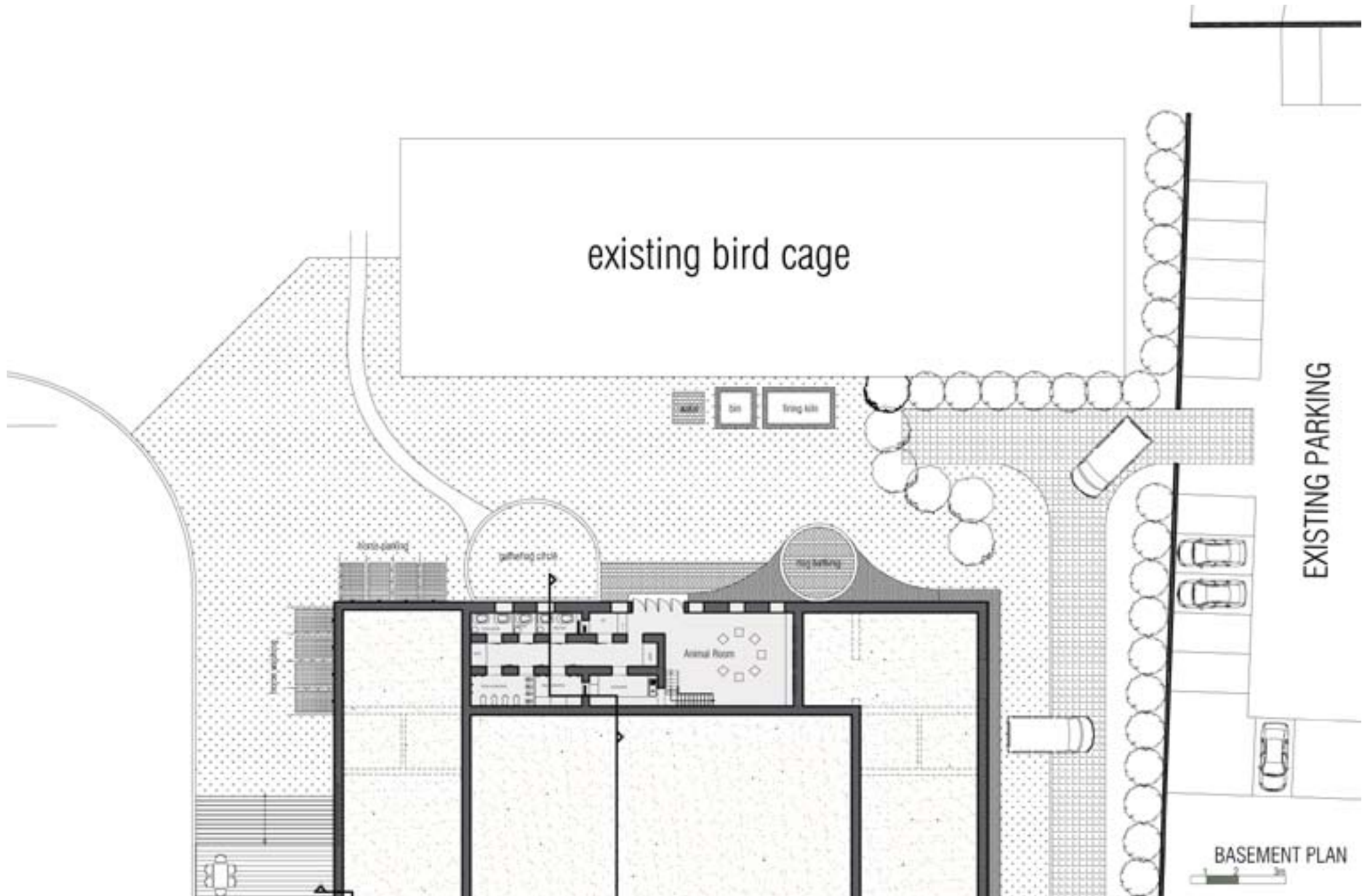


East Elevation



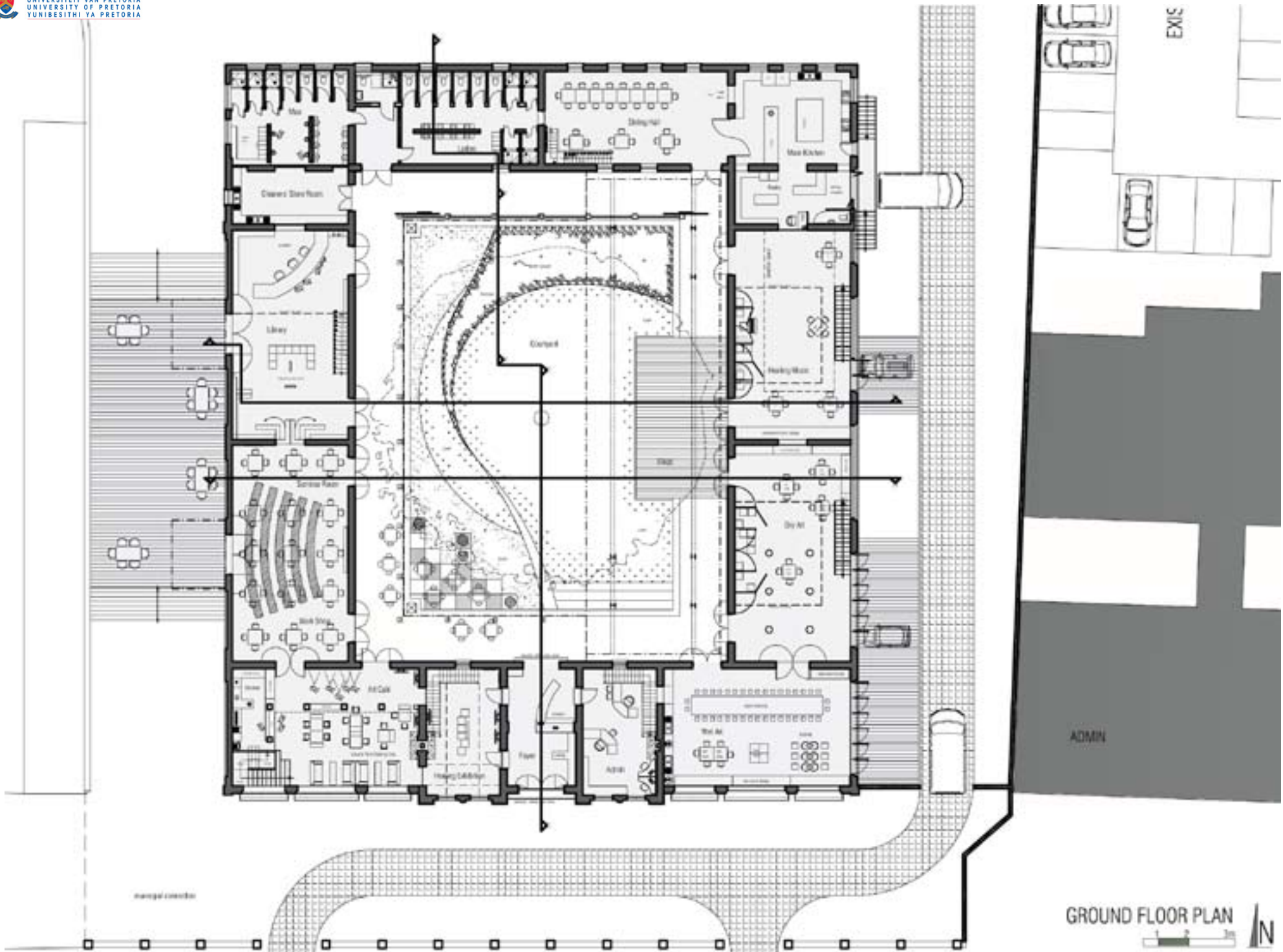
West Elevation

Figure 105: Altered exterior east and west elevations



PROPOSED PLAN

Figure 106: Proposed Basement Plan



GROUND FLOOR PLAN

Figure 107: Proposed Ground Floor Plan

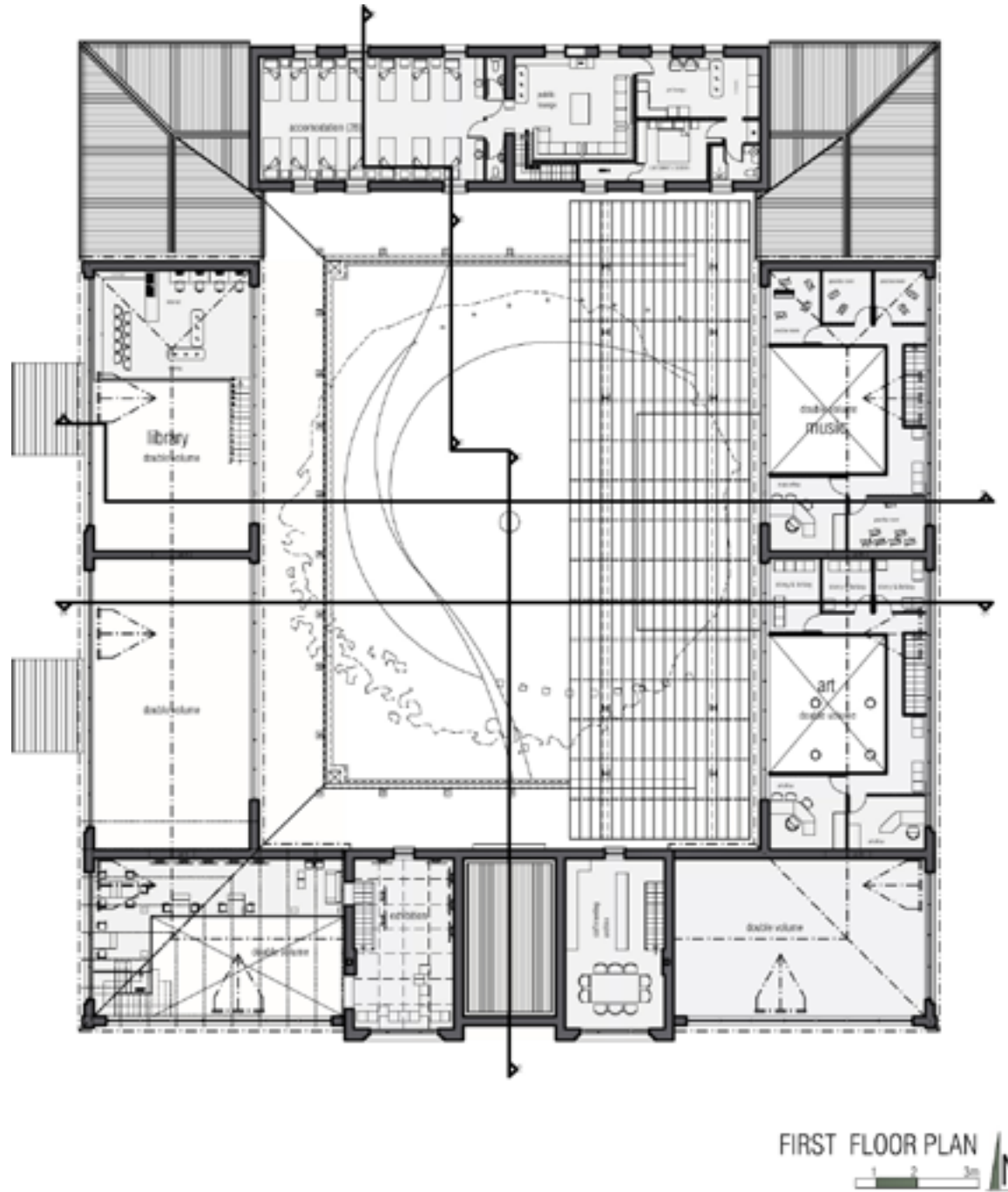


Figure 108: Proposed First Floor Plan

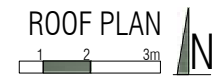
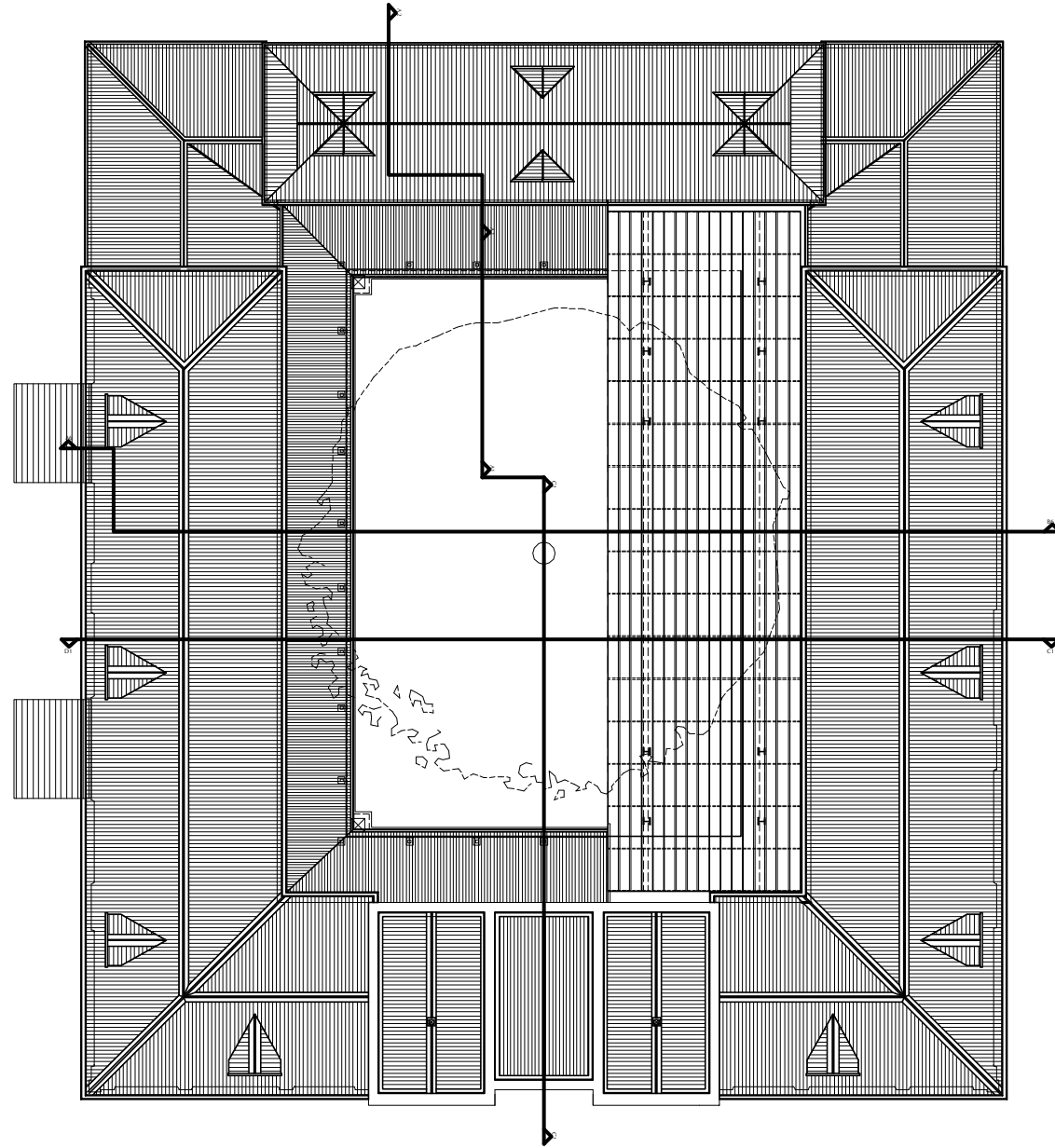
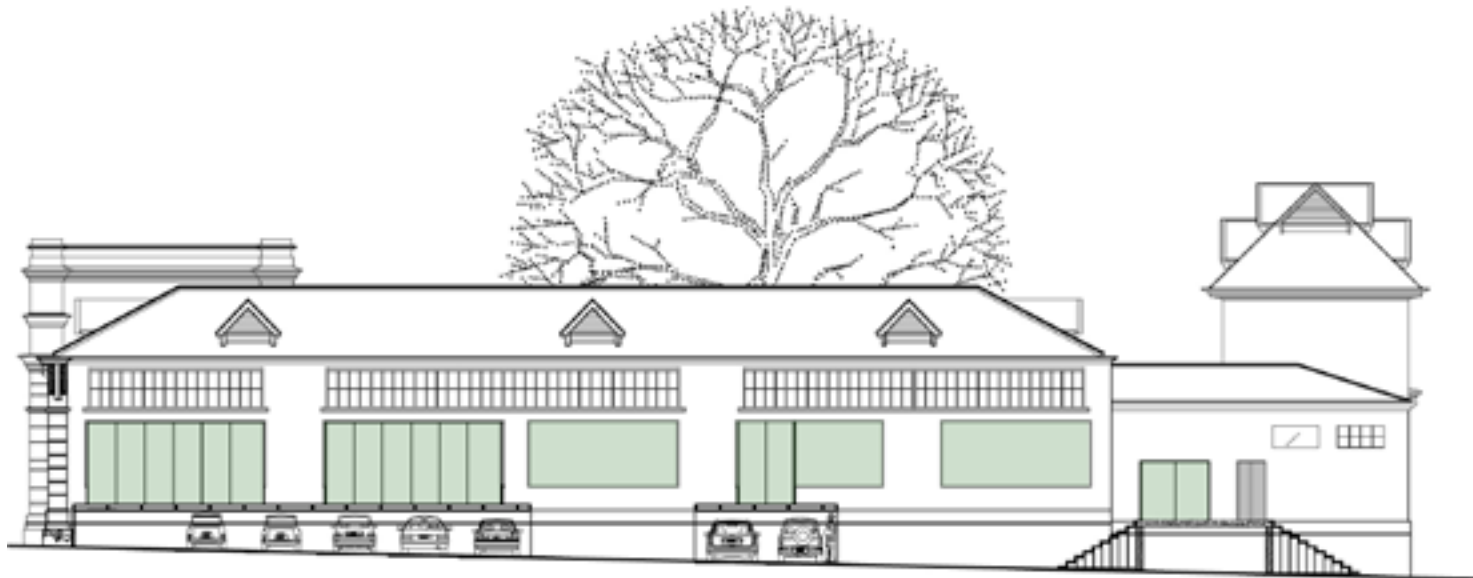


Figure 109: Proposed Roof Plan



Front (south) Elevation



East Elevation





North Elevation



West Elevation

Figure 111: New proposal (opening) on buiding







Figure 114: Detailed Section through the east wing and Pavilion Roof

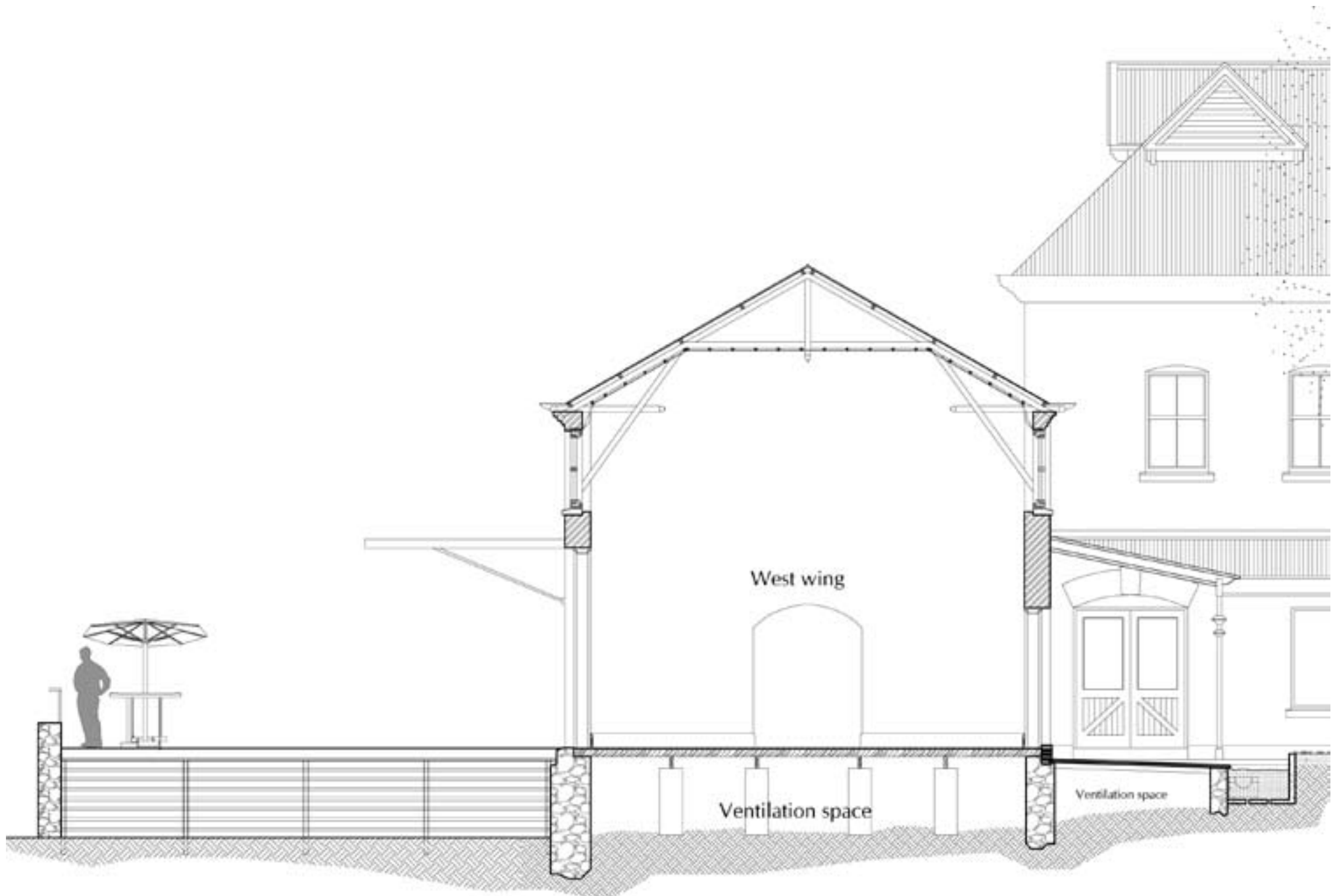


Figure 115: Section through library, showing unique vaulted ceiling

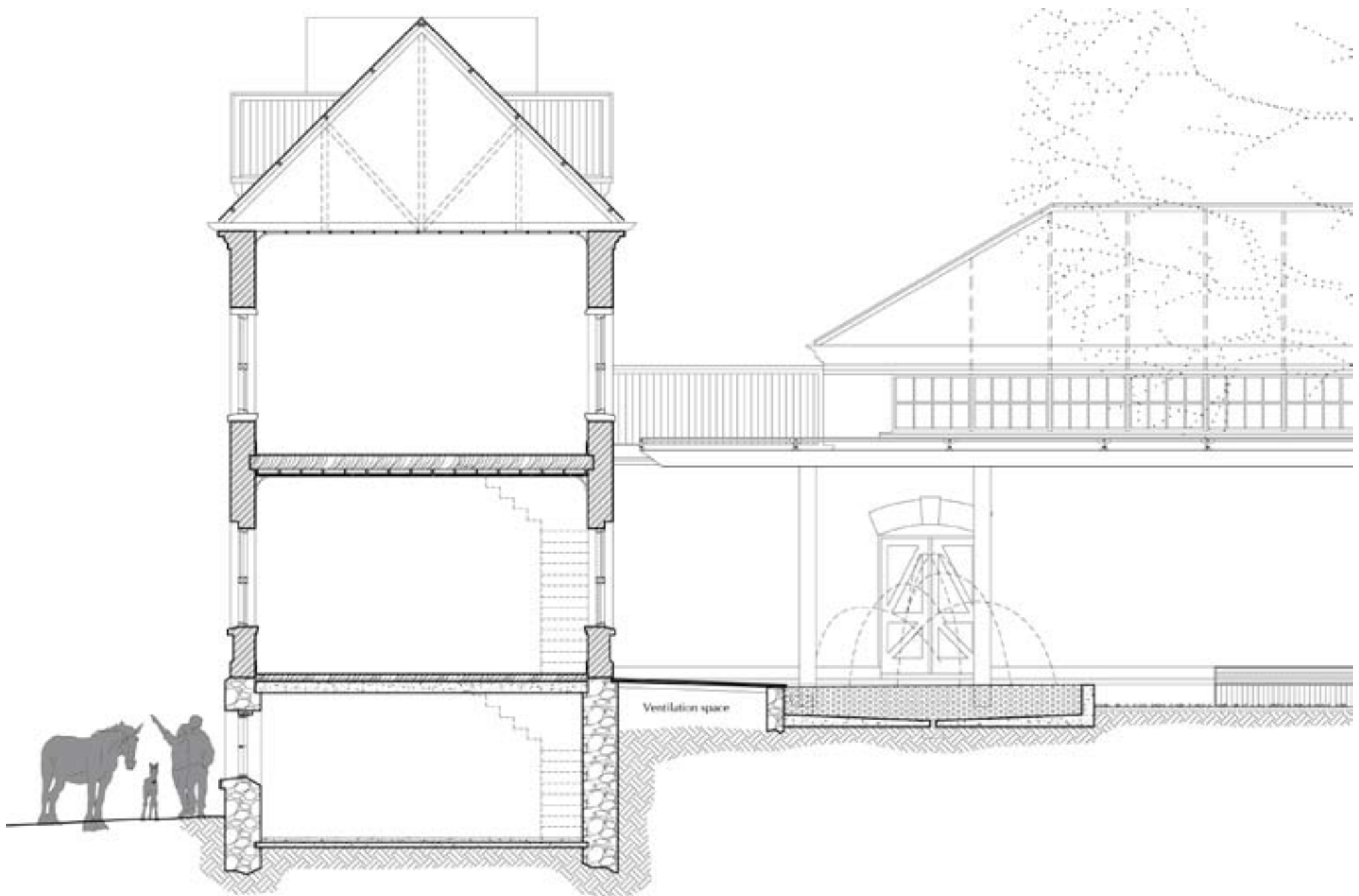


Figure 116: Detailed Section through Northern wing, showing the connection between zoo and courtyard

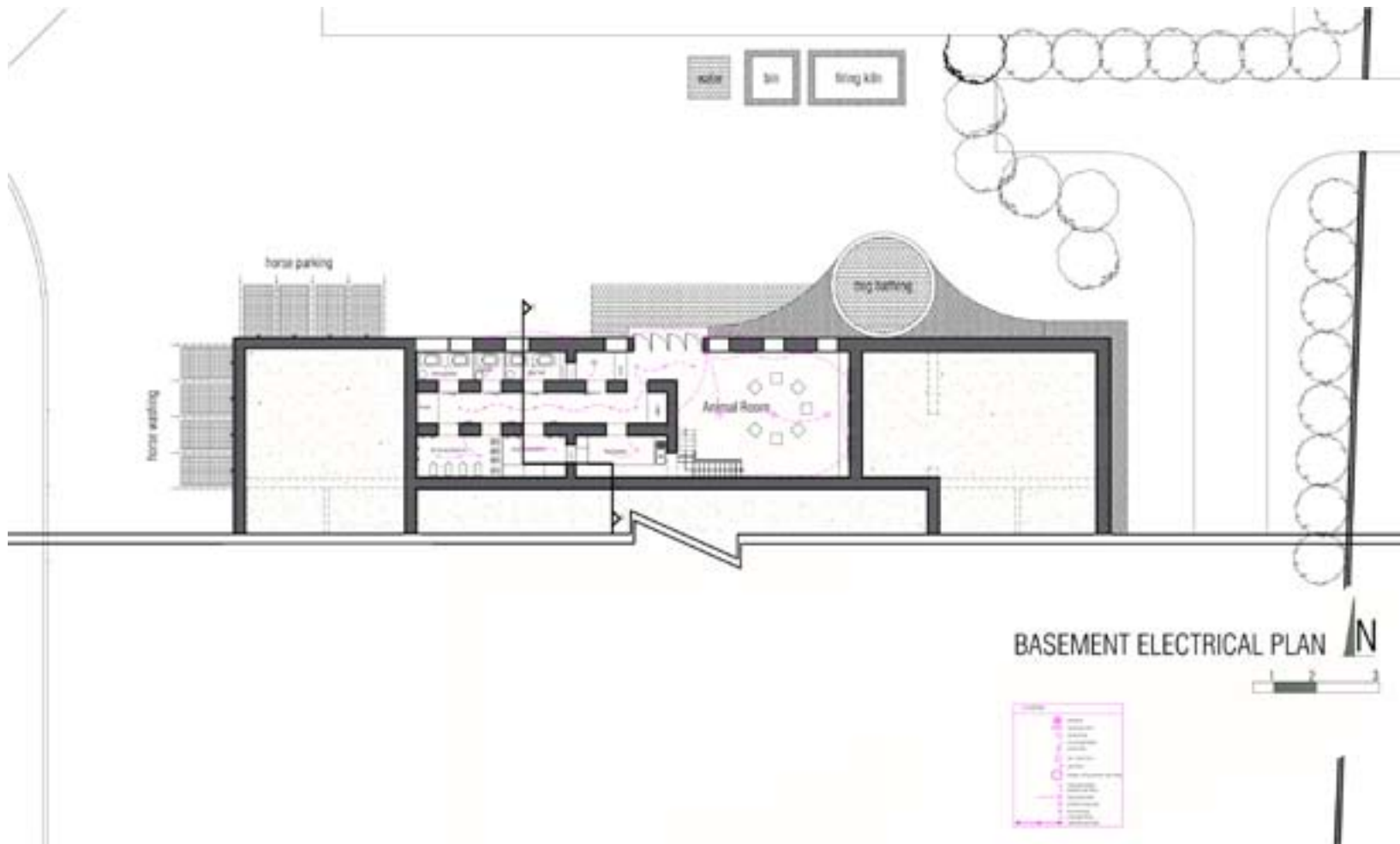


Figure 117: Basement Electrical Plan

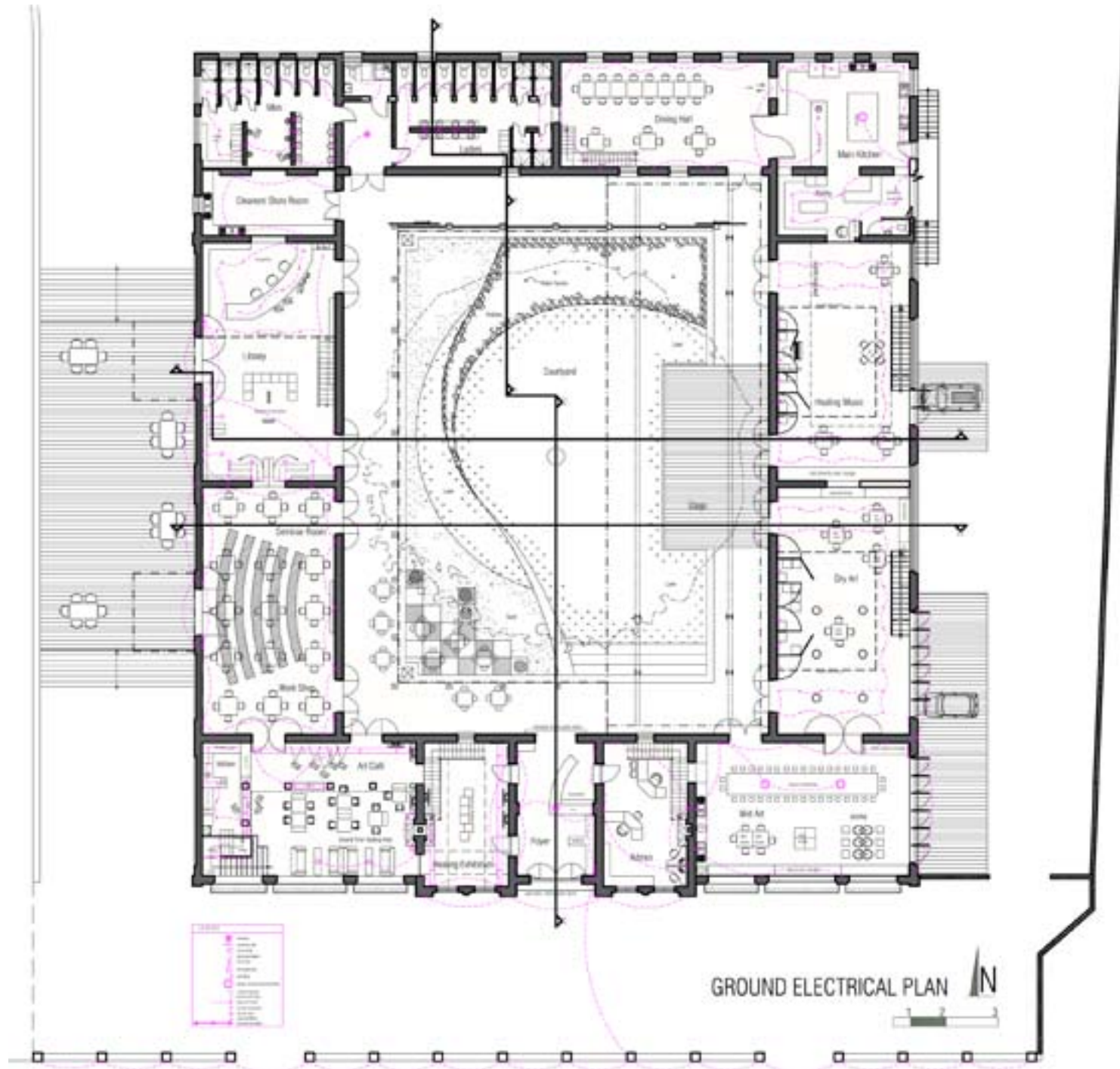


Figure 118: Ground floor electrical plan



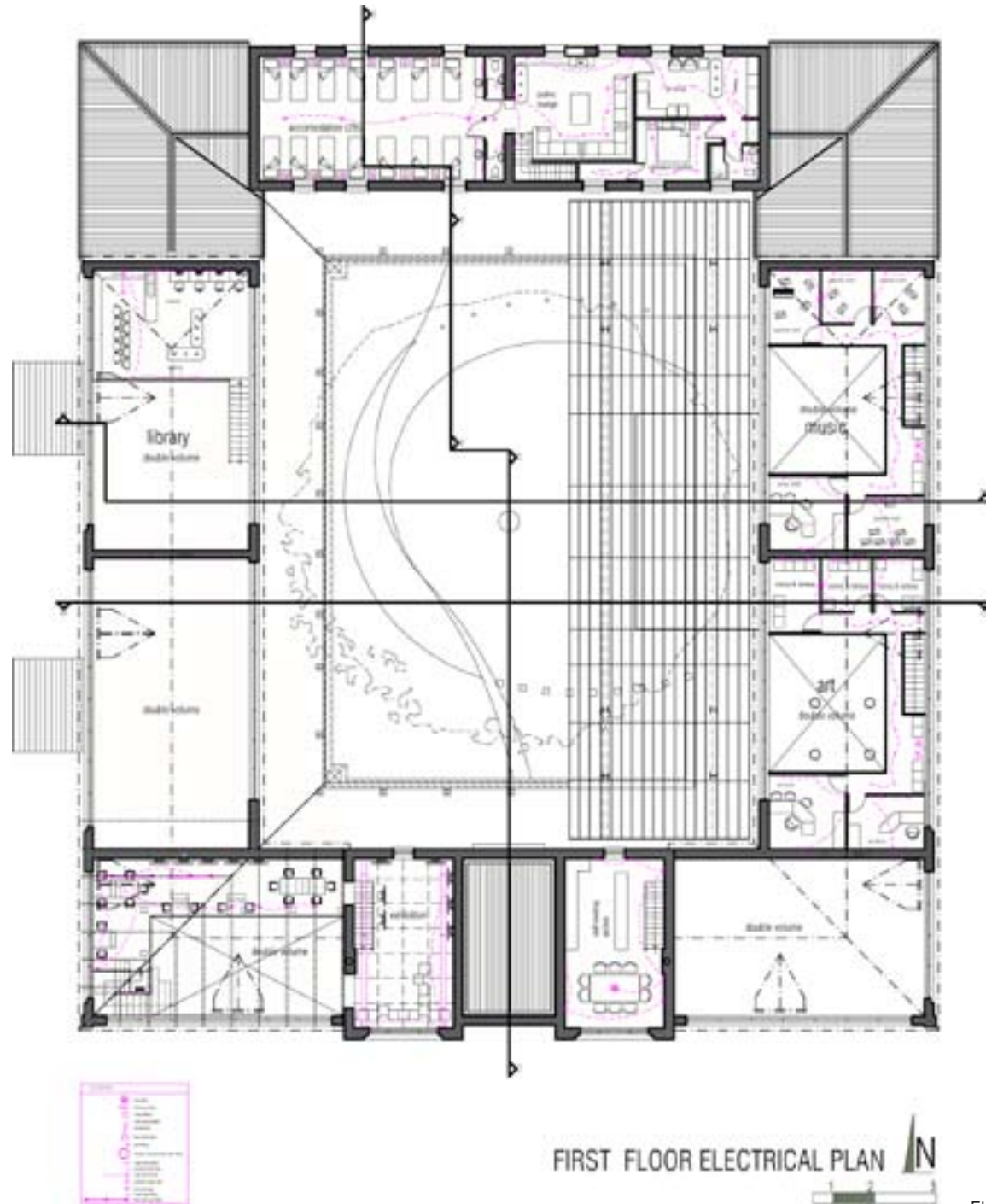


Figure 119: First floor electrical plan

The chosen site is a perfect location to have reached the project's goal. The 'Healing Activities Centre' aims at reinstating a life balance by reconnecting with nature. This is made possible by having the Pretoria Zoo on the same premises, in addition linking up with the activities offered at the centre. Together, all healing types- social, intellectual, creative and sensory stimulation lead to a harmonious well being.

Great volumes and spaces inside the building were ideal for re-use and functional adaptation. The existing different atmospheres together Different atmospheres were created by the change of levels and spatial qualities. By having kept to the design approach of lightly touching a heritage structure, the building is kept honest and used optimally. It is possible for the proposed centre to aid in uplifting society. However, in order to make a difference, a change needs to happen within every individual, which will have a ripple-effect on the wider circles.

The 'Healing Activities Centre' serves as a design catalyst to enhance the harmony of South African society by tracking back to their inner roots. The design proposal allowed the building to regain life and enjoy greater interaction between inside and outside, the street scape and building interior. The once deserted building has again become open to everyone. Positive marks will be left on every person experiencing the 'Healing Activities Centre'.

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# APPENDIX

Schedule of Accommodation

Image Gallery



## ACCOMMODATION SCHEDULE

	Room	Area (sq m)	Comments
GROUND FLOOR	Foyer	34,425	G1 offices: 1 person per 15sqm (=2,295 persons)
	Exhibition	40,012	C1 exhibition hall: 1 person per 10sqm /C2 art gallery (=4 persons)
	Coffee Shop	93,330	F2 small shop: merchandise displayed & offered for sale to public. Where floor area does not exceed 250sqm. 1 person per 10sqm. (=9,33 persons)
	mezzanine		F2:
	Conference	107,186	A3 places of instruction: 1 person per 5sqm (=21,437 persons)
	Library	103,398	C2 library: 1 person per 20sq m (=5,169 persons)
	mezzanine	40,897	C2 library: 1 person per 20sq m (=2,044 persons)
	Cleaner's store	26,133	J3 low risk storage: 1 person per 50sqm (=1 person)
	Mens	47,781	6 WC, 11 urinals, 8 WB, 8 baths
	Disabled toilet	5,698	min area of 2,9sqm and min plan dimension of 1,6m.
	Ladies	54,205	17 WC, 8 WB, 8 baths
	Dining Hall	72,536	A1 entertainment & public assembly: number of fixed seats or 1 person per sqm (=27 persons)
	Kitchen	45,980	B2 moderate risk commercial service: 1 person per 15sqm (=3,06 persons)
	Pantry	26,147	J3 low risk storage: 1 person per 50sqm (=1 person)
	Music therapy	103,398	A3 places of instruction: 1 person per 5sqm (=20,679 persons)
	mezzanine	68,043	G1 offices: 1 person per 15sqm (=4,53 persons)
	Art (dry) therapy	107,186	A3 places of instruction: 1 person per 5sqm (=21,437 persons)
	mezzanine	68,993	G1 offices: 1 person per 15sqm (=4,59 persons)
Art (wet) therapy	93,330	A3 places of instruction: 1 person per 5sqm (=18,66 persons)	
Admin	40,012	G1 offices: 1 person per 15sqm (=2,667 persons)	
FIRST FLOOR	Exhibition	40,012	C1 exhibition hall: 1 person per 10sqm /C2 art gallery (=4,001 persons)
	Admin	40,012	G1 offices: 1 person per 15sqm (=2,667 persons)
	Accommodation	72,536	H2 dormitory: 1 person per 5sqm (=14,507 persons)
	Lounge	32,323	A1 entertainment & public assembly: number of fixed seats or 1 person per sqm (=12-32 persons)
	Caretaker's unit	38,879	H3 domestic residence: 2 persons per bedroom (= 2persons)
BASEMENT	Animal therapy	122,683	A3 places of instruction: 1 person per 5sqm (=24,536 persons)

The building can accommodate 208-228 people at full capacity.

SABS 0400-1990 p 34-5: Design Population (Occupancy or Building Classification)

SABS 0400-1990 p126 Table 5:Provision of Sanitary Fixtures

SABS 0400-1990 p154: Toilet Facilities for Disabled Persons.

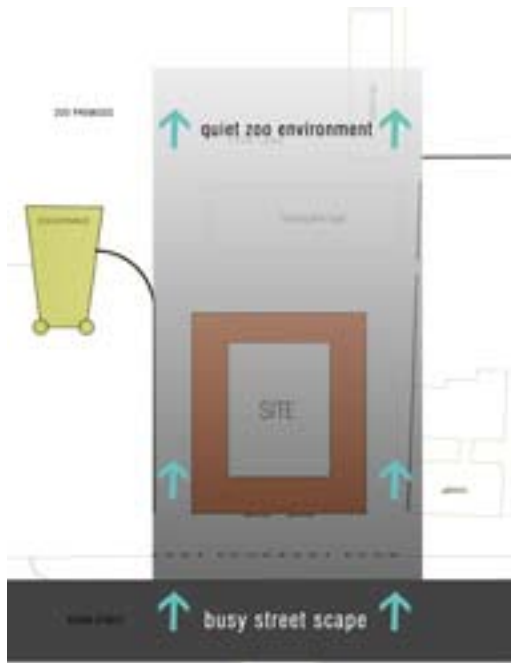


Image 1: The change from busy street scape (south) to the peaceful zoo (north).

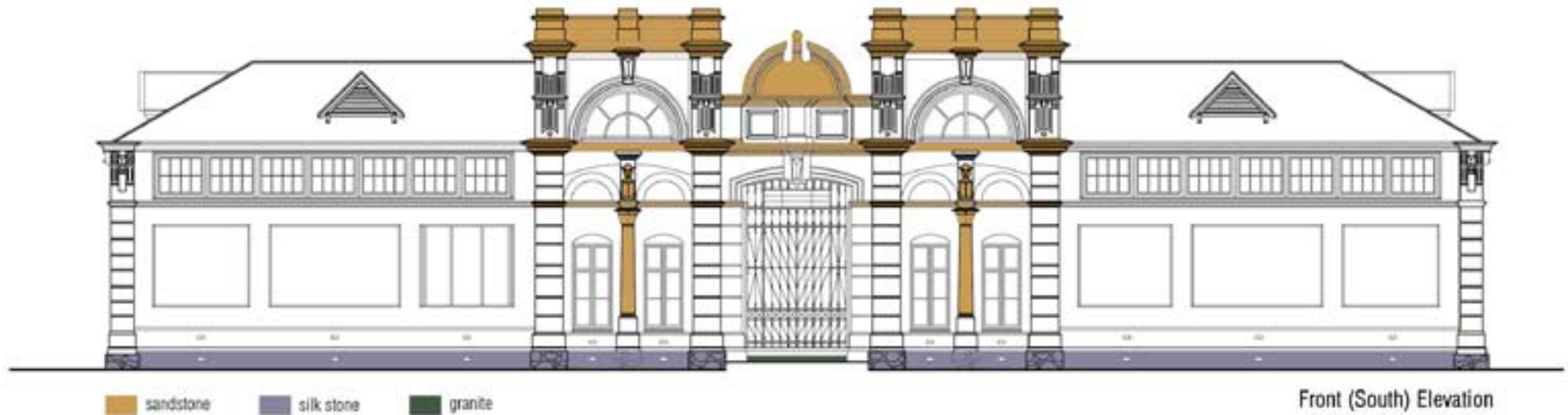


Image 2: The facade is made up of different building materials.



Image 3: The front facade is obscured by the trees in front of it.



Image 4: The courtyard addition (left wing in photo) ruins the courtyard symmetry and atmosphere



Image 4: The courtyard addition (right wing in photo) ruins the courtyard space



Image 5: Illogical partitions in the upper northern wing





Image 6: 'Tower' partitions



Image 7: The addition can be seen to the right of the building



Image 8: The roof of the late addition stretches right across the 'wagon doors', blocking them



Image 9: Uneven blocks protrude from the ground level on the eastern side of the building



Image 10: Open area in basement



Image 11: The other half of the basement is subdivided by arches



Image 12: An eye-catching staircase in the north wing, leading up to the first floor



Image 13: A steep staircase leads down into the basement



Image 14: Staircase leading up to the 'tower' first floor



Image 15: Cast iron air vents are found all along the building exterior



Image 16: Roof vents are placed on all roofs of the building



Image 17: The PVA paint layer is peeling off the lime-based paint. (This photo was taken in the northern upper wing, but also applies to the 'tower' first floor.)



Image 18: The only vaulted pressed steel ceiling in the building, painted purple



Image 19: The most expensive pressed steel ceiling found in the east wing



Image 20: The original 'Baltic Deal' timber ceiling is concealed by the later added acoustic panels



Image 21: The pressed steel ceiling in the foyer



Image 22: Pressed steel ceiling in the 'tower' first floor

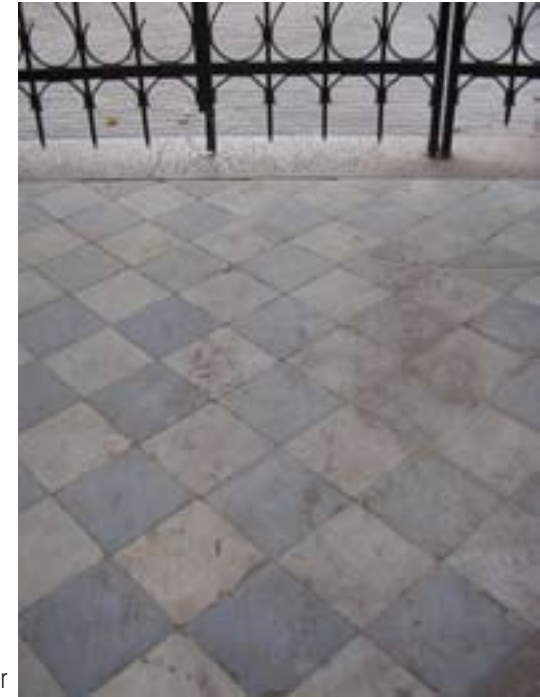


Image 23: The imported chequered marble floor in the foyer



Image 24: The original 'Oregon Pine' timber floor was later covered with a layer of parquet flooring



Image 25: A newer version of parquet flooring is to be found on ground floor in the outer ends of the northern wing



Image 26: Local blue slate covers what is left of the veranda floor



Image 27: Standard sliding sash windows are found through most of the building



Image 28: One standard sash window is placed on each floor in the 'towers'



Image 29: Three later added steel windows can be found on either end of the northern wing



Image 30: A half round window is placed on every first floor of the front facade 'towers'



Image 31: Clerestory windows line many facades of the building



Image 32: These exterior double flb doors are found on the facades facing the courtyard

Image 33: Detailed door handles and finger plates are still found on most of the doors





Image 34: The original wrought iron gate encloses the foyer



Image 35: The later added single door is overgrown by wild plants



Image 36: The natural light quality in the eastern wing



Image 37: Good natural lighting prevails the northern wing





Image 38: Louvres were later added in front of all clerestory windows of the east and west wing



Image 39: The original chandelier is still hanging in the foyer



Image 40: Evidence of later added electricity is found throughout the building



Image 41: Later added fluorescent light are suspended from the ceiling in the east wing



Image 42: Fluorescent light are placed along the northern wing



Image 43: A vent pipe pierces through the pressed steel ceiling in the eastern 'tower'



Image 44: A hand basin is found in the eastern 'tower'



Image 45: The other hand basin found on the first floor of the northern wing



Image 46: Sewage and other pipes run through the basement



Image 47: A chimney can be seen on either 'tower' roof



Image 48: The interior courtyard addition is left damaged by water and lack of maintenance