5. DESIGN DEVELOPMENT

5.1 INTRODUCTION

The start of the design development would be to take the information retrieved from the context study done in chapter 3.

This data would form the outlined principles of the basic design to create a concept spatial layout.

The concept and design principles would then be implemented in these spaces to hopefully create a outcome in line with the aim of the project.

5.2 SITE CONSTRAINTS AND OPPORTUNITIES

CONSTRAINTS:

- Make a positive connection with New Hope School. Outside visitors to the Rehabilitation centre must not disrupt the activities of the school.
- Connect the Rehabilitation Centre with the current architecture of the school but also fit in with the contemporary architecture created by the new buildings in Atterbury road.
- Public transport is not efficient for disabled people. Drop-off to be created.
- The same main entrance as the school should be used to maximize the use of the existing parking area of the school.
- A fair amount of noise pollution will come from vehicles driving in 26th and Ceceilia streets.

OPPORTUNITIES:

- Link with existing and established Cerebral Palsy education facility New Hope School.
- Visual possibilities from 26th street as well as Ceceilia road.
- The site falls within an existing economic node and have environmental opportunities as well.
- The Rehabilitation Centre could use the existing pick-up and drop-off transport system of the school.
- The proposed site has a large northern boundary that is being bordered by the Waterkloof spruit, which could provide an aesthetically pleasing view and provide natural elements to the design.
- The large trees on the proposed site could be incorporated into the design to create well designed exterior spaces.

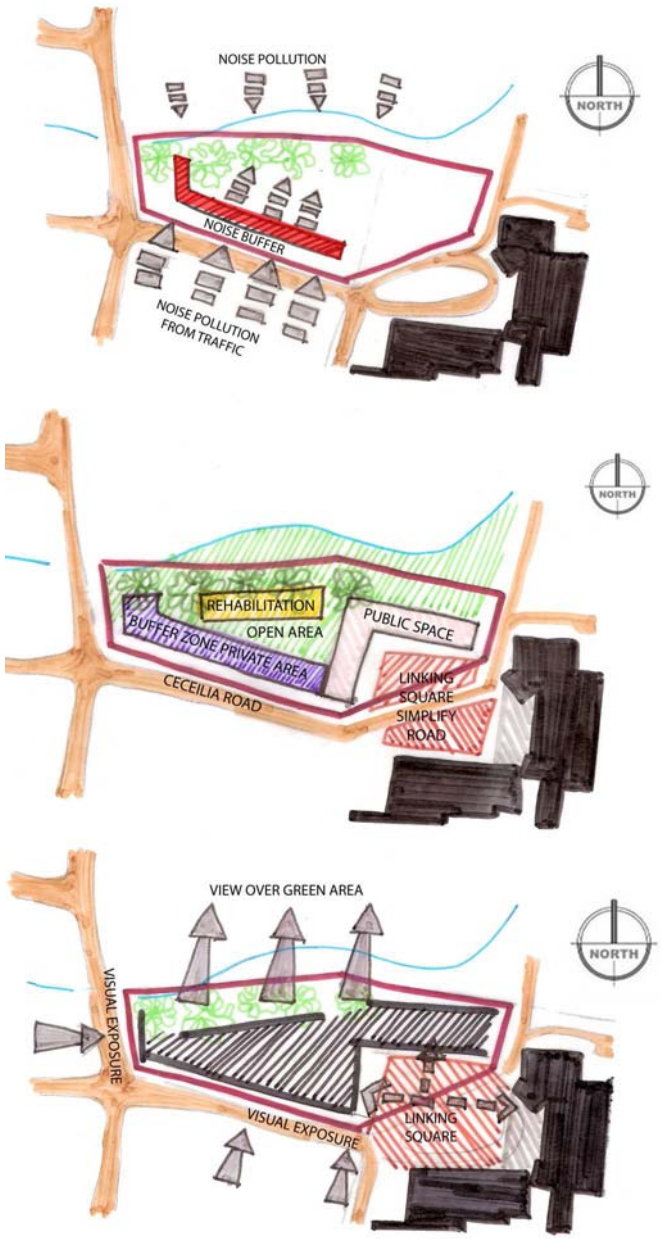


Figure 96. Conceptual design development of site plan

5.2 SITE CONSTRAINTS AND OPPORTUNITIES

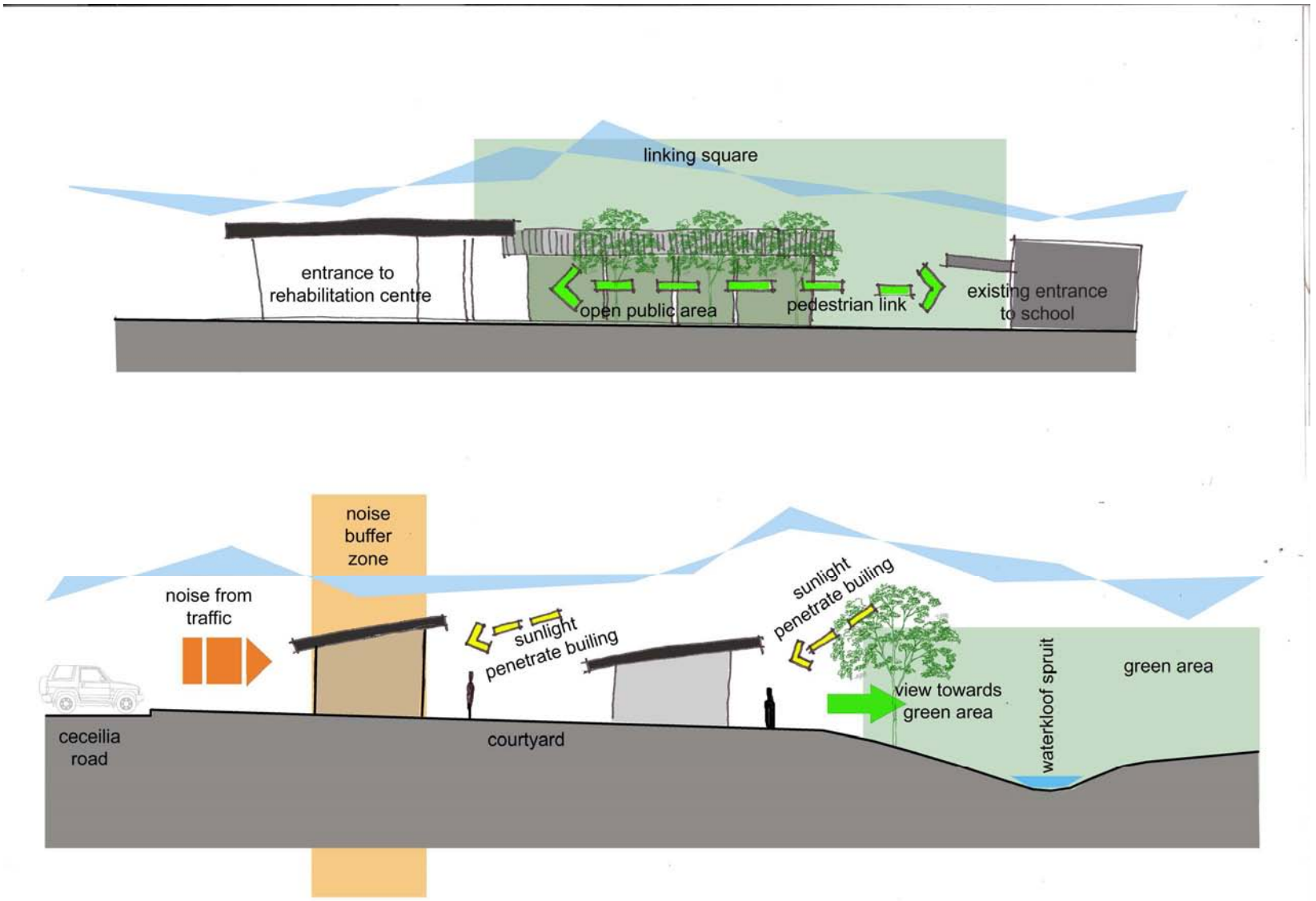


Figure 97. Conceptual design development of site plan

5.3 MOVEMENT, ACCESS AND SECURITY

There are three ways of accessing the building:

PEDESTRIAN ACCESS:

Pedestrian access will be provided towards care unit entrance and main entrance. Access towards main entrance to be along Ceceilia Road via designed pedestrian walkway. A dedicated pedestrian access would be provided from the South-West through a pedestrian gateway that leads to the care unit entrance.

VEHICULAR ACCESS:

- **Primary access** to the rehabilitation centre will be through the main entrance of New Hope school. The existing dysfunctional parking area will be redesigned into a functional parking layout that accommodates correct disabled parking and access towards the school and rehabilitation centre. Teachers parking to be relocated on existing school ground. A NHS transport drop-off will be created to the eastern side of the rehabilitation centre. This is on their way towards their dedicated parking area for drop-off and pick-up of NHS scholars.
- **Secondary vehicular access** will be created for the care centre and consulting rooms. This parking area will be accessed via 26th street. Exit will be towards Ceceilia street. Visitors of the 24 hour care centre will have this dedicated parking area for visiting hours that extends beyond the business hours of school.

SECURITY:

The nature of this project being a center for children, poses a number of security risks that need to be addressed.

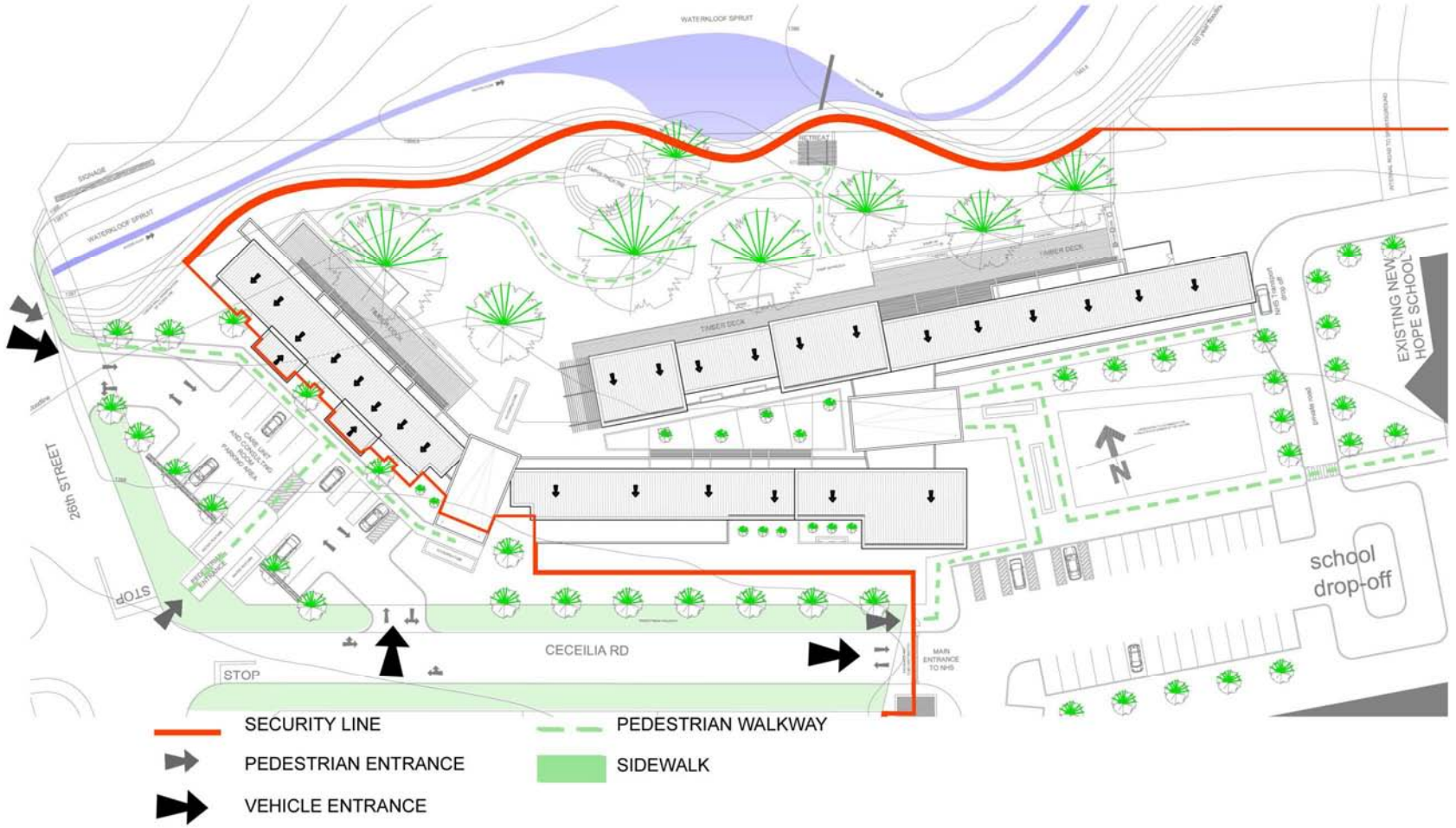
These risks are:

- Centre needs to be enclosed, which will form the security line and keep unwanted guests out as well as keeping children from leaving without supervision.
- Security from children drowning in the spruit and pools.

Existing New Hope School's guardhouse will be upgraded and reused.

New Hope School and rehabilitation security will be run from here.

5.3 MOVEMENT, ACCESS AND SECURITY



The pedestrian gateway

Signage wall seen from the corner of 26th and Ceceilia street.

Walls to be cladded with natural stone cladding.

View through two walls over a water feature look directly onto play area of the care unit.

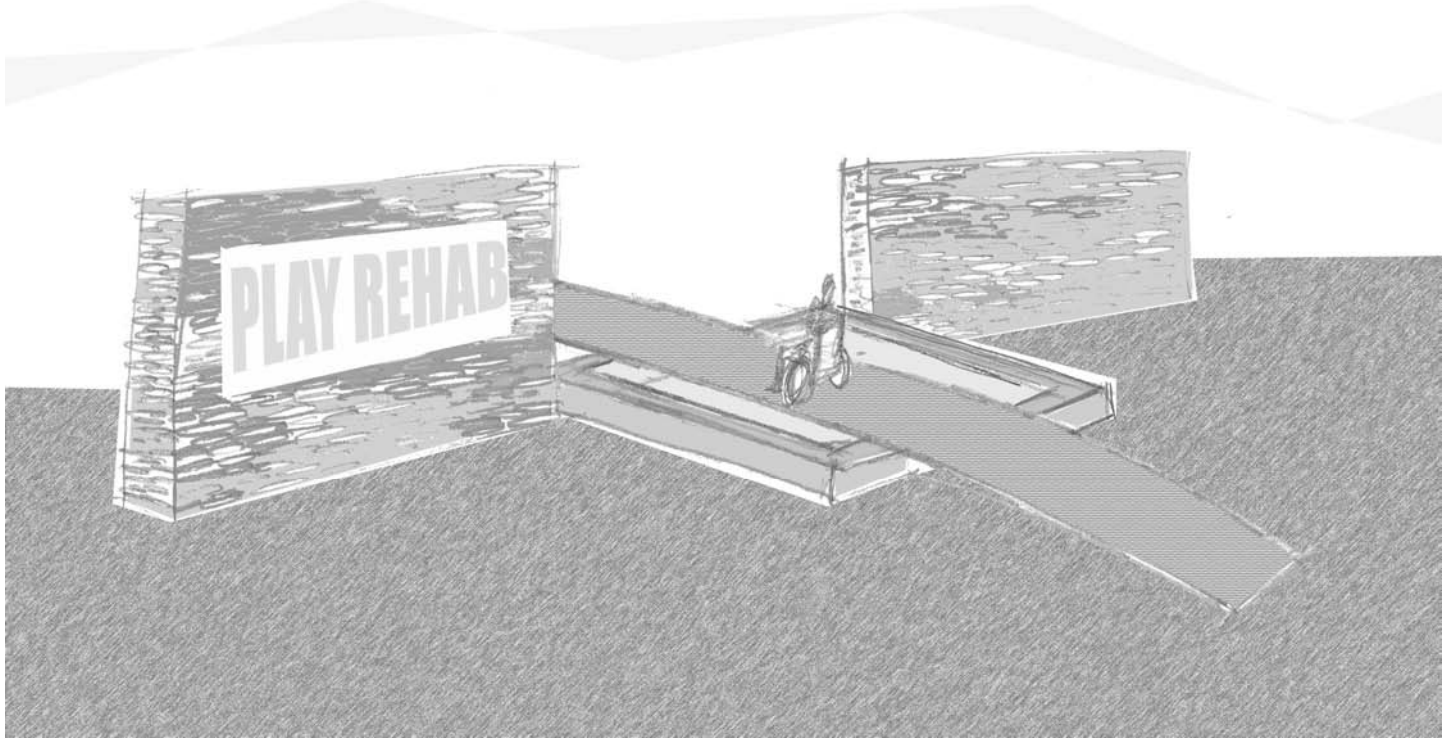
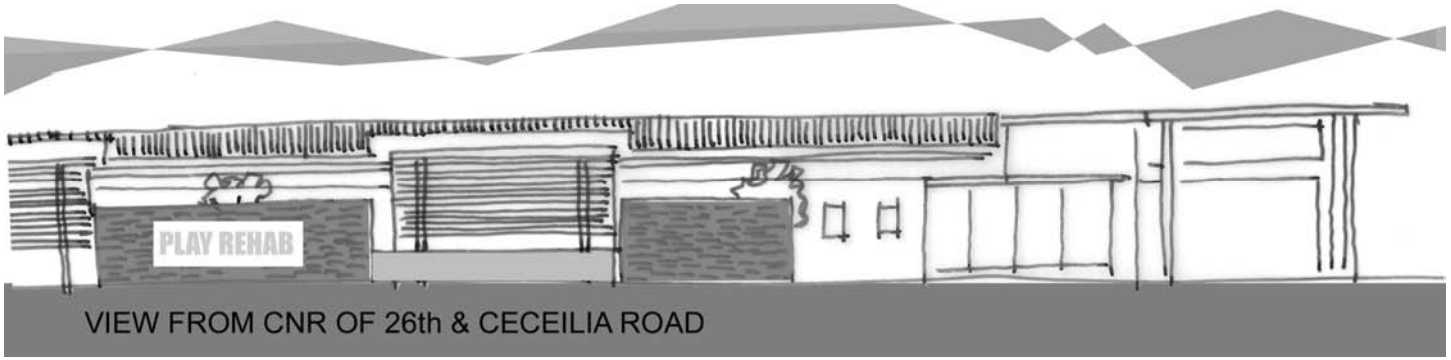


Figure 98. Pedestrian gate way from 26th & Ceceilia road



5.4 MANIPULATION OF WATERKLOOF SPRUIT 100 YEAR FLOODLINE

The existing waterkloof spruit to the north of the site flows from west to east, originating form stormwater runoff in the Waterkloof residential area.

Waterkloof spruit merge with Wolwe Spruit to the east of New Hope School. Wolwe spruit originates from stormwater collected on the Elardus park/ Wingate suburbs.

The combined spruit flows into the Struben dam in Faerie glen.

The spruit poses aesthetical opportunities as well as problems.

5.4.1 OPPORTUNITIES AND PROBLEMS OF WATERKLOOF SPRUIT

OPPORTUNITIES:

- The spruit presents great visual opportunities to create a tranquil environment for the visitors of the rehabilitation centre.
- The spruit also provides the opportunities for natural acoustic value to the visitor.
- The water stream would contribute to associating nature with the building as well as its inhabitants.

PROBLEMS:

The Spruit poses a number of problems:

- Flood line.
- An access security risk.
- Drowning security risk.
- Aesthetical problems if not properly maintained.

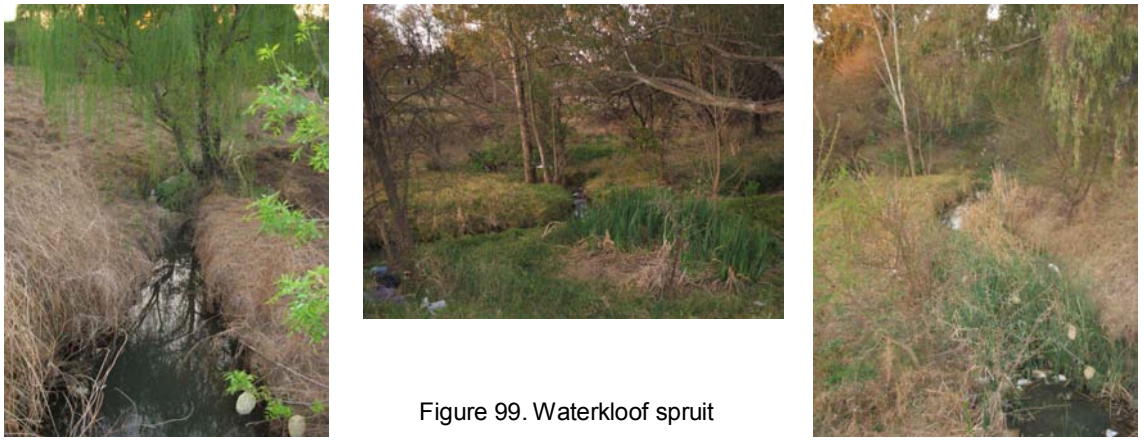


Figure 99. Waterkloof spruit

Figure 100. Arial photograph of Waterkloof spruit surrounding the proposed site

5.5 DESIGN PROPOSAL FOR

WATERKLOOF SPRUIT

The existing spruit needs to be aesthetically rehabilitated from a non maintained stream to a natural feature for its immediate environment.

Combined with the aesthetics, the solution for rehabilitating the spruit needs to be functional, to manipulate the floodline to accommodate the building at the north western end and provide security for the visitors.

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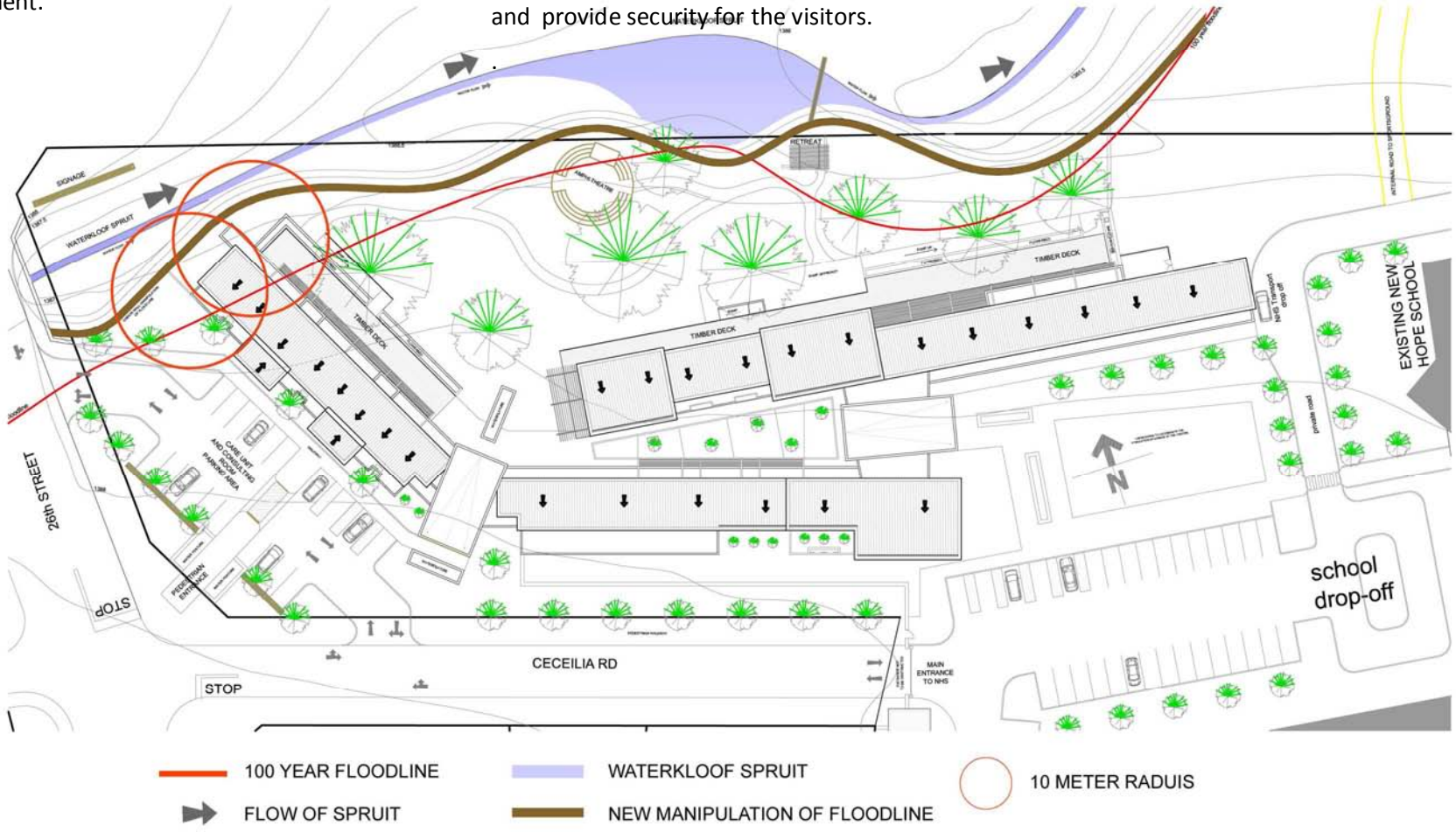
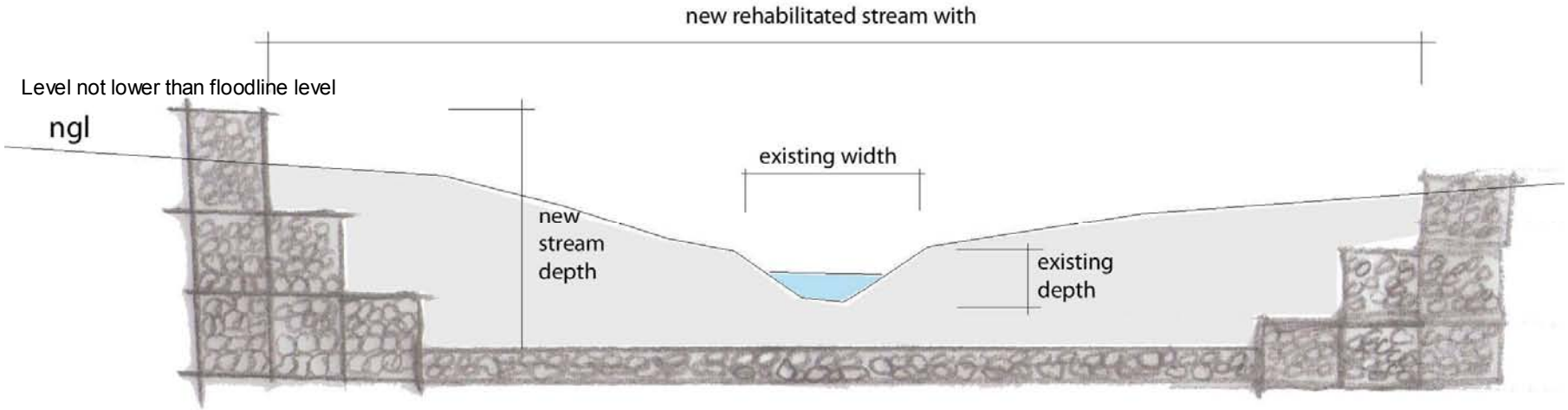


5.5.1 SOLUTIONS TO PROBLEMS

Floodline could be manipulated through:

- Lowering the flow level of the spruit, thus providing a greater volume space for the water flow.
- Through using gabions, the width of the spruit can be increased and also providing more space for normal water flow.
- These gabion retaining walls should be higher than the original level of the existing flood line.
- The new gabion retaining wall will act as the new security line to keep unwanted guests outside and children inside or safe from the water.
- By rehabilitating the spruit with the use of gabions, this could become a feature not only for the proposed rehabilitation centre, but for the surrounding area as well.
- The retaining wall within a 10 meter radius from the building on the north western wing, should be a reinforced concrete retaining wall to prevent water damage to the foundations of the building caused by access water filtering through the retaining wall, from the stream. This part of the retaining wall should also be 500 mm to 1000 mm higher than the existing flood line level.

Figure 101. Concept section of manipulation of flood line



5.5.2 SOLUTIONS TO FLOODLINE PROBLEMS

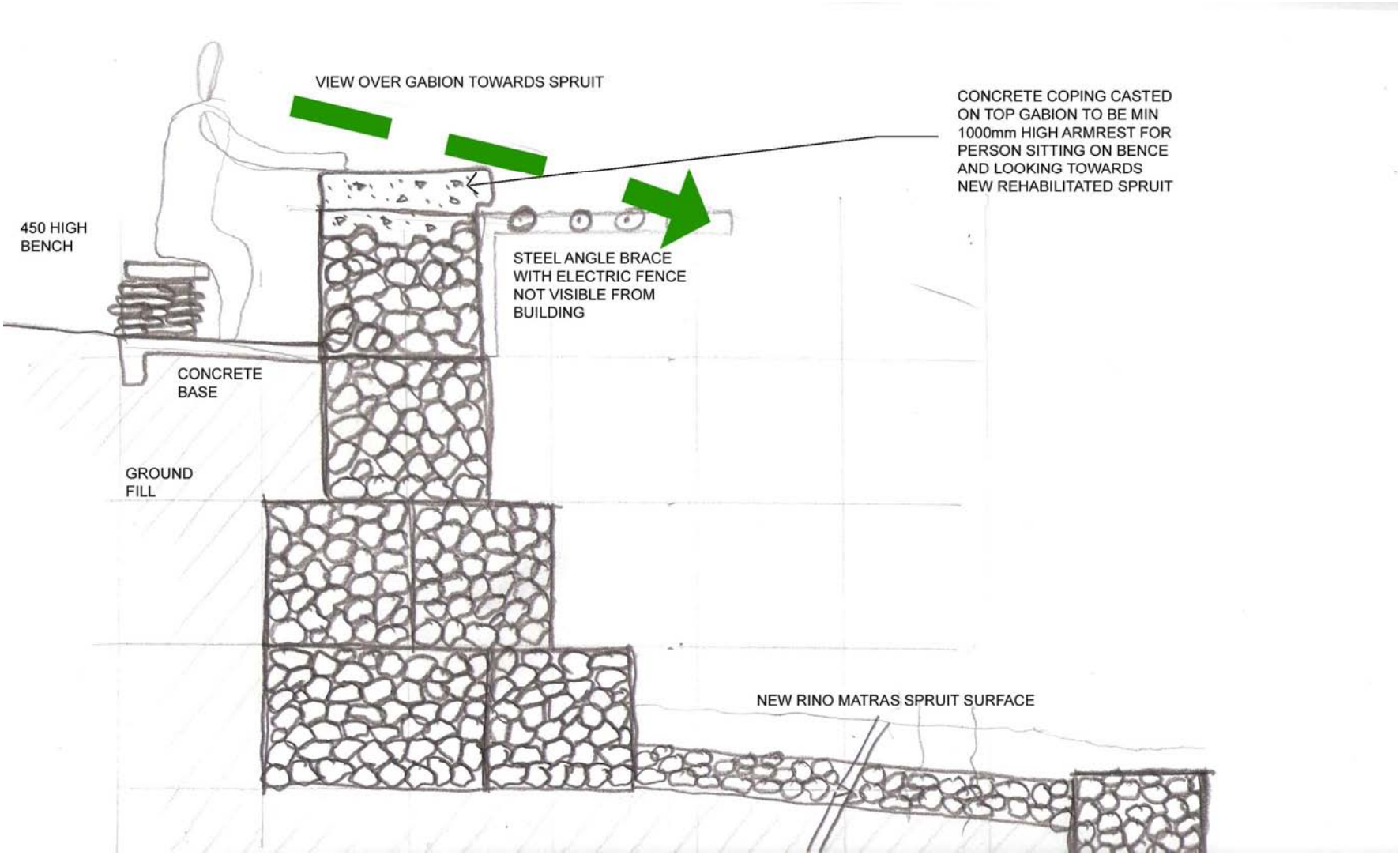


Figure 102. Section of gabion wall

5.6 MAIN ENTRANCE

Both the main entrance and the care room entrance are constructed of the same architectural style which would stand out from the rest of the building.

The two loose standing, concrete structures creates an asymmetrical, symmetry between the different wings of the building, which consist of the northern, southern and western wing.

Both entrances are made transparent to provide the incoming visitor the a view, either towards the play area or towards the green area and thus inviting them into the building.

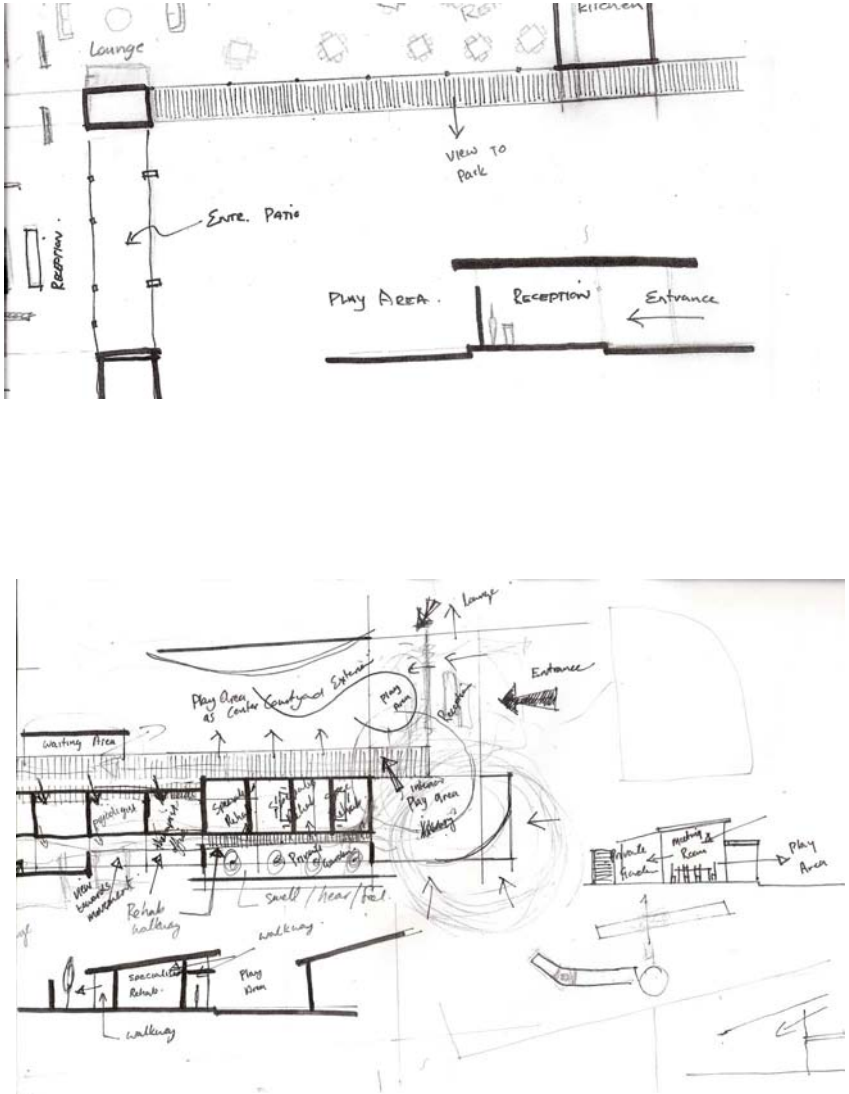


Figure 103. Concept sketches of main entrance

5.6.1 SENSES

Sight:

Before entering the building the visitor would see children playing with musical instruments in the specialized play area.

Children playing in free play area.

Smell:

Smell of plants from waiting/entrance park and food from restaurant.

Hear:

Hear sounds of laughter and children playing.

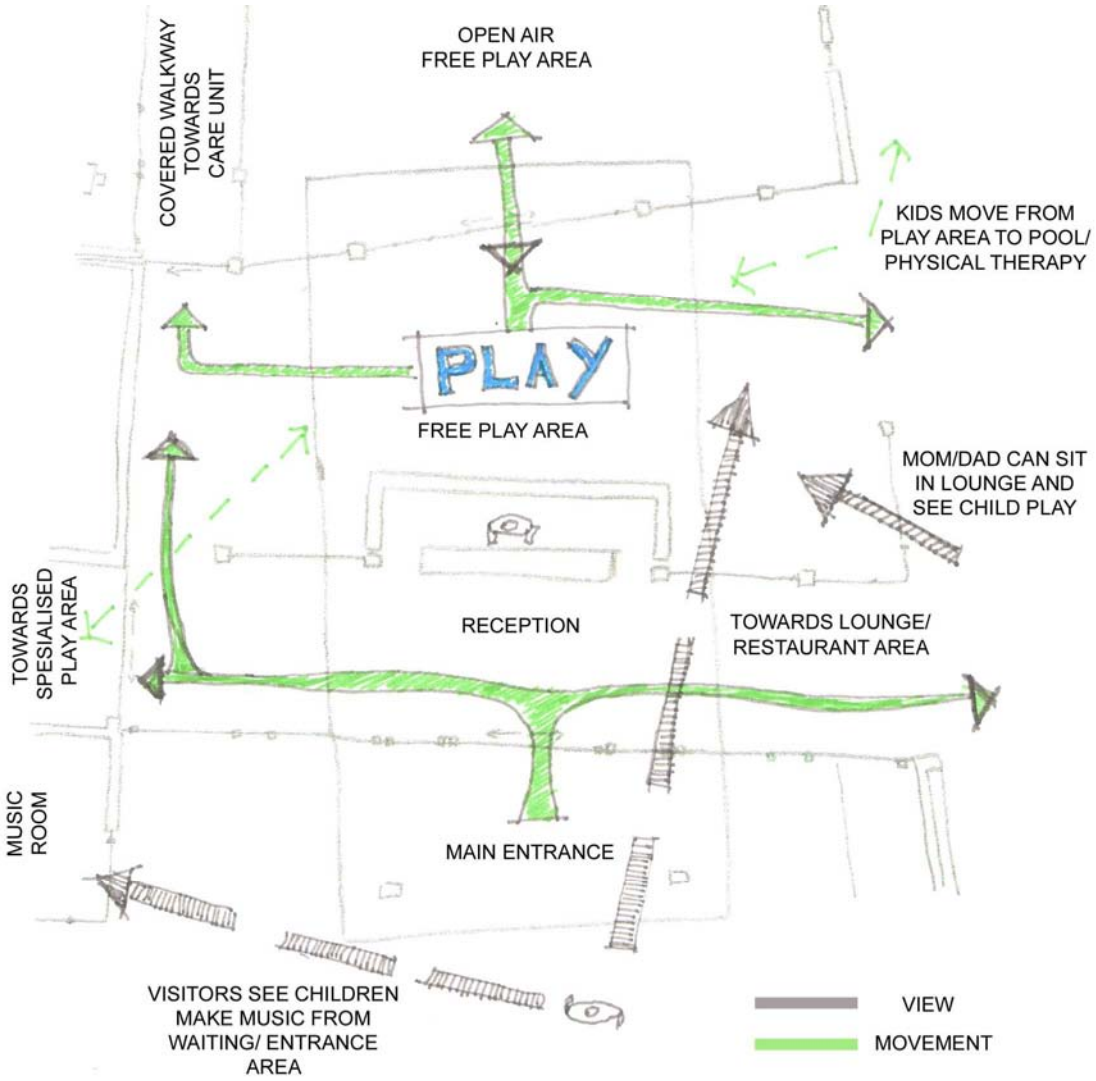
Touch:

Timber molded concrete walkway with Berg 'n Dal flush jointed face brick blocks would provide sensations when move over towards the entrance hall.

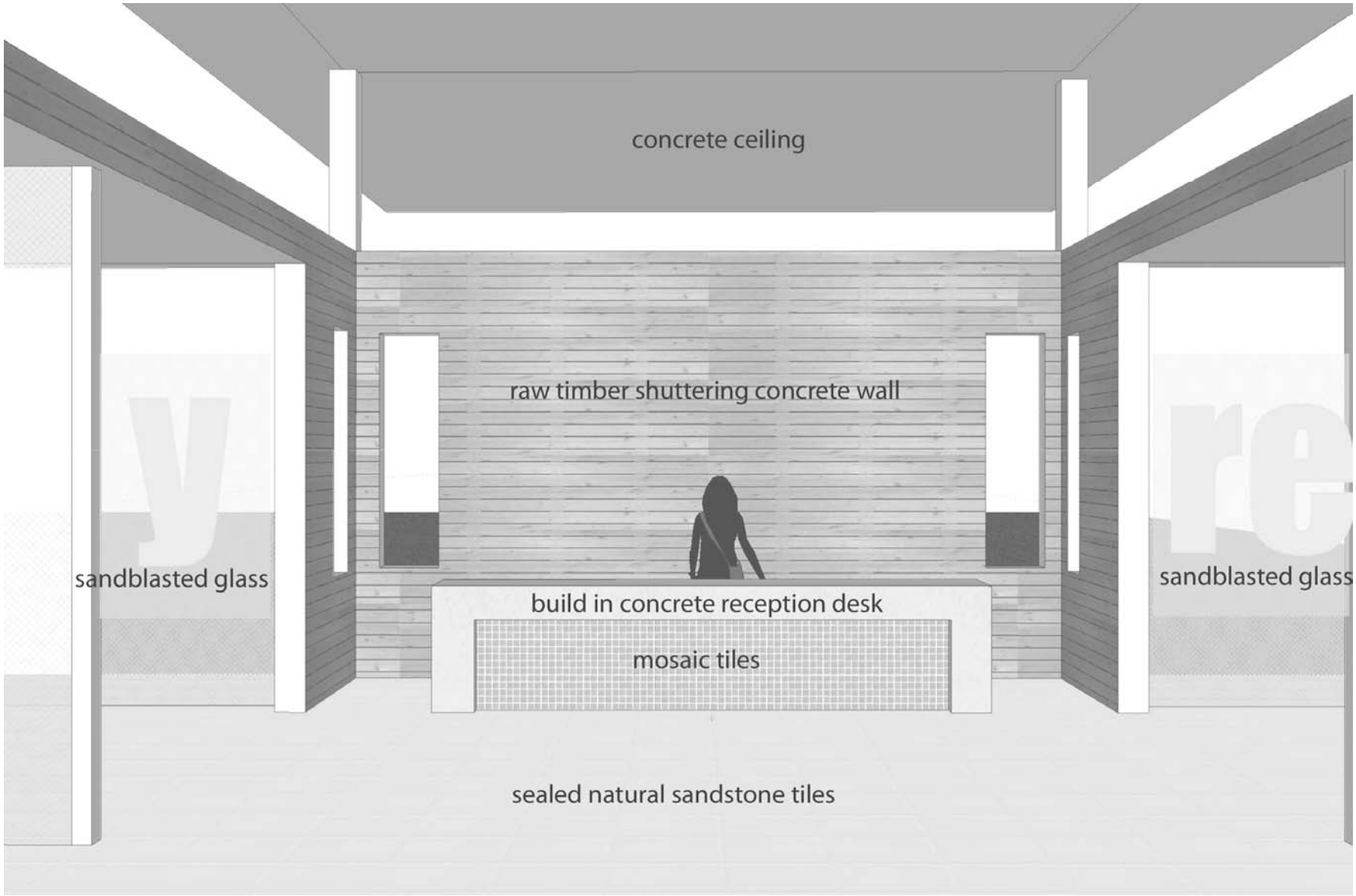
Tiles in building have large joints to create a gentle vibrating sensation through the wheel-chair.

These textures include: timber profile casted concrete in brick on edge face brick boarders.

Different textures could be touched.



5. MAIN ENTRANCE



SECTION

Take out

5.7 CARE CENTRE AND CONSULTING ROOMS ENTRANCE

This entrance would be use as an secondary entrance that is mainly dedicated to the consulting and care rooms.

This entrance would speak the same architectural language than the main entrance.

The entrance could be seen as a lass box with a concrete roof on columns. The entrance would act as a asymmetrical symmetrical link between the functional areas of the building.

When entering the reception area, the visitor would have a view on axis through towards the green area and social amphi-theater.

5.7.1 SENSES

SIGHT:

When nearing the care room entrance, the visitor will look through the “glass box” towards the green area. The social amphitheatre is on the same axis as the visitor enters the building.

HEAR:

Sound of the water from the water feature. Sound of laughter and playing of children.

TOUCH:

Natural sandstone tiles will create sensory experience through movement over it. Heat from fire place in winter days will be experienced.

Summer: Visitors would feel the cool breeze blowing in from the north.

Winter: visitors would feel the warmth of the fire place situated in the middle of the waiting area.

5. DESIGN DEVELOPMENT

5.8 SPECIALISED PLAY ROOM

This will be a fully equipped play area to keep the attention of the child for time period of 15 to 30 minutes.

During play, the parents could watch the play session with a therapist which would point out any mentally or physically features that the parent should know and attend to when back at home.

The play area have been connected with nature through their own private garden.

Northern sunlight penetrate this area through the top windows above the exterior covered walkway concrete roof.

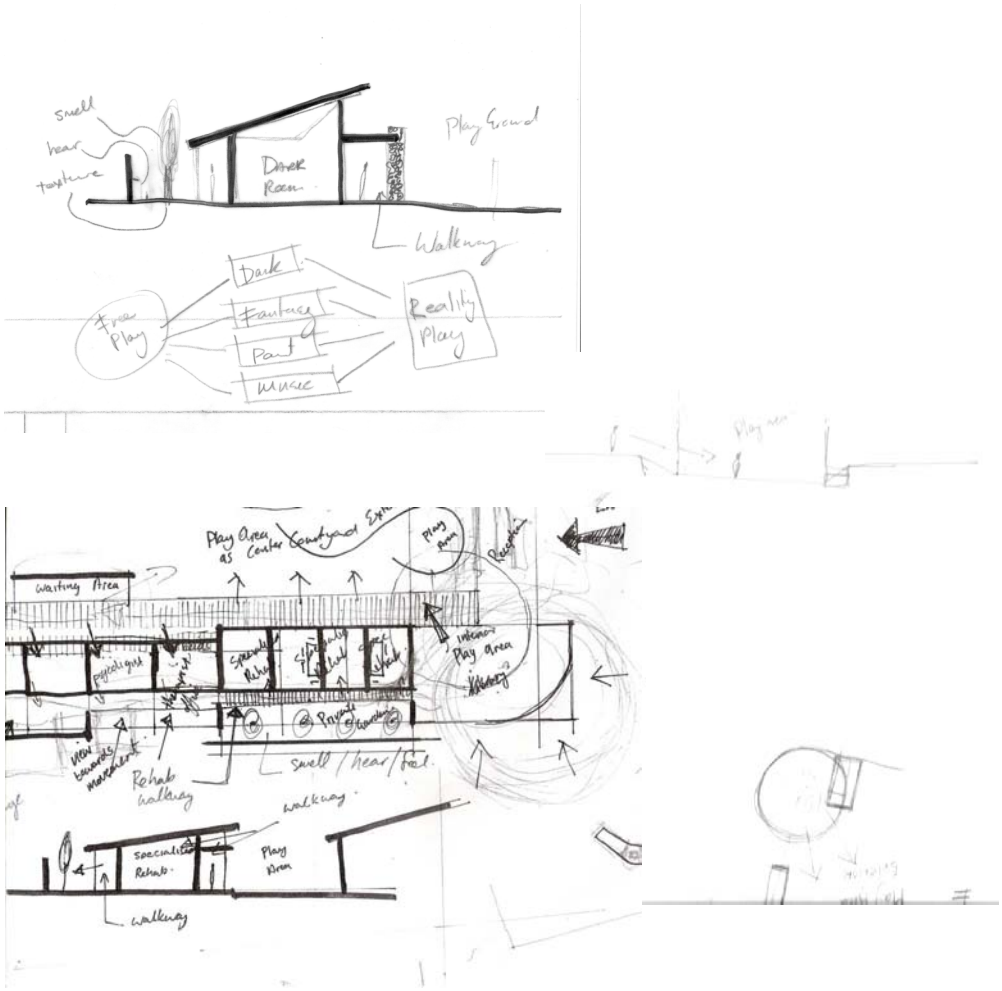


Figure 104. Concept sketches of specialized play area

5.8.1 HOW DOES THE SPECIALIZED PLAYROOM WORK?

The therapists will take child from free play area into the private specialized play area. Therapist play with child to build relationship with child. The same therapist would always work with the same child.

The child can choose any play, but need to stick with his/her decision. The theory is that any mentally or physically problems would eventually arise during play.

After 15 to 20 minutes of play, the child would be taken into the dark room, music room or the paint area.

MUSIC ROOM:

Here, the child would be able to express him/her self through music, whether its playing instruments or just listening to it in a soundproof environment.

PAINT ROOM:

The paint pit would be used for expressive paintwork.

DARK ROOM:

The dark room are used for concentration exercises as well as relaxing purposes.

Lava lamps and fish tanks are used for colour and relaxing sensations in the dark.

Concentration on exercises to move feet, specific fingers, specific lighting are used in the dark to make child aware of his/her body.

5.8.2 SENSES

SIGHT:

Children playing will be seen from the entrance/ waiting park.

Parents/caretakers would be able to see children in play therapy from private lounge.

Trees and water in the private garden would be seen from the specialized play area.

SMELL:

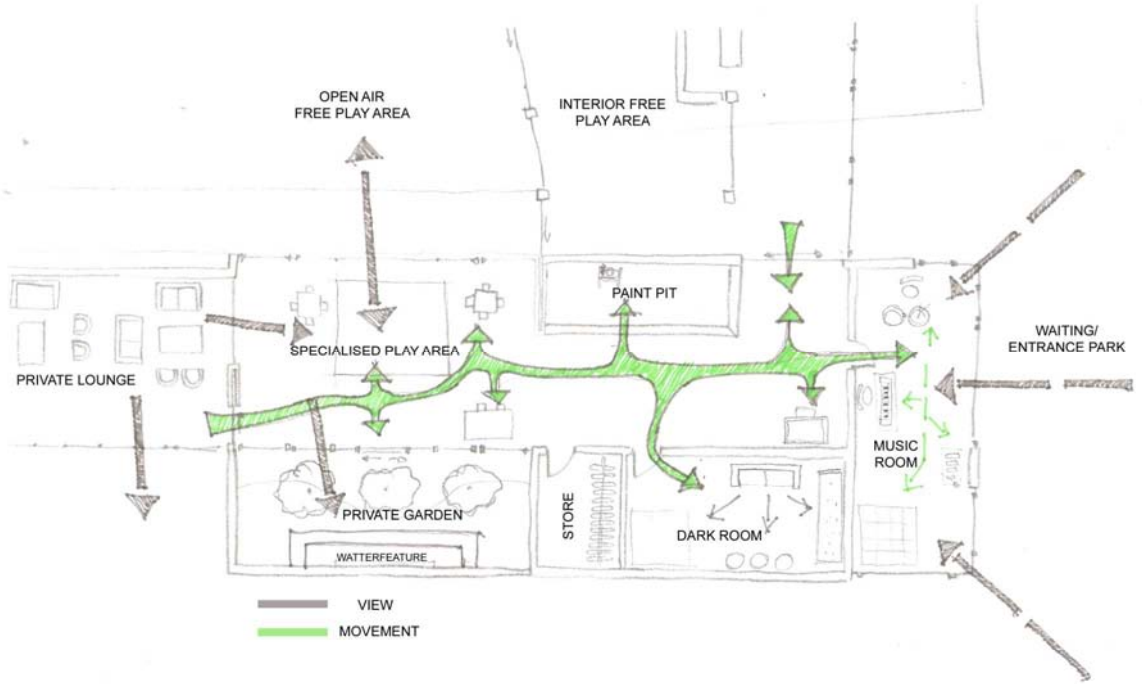
Plants that produce a strong aroma would be planted in the private garden.

HEAR:

Falling water from the water feature in the private garden.

TOUCH:

Playing with clay, paint and toys. Different materials could be seen and touched.



5.8 SPECIALISED PLAYROOM

SECTION

5.9 LOUNGE

5.9.1 SENSES:

SIGHT:

The use of glass as interior and exterior walls, makes various views possible. From the lounge, the visitor would be able to enjoy the following views:

- Towards Waterkloof spruit
- Towards pool area
- Towards free play area
- Chef while preparing food in open plan kitchen

SMELL:

Food from restaurant

HEAR:

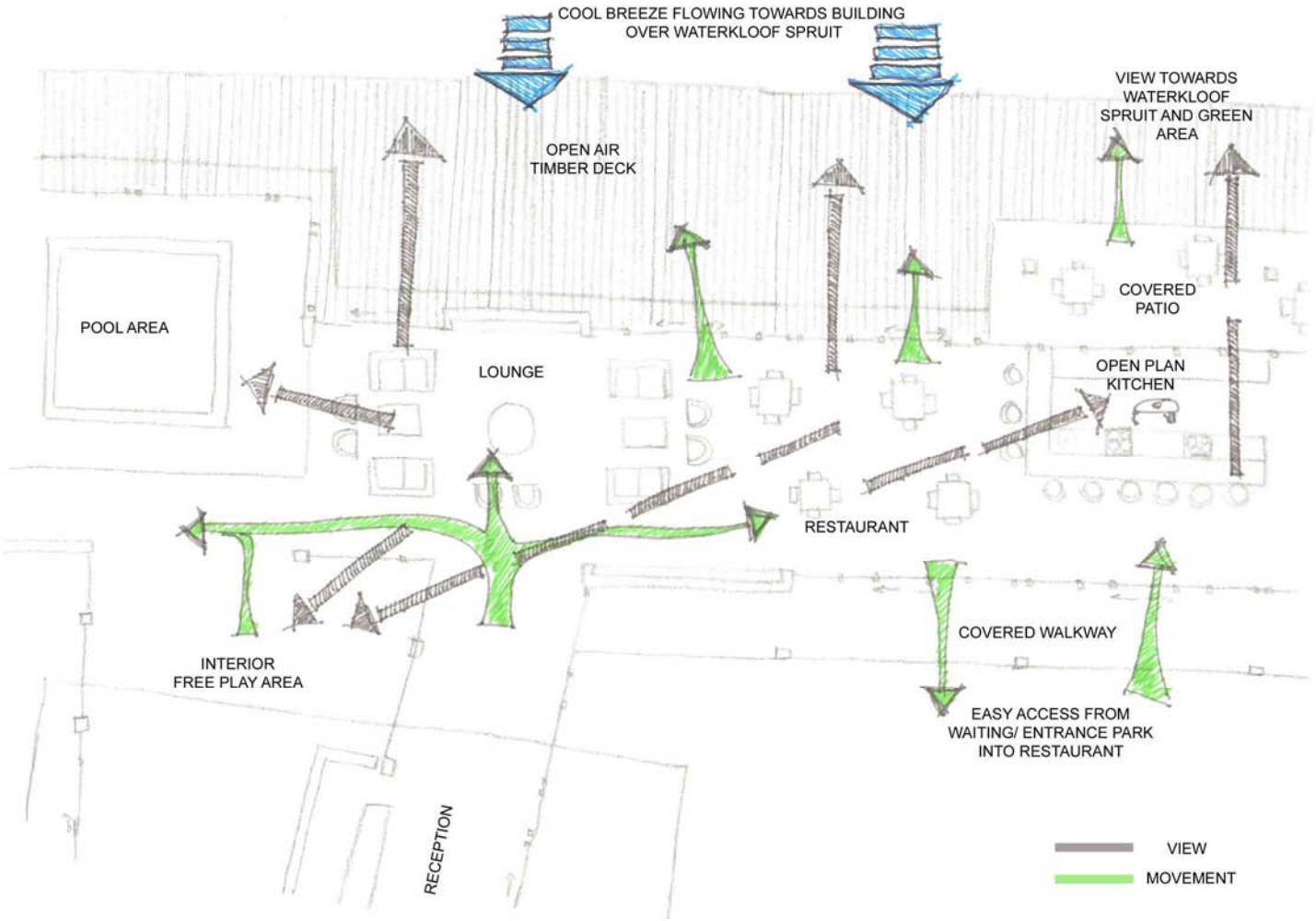
- children playing in the pool area and free play area.
- Birds in the trees to the north of the building.

TOUCH:

One would experience the cool breeze blowing into the lounge from the north.

The fire place would provide sufficient heat during the winter.

Wide joints between tiles would provide gentle vibrating sensation through wheelchair when moving over it.



5.10 OPEN PLAN KITCHEN

The open plan kitchen has been centered in the lounge and restaurant area.

Visitors sitting in the lounge are also be able to order from the menu and enjoy refreshments.

Open plan kitchen creates an informal atmosphere. The visitors are able to see the chef preparing the food.

Waiters would take the food from the kitchen counter to the visitor sitting at a table, in the lounge or the patio. When finished the waiter will pick up empty plate and take it to the scullery where it will be washed and taken back to kitchen.

5.10.1 SENSES:

SIGHT:

•View towards Waterkloof spruit

•View towards waiting/ entrance park

SMELL:

Food from kitchen

HEAR:

• **C**hildren playing in pool area and free play area.

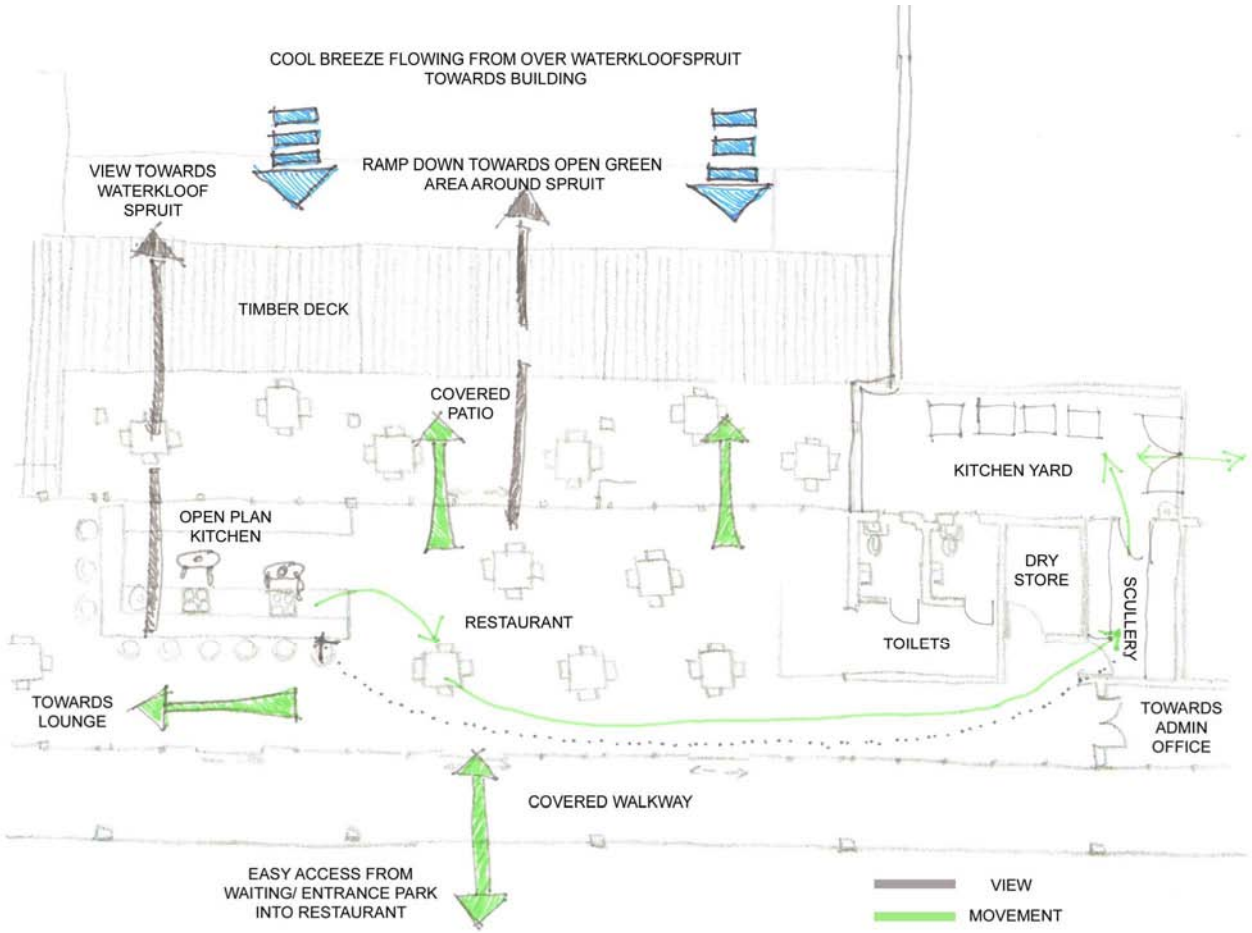
•Birds in existing trees to the north of the building.

TOUCH:

Experience the cool breeze flowing in from the north.

TASTE:

The different food in the restaurant.



5. OPEN PLAN KITCHEN

KITCHEN

MENU

ALL DAY HEALTHY BREAKFAST
Fruit salad & Yoghurt
Yoghurt and Muesli
Muffins

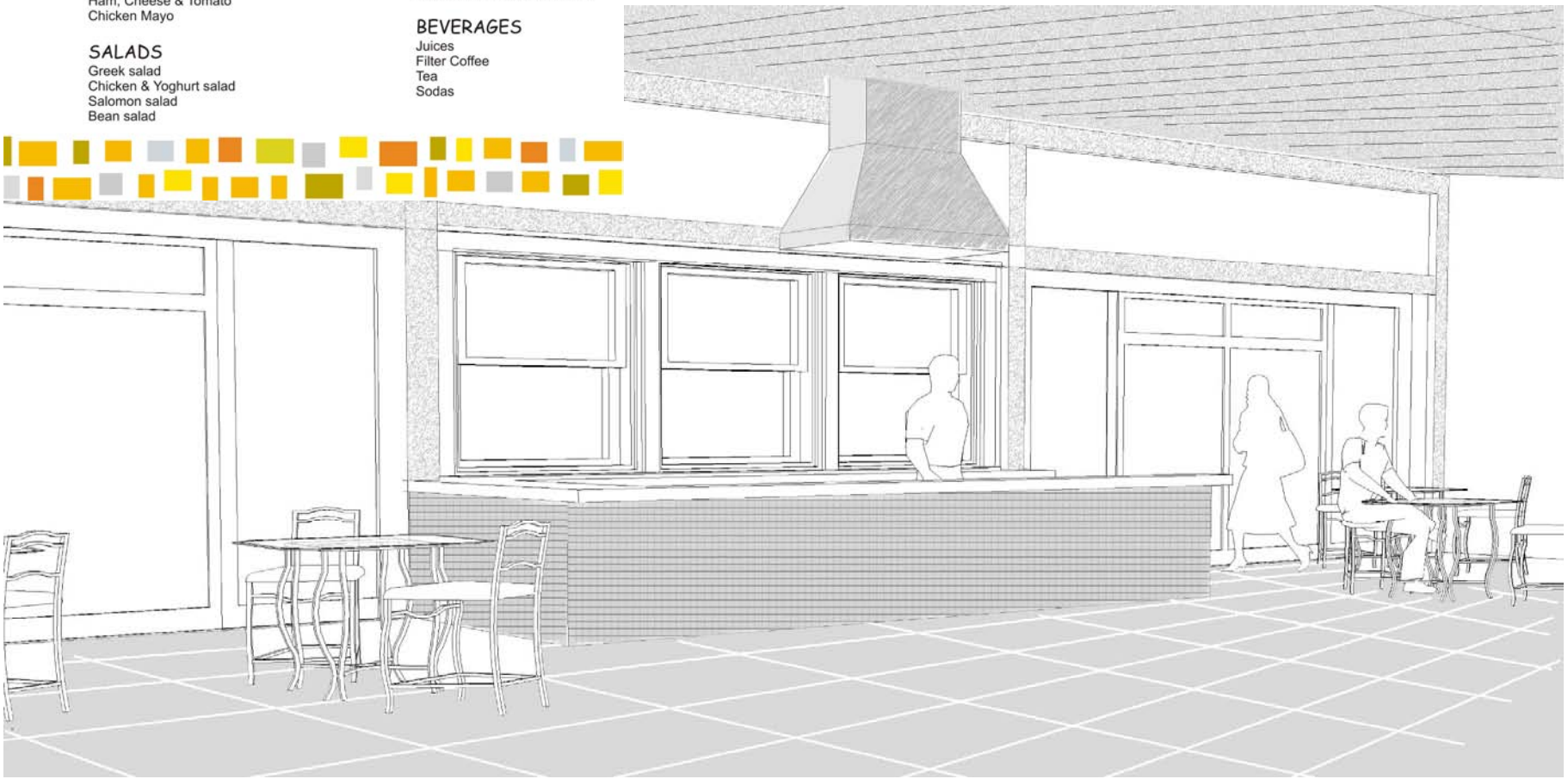
TOASTED SANDWICHES
White/Brown/Rye
Ham & Cheese
Cheese & Tomato
Ham, Cheese & Tomato
Chicken Mayo

SALADS
Greek salad
Chicken & Yoghurt salad
Salomon salad
Bean salad

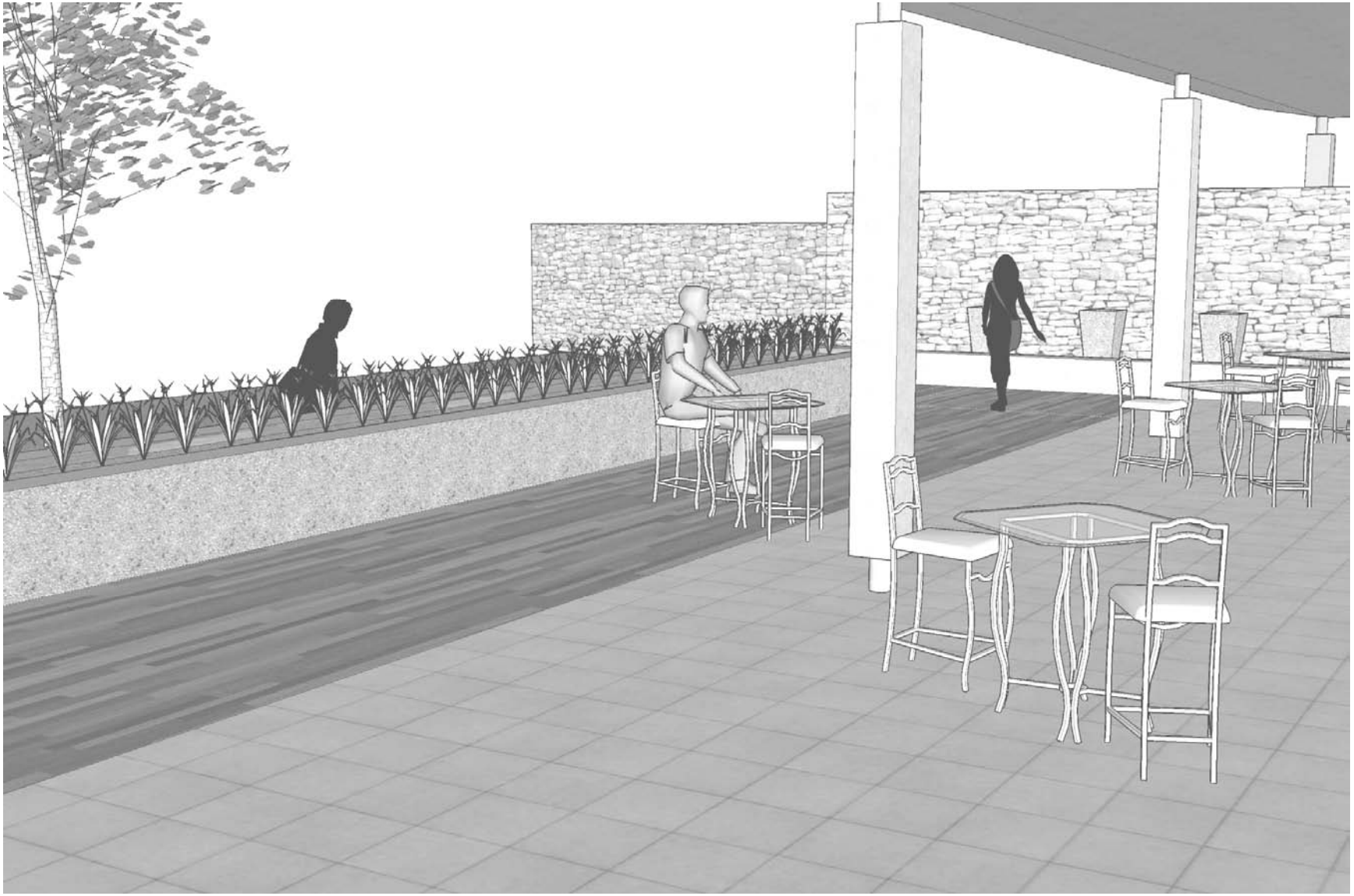
WRAPS
Chicken & Grapes wrap
Vegetarian wrap
Beef stirfry wrap
Bacon, Butternut & Sweetcorn

SWEETS
Assorted Cakes & Tartes
Ice Cream & Chocolate sauce

BEVERAGES
Juices
Filter Coffee
Tea
Sodas



RESTAURANT COVERED PATIO



5. OPEN PLAN KITCHEN

SECTION

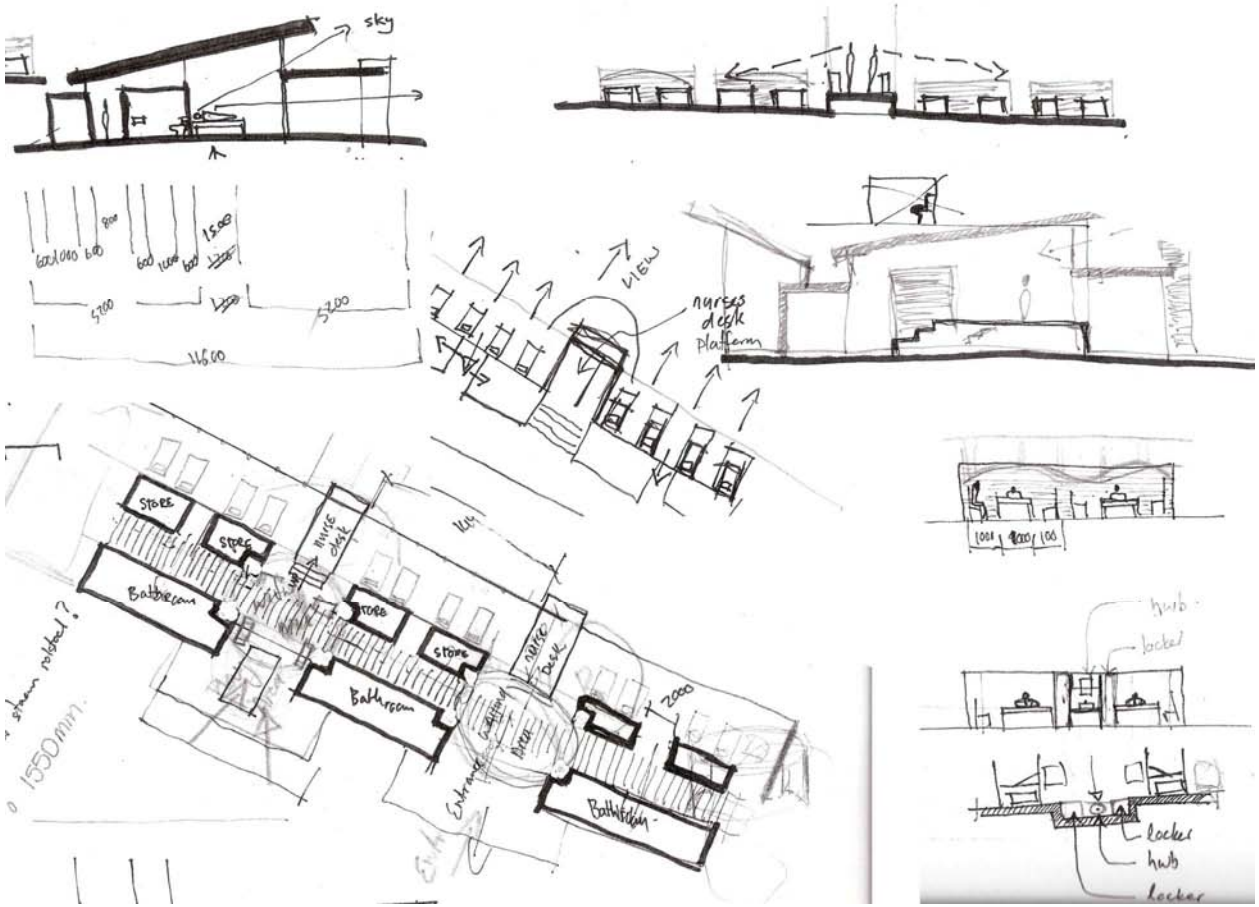
5.11 CARE ROOMS

The care rooms are designed to provide the patients with a sensory experience while admitted in the care centre.

Lying in bed, the child's senses would be spurred by the view towards the green area, and the natural sounds from the water flowing of Waterkloof spruit and birds in existing trees.

The elevated nurses desk has been designed to have a direct view over patients and play or waiting area.

When moving to the bathroom, the patient or visitors' way would be guided by light shining through skylight above. At night time, the patients' way of movement would be guided by light on tree visible from start of room.



5.11.1 NURSES DESK:

SIGHT:

- Nurses would have a clear view from an elevated desk towards the patients.
- View to play/ waiting area
- View towards the green area

HEAR:

- The children playing in play areas
- Sounds of birds in the trees

5.11.2 BEDROOMS:

SIGHT:

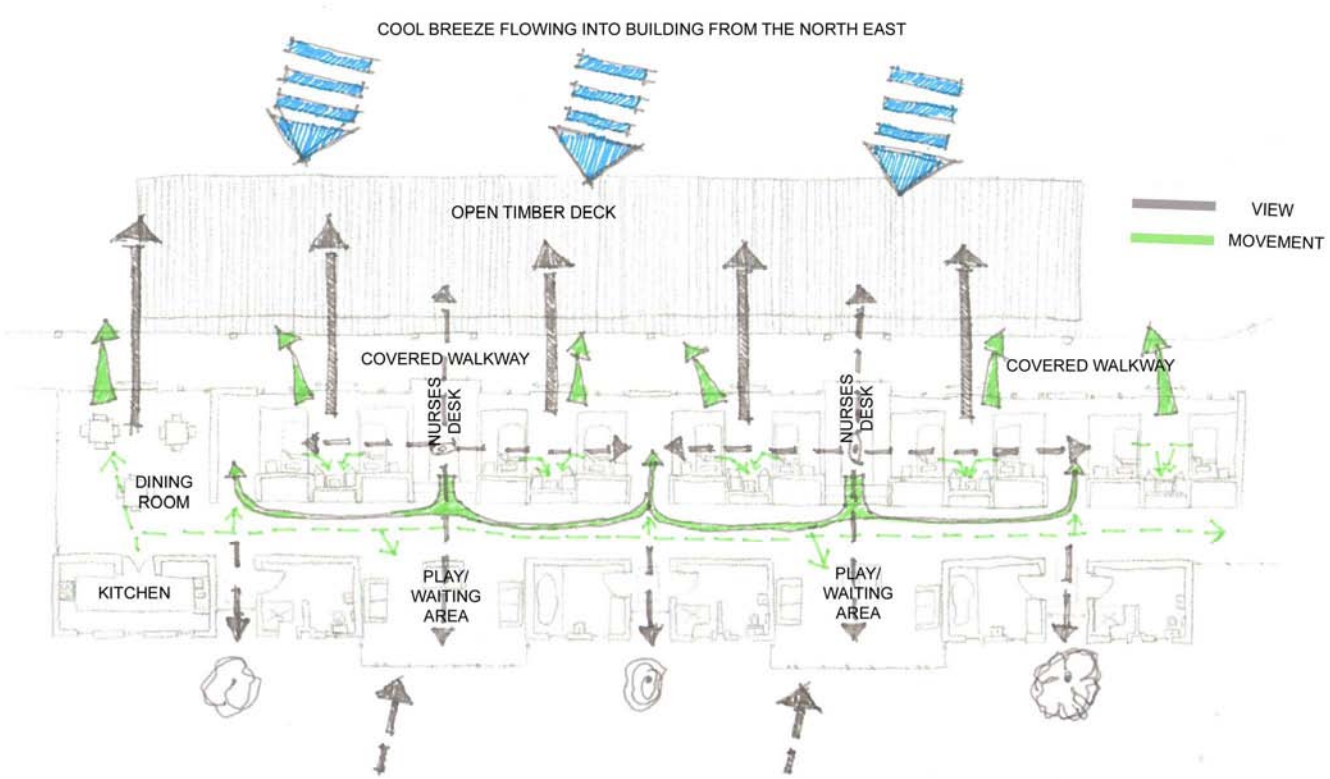
- From bed, the child would have a view towards the green area. This would contribute to a rehabilitation environment.
- When moving towards the bathroom during the day time, the pupil's movement will be led by skylights in the concrete roof above the passage to the bathroom. At night the patient's movement will be led by a lit up tree seen through the window at end of hall.

HEAR:

- Sounds of birds in existing trees
- Sounds of running water from rehabilitated Waterkloof stream

TOUCH:

- Different textures like natural timber cladding to bottom of nurses desk, rough natural sandstone floor tiles, smooth plaster finish and mosaic tiles to hand wash basin.



5.11 CARE ROOMS