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Reconciliation



Reconciliation

A sensorial recovery centre for the visually impaired community

By Chi-Ann Chang

declaration



I, Chi-Ann Chang, am a student registered for the M(Arch) Prof. course in the year 2018. I am aware that plagiarism (i.e. the use of someone else's work without permission and/or without acknowledging the original sources) is wrong. I confirm that the work submitted for assessment for the above course is my own unaided work except where I have stated explicitly otherwise.

I have followed the required conventions in referencing thoughts, ideas and visual materials of others. I understand that the University of the Witwatersrand may take disciplinary action against me if there is a belief that this is not my unaided work or that I have failed to acknowledgment the source of the ideas or words in my own work.

Chi-Ann Chang

Thank you to my supervisor, Garret Cranenner, and my fellow classmates of 2018. A Big Thank You to Max, my best canine friend, for reminding me of the small things in life that are most important. :)

Thank you to my sister, Olivia, for always making me feel bad for procrastinating and for making me home-cooked food.

Lastly, thank you to Nathan Newby. This year would have been incredibly difficult without you. Thank you for your guidance, for allowing me to dream big and for making me design what I want. Thank you for making me laugh when I was at my lowest, not just this year but all the years before this. I cannot thank you enough for everything, you're the 'bestest'.

abstract

The majority of our actions are dependent on our sense of sight. We browse through social media, dress according to the latest fashion, watch productions at the theatre, gaze in awe at tourist attractions; but what if we suddenly lost our sense of sight? How would we cope in that situation? How would we adapt?

There are many schools for the visually impaired however, the majority cater for children only. Vision impairment is the most prevalent disability in South Africa, but only 3% of visually impaired people are employed- the rest are 100% dependent on others.

My research will be focused on the experience of the visually impaired community on a daily basis. If the majority of the visually impaired are dependent on others, how can the built environment assist with this aspect? Is the urban fabric of Johannesburg catered towards the visually impaired community?

This research project aims to address the need for a centre, in a secure and comfortable environment, that can provide specialized care during the transition period of becoming an independent visually impaired person. Specialized care provided not only by people, but by the centre itself. The architecture of the centre will be specially designed as a catalyst to ignite the use of the other senses- sound, touch and smell. “Architecture is the art of reconciliation between ourselves and the world, this takes place through the senses” (Pallasmaa, 1996), a strong connection with the world on a deeper level enables one to form a meaningful relationship and in order to pursue that strong relationship one has to engage fully with the space by use of all the senses, not just sight.

Phenomenology is the study of being aware, being conscious of the surroundings and experiences but more important than that is the reaction to those surroundings and experiences. Can sensory phenomenology be implemented successfully into the built environment in order to assist with the visually impaired community? My aim to is to create a sensorial environment for the visually impaired to thrive in the other senses thus creating increased independence and confidence within themselves, allowing them to immerse themselves fully in the public realm.



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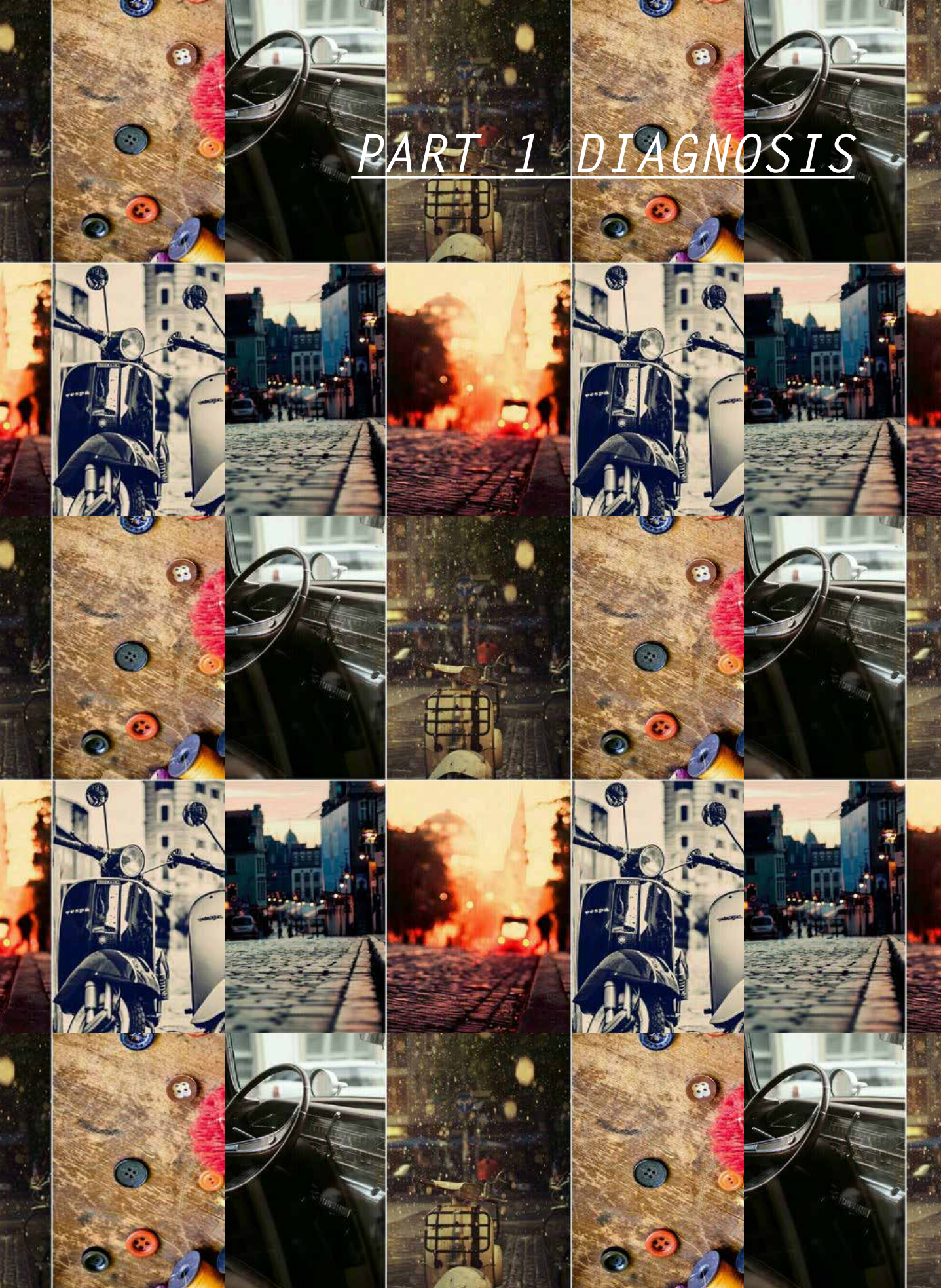
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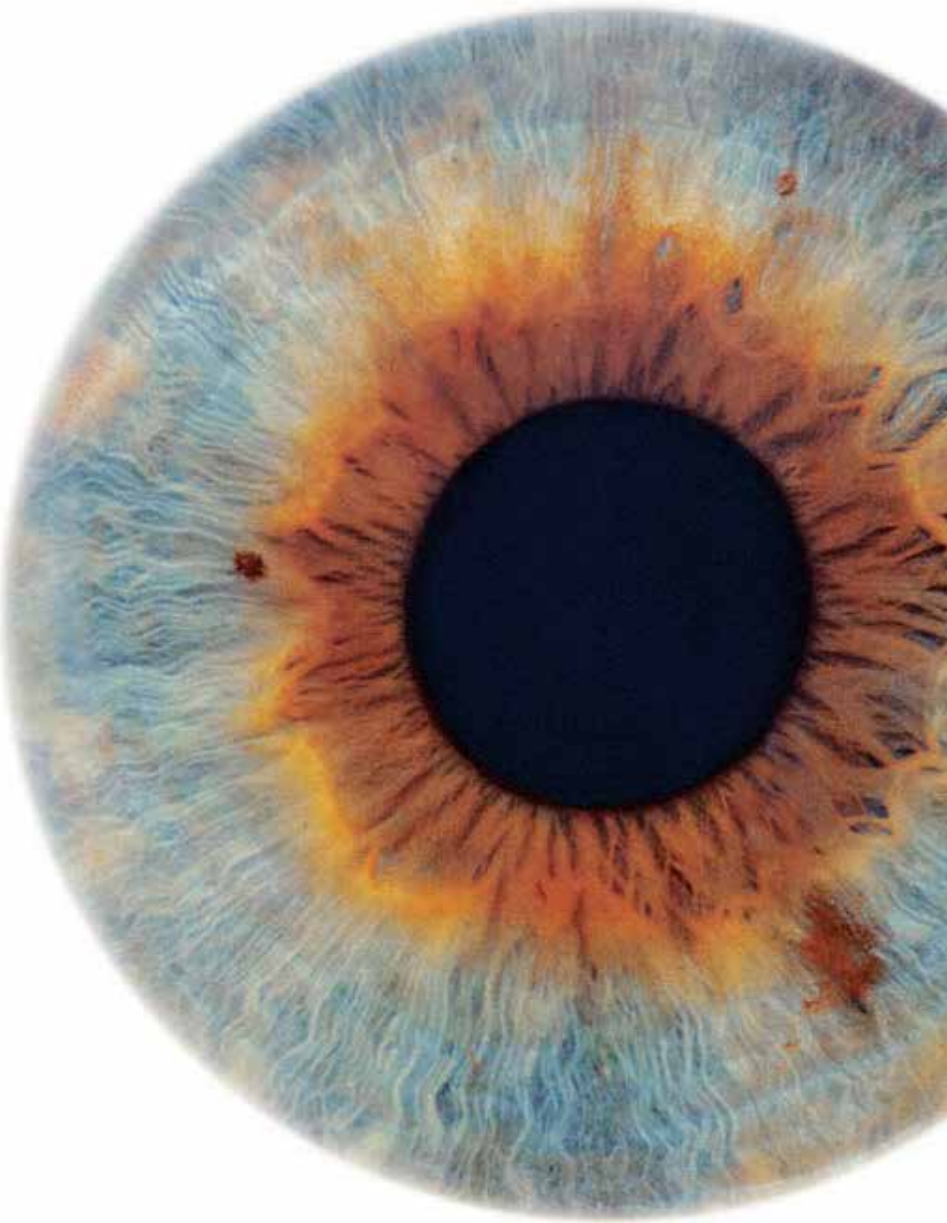
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PART 1 DIAGNOSIS



eyes

Vision has the tendency to dominate, fixate, secure and control us. With the increasing use of technology in our lives, we are allowing the visuals to dominate us more than ever before.

People are constantly obsessed of their external appearance, their first impression to strangers, keeping up to date with the latest fashion trends as well as their online image - their Facebook, Instagram or Pinterest page. These pages are often filled with imagery with the intent of creating a better appearance and impression of the actual person. It proves that the majority of people live life according to the eye, instead of living life in a deeper more meaningful, sensorial manner including the sounds, the fragrances, the touch in addition to the visuals.

“Our society is characterized by the cancerous growth of the vision, measuring everything by its ability to show or be shown and transmuting communication into a visual journey” (de Certeau, 1998). With the increasing use of smart phones and the social media boom, everyone is found fixated on an LED screen scrolling down into an endless pit of images with no real objective for doing so. This results in “a culture of mindless consumption, where there is no longer any possibility of meaningful discourse” (Leach, 1999).

Previous Page Fig 1.0
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Fig 1.2 The Anesthetics of Advertising

This makes me wonder, “Have people become so shallow that they are constantly updating their online visual profiles just to make a better impression? Is the image of a person or an object so important that we have become so obsessed about it on a daily basis?”

The term ‘aesthetics’ originates from the Greek term, ‘aesthesis’ meaning “the perception of the external world by the senses” (English Oxford Dictionary). This is ironic seeing as in a world of endless showers of images, we predominantly make use of only one sense - sight. Very often, people find themselves ‘experiencing’ the world through an artificial lens of a camera and continuously photograph ‘aesthetically pleasing’ images. This results in the transformation of the aesthetics of everyday life to the anesthetics of everyday life that enforces control over people as mentioned in *The Anaesthetics of Architecture* by Neil Leach.

Aesthetics are also abused in the world of advertising as images are created and designed with the aim of instantly persuading people into purchasing an item just by a display of a relaxing, luxurious lifestyle, fantasy and escape, a beautiful and confident person or even just the simple use of seduction in order to “enchant the viewer on a purely visual level and to prevent any deeper level of inquiry” (Leach, 1999). The advertisement on the left presents a group of confident smartly dressed men consuming alcohol, suggesting that the consumption of alcohol will lead you to that ‘high’ social status or at least allow you to appear confident and intelligent.

Similarly, architecture can easily become a task of instant persuasion as well. “Convention dictates that architects should see the world in terms of visual representation- plans, sections, elevations, perspectives and so on. The world of the architect is the world of the image” (Leach, 1999). We witness it on a daily basis where we become so enticed by beautifully designed drawings that, at times, we forget to be critical of the main topic- the actual architectural proposal.

“Modernist design at large has housed the intellect and the eye, but it has left the body and the other senses, as well as our memories, imagination and dreams, homeless.”

(Pallasmaa, 2005)

the world of the image

"The world of the architect is the world of the image" (Leach, 1999). Many would attach this statement to the Modernism era, it is assumed that only the visuals dominated this architectural movement. However, Modernism began with good intentions during a revolutionary yet difficult period in history. One has to understand the driving forces in order to recognize its true intention that somehow became lost in the superficial imagery of strict geometries compiled in an appealing manner.

The aim was Modernism was to rediscover new forms that would represent the modern industrial age and become a "culture of the machine" (Curtis, 1996). Modernism aimed to discover the true form of architecture as its societal norms began to transform with the age of industrialization and the war. Industrialization brought about a new means of construction where steel was used more often and reinforced concrete was invented. The post-war years brought many issues along with it such as housing crisis and a hope for something new, a clean start to society.

Modernism hoped to achieve an 'International Style' where historical traditional forms would not be present and its meanings would only be representative of the modern times.
The creators strove for universality- to be understood by all people, no matter the cultural background. Its common characteristics were the use of simple geometrics, the use of white plaster, a modernized 'free' plan, and a sense of defying gravity.

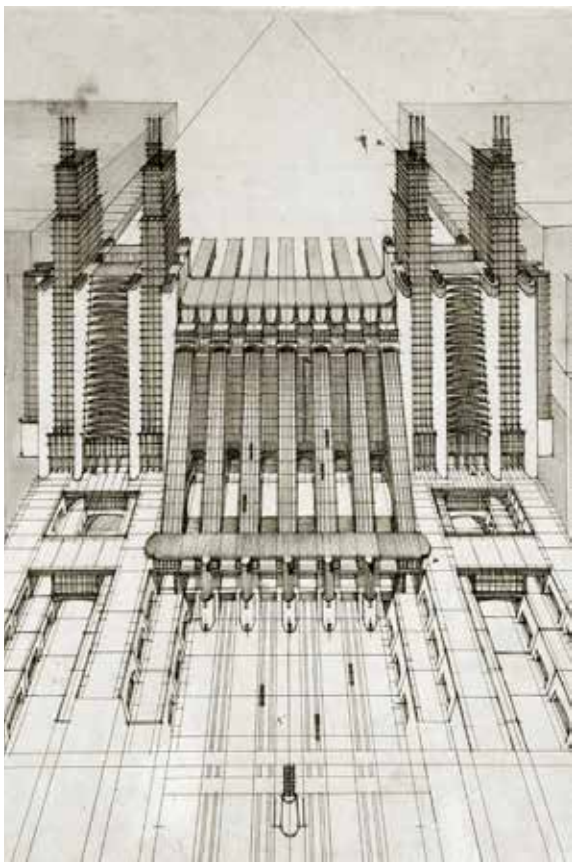
The new forms created were still slightly reminiscent of classical, traditional forms; it was only simplified and abstracted so as to "isolate their subject, to oversimplify it, to highlight its uniqueness in order to show how different the new creature was to its predecessors" (Curtis, 1996).

There were many driving forces that initiated Modernist thoughts however, one that stands out distinctly at an early stage is the essay, *The Use and Abuse of History,* published by Friedrich Nietzsche in 1873. Nietzsche explains that in order to express the inner potential, one needs to rid itself of the past completely. Many felt that traditional forms were exhausted and felt the need to a fresh clean start.

A young architect, Antonio Sant'Elia, was not hesitant to reject the past completely. Sant'Elia even formed a group named the Futurists. This group compiled a manifesto and exhibition that was headed by Sant'Elia himself in 1914. This exhibition showcased his drawings of a theoretical future consisting of "the anti-natural tendencies of the modern city" (Curtis, 1996).

"We must invent and rebuild ex novo our modern city like an immense and tumultuous shipyard, active, mobile, and everywhere dynamic, and the modern building like a gigantic machine... rich only in the inherent beauty of its lines and modelling, extraordinarily brutish in its mechanical simplicity... Such an architecture cannot be subject to any law of historical continuity. It must be new as our state of mind is new... In modern life the process of consequential stylistic development comes to a halt. Architecture, exhausted by tradition, begins again, forcibly from the beginning" (Antonio Sant'Elia from Curtis, 1996: p109)

This clearly states a rejection of all historical form for that matter. It aimed to create a new

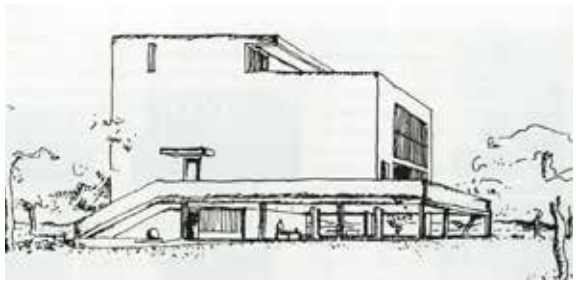


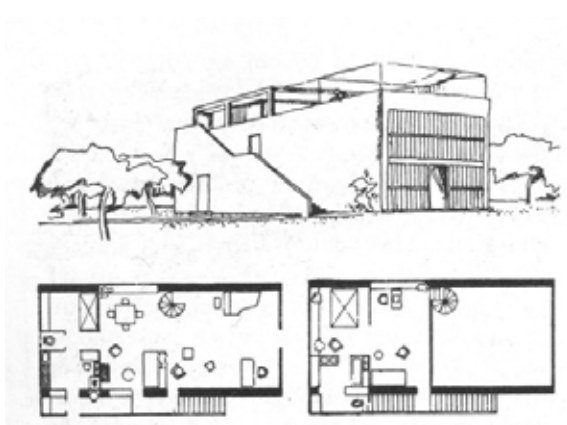
Above Fig 1.3 Antonio Sant'Elia's Futurist Drawing

abstracted form of architecture that was free of ornamentation and showcased a celebration of the new materials of the ongoing industrial era. As a result, "a gigantic machine" (Sant'Elia from Curtis, 1996: p109) was indeed created; a new type of architecture of an appealing indestructible nature was portrayed.

In addition to Antonio Sant'Elia's Futuristic ideals, the art world was also leaving a strong impression on early Modernist thinkers. It is understood that the underlying theme of the quest for modern forms was clearly the simplified abstracted methods for expression and this was notion was accelerated by Cubism and thereafter, Purism.

From the notable Cubist artworks, came the De Stijl movement which contributed to the modernist architecture ideals of asymmetry,



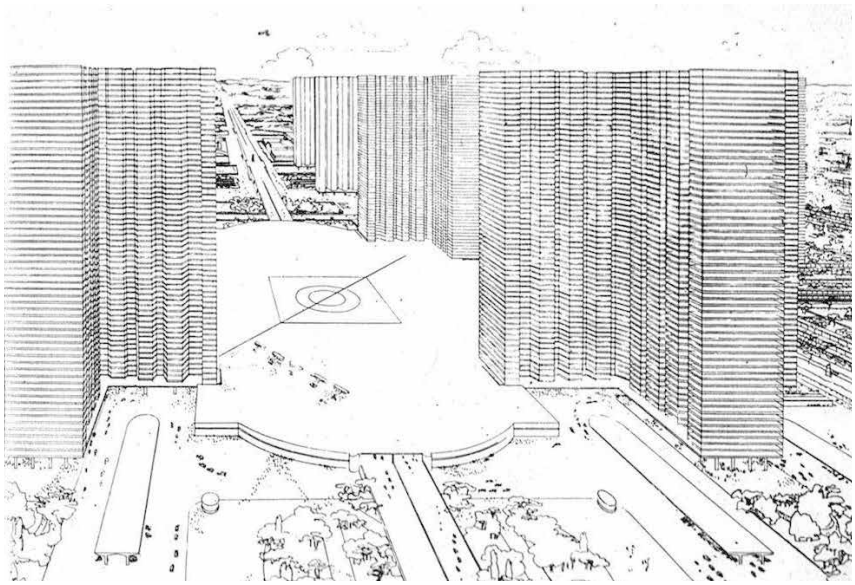


interactions of voids and forms, and extension of planes. This was clearly influenced by the abstract paintings of Piet Mondrian. The exemplary work of De Stijl is the famous Schroder House which is, quite easily, the epitome of the De Stijl movement

The post-war years resulted in a growing need for a solution to mass social housing. Le Corbusier's prototype, Citrohan, was intended to be mass produced in order to solve the crisis. Interestingly, the name 'Citrohan' comes from 'Citroen'. Similar to the car manufacturer that mass produced 'transportation machines', the Citrohan was a "machine for living in" (Le Corbusier from Curtis, 1996: p171). The reinforced concrete enabled large uninterrupted interior volumes and standardized rectangular windows. Similar to Sant'Elia's Futurist architecture, the proposal "envisaged a way of life freed from the unnecessary clutter of the customary bourgeois dwelling of the time" (Curtis, 1996). It cleared away all visual disruptions in order to pave the way for a healthier lifestyle however, the focus in the Citrohan is the visuals- the clean walls and bare interiors were intended to serve only the necessities for living.

Villa Stein is one of Le Corbusier's notable modernist works, it showcases the ideals of Modernism evidently such as the visual play of the building's weightlessness as heavy bands of white plaster rest on thin bands of glazing on the facade. However, there are subtle clues that historical forms are still at play, "its harmonic proportions and its noble mood revealed a pervasive classical sense" (Curtis, 1996). The aspects which emphasize this are the celebratory processional approach and the symmetry as well as the rhythm along the facade. Perhaps this was evidence against Friedrich Nietzsche's essay, *The Use and Abuse of History* simply due to not being able to rid itself of the past completely.

Above Fig 1.4 Citrohan Perspective
Below Fig 1.5 Plan and Perspective of the Citrohan



It is important to know that while Industrialization was advancing at a rapid speed, not only was there a dramatic technological transformation- there was a social transformation occurring simultaneously. It transformed the comfortable traditional social life to an urban industrial life. The city centres became overpopulated with the working class resulting in unpleasant conditions and "a slum landscape of factories, tenements, and grimy streets without decent communal or private amenities" (Curtis, 1996: 241). Louis Sullivan, also known as Chicago's "Father of Skyscrapers" (Stott, 2018) acknowledged this situation by stating:

"The architects of this land and generation are now brought face to face with something new under the sun – namely that evolution and integration of social conditions, that special grouping of them, that results in a demand for tall office buildings... How shall we proclaim from the dizzy height of this strange, weird modern housetop, the peaceful evangel of sentiment, of beauty, the cult of higher life?" (Sullivan, L., 1896 from Curtis, 1996: p 33)

Modernist architects began to focus their attention on the macro scale of the city. The issues to address were incorporating a new means of transport into the city circulation towards capitalist developments, overpopulation and the "slum landscape" (Curtis, 1996: 241) as well as the loss of the humanistic experience- social life and nature.

Contemporary City for Three Million Inhabitants was Le Corbusier's proposal for the post-war modern city. It was "seeking a grand synthesis of mechanization, geometrical order and 'nature' " (Curtis, 1996: 246). It portrayed a simple orthogonal plan with a circulation running along the central axis, clusters of skyscrapers located around the central point reserved for professionals whereas the industrial zone and suburbs for the working class were further away on the outskirts. This resulted in a reinforced division between society. Perhaps this "crushing uniformity" (Curtis, 1996: 248) was the first alarm signal of the dangers of the machine age. The result of it could also be seen as a forceful means of foreign invasion as the forms were so alien to the original landscape, the very sight of the towering foreign skyscrapers would have

Above Fig 1.6 Contemporary City for Three Million Inhabitants

"everything was done to plaster over differences and preserve the facade of a unified front"

(Curtis, 1996)



Above Fig 1.7 Unite d'Habitation's Modular Facade

either repelled or attracted the citizens; either way, Le Corbusier achieved it by means of shocking contradictory imagery.

Le Corbusier completed Unite d'Habitation in the 1950s, after he had some time to a rustic seclusion in the Pyrenees, it could be said that it was due to this seclusion that his extreme machinist ideals may have softened slightly. We see this a faint suggestion of this in this mass housing block.

The architect still made use of the calculated method in order to carefully organize the layout and facade in an aesthetic manner by means of a modular system. Elements in the apartments were still standardized and the genius section was solved as an improvement of the Citrohan. The roof terrace was to serve as a break away space from the city, it housed different activities and services which appeared to be nestled amongst the landscape of the Provencal mountains. While taking in the view, "one is forcibly affected by the Corbusian dream of the good life- his antidote to the squalor of the industrial city (Curtis, 1996: 438). In addition, Le Corbusier's usual roof terrace was now introduced with sculptural organic forms which could be reminiscent of Gaudi's roofscape in the Art Nouveau era. Before this, Modern architecture was predominantly geometric in order to depict the machinist ideals however, these new organic forms could be related more to the experience of the user instead of pleasing the sight of the user. This is evidence of the architect's increasing tendency towards a more humanistic architectural stance yet still maintaining a visually dominant architectural design.

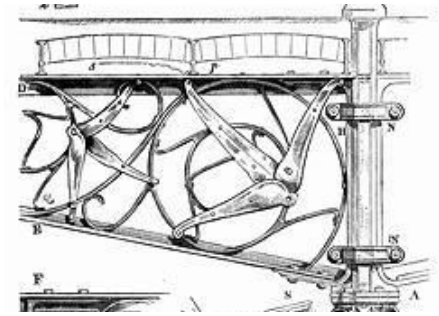
Modernism was not only driven by the machine age and its resulting calculated geometries, it was also largely driven by Art Nouveau, the movement began as a reaction to the classical scenes of the Beaux-Arts period in order to

steer towards more sculptural and natural forms. It was seen as an era that combined the industrial nature of the society at that time with the Arts and Crafts movement that everyone was trying to forget.

Every detail of every element in a project was intended to be designed in order to enhance the overall appearance. The meticulousness of this skill is evidently seen in Victor Horta's work where every corner of the building is designed for; from the stair to the balustrade, the floor mosaic tiles to the support brackets for the beams. Horta's Hotel Tassel is a worthy testament to the ideals of Art Nouveau where it showcases the beauty of the organic in every possible way. Horta achieves this through one method only and that is by creating embellishments for the eye while the organic scent, touch and sound remain uncaptured.

Although the imagery remained important in the Modernism movement, there were subtle clues of architects beginning to steer away from only the visual aspect. Buildings began to consider materiality within a space and what the effects would be, resulting in a variety of tactile experiences instead of just the cold and bare plastered walls which were meant to force one's thoughts into a fresh state of mind and begin anew. There is evidently a slight transformation towards an all inclusive experience in terms of the senses.

Plastered white walls was undoubtedly the most common material in the Modernism movement especially with the ease of reinforced concrete but the industrial age brought the ease of metalworks as well. Maison de Verre certainly takes advantage of this to truly emphasize the machine-like quality without the use of abstracted white walls. The architects, Pierre Chareau and Bernard Bijvoet, made use of glass brick, thin steel members and stone for this dwelling, it could be said that







Above Fig 1.8 Victor Horta's Detail Drawings
Middle Fig 1.9 Hotel Tassel by Victor Horta

Below Fig 1.10 Maison de Verre's Machinist Facade

it was a reinterpretation of Japanese timber construction as the glass bricks filtered soft light into the voluminous interior space and warm timber paneling was used to soften the interior against the exposed bolts and steel tubes. The overall mechanistic theme was extended further to the specially designed mobile furniture - folding chairs, sliding doors, and adjustable louvres. Although, Maison de Verre is mainly dominated by the visuals of filtering light, timber paneling and exposed construction joints, it is one of the few examples of Modern Architecture which possibly begins to introduce a sense of tactility as the material palette makes way to include the use of stone.

Similar to the Art Nouveau movement, Frank Lloyd Wright successfully combined the aspects of craft and industry. His works contained a limited palette of Arts and Crafts yet still emphasized the bold geometric line as well as integrating it all with the natural world. Wright published the paper, *The Art and Craft of the Machine* explaining that the lines of the simple geometric forms are easily rendered by machines but the architect must understand and manipulate that advantage into creating a "decent and uplifting environment for new patterns of life" (Curtis, 1996).

In Robie House, Wright emphasized the geometry by the concrete bands, the large roof overhang in elevation and the use of elongated exposed bricks with deep shadow lines in the horizontal mortar joints. The horizontally focused lead stained glass windows and the overall elongated plan of the house also paid tribute to the ideals of Modernism however, Wright's works stand out significantly from any other Modernist architect as his exemplary use of materials and details sets him apart.

Frank Lloyd Wright's influence extends to the Schindler / Chase House by Rudolph Schindler, only much more simplified. The Schindler / Chase House was a success in response to its context and in creating a comfortable shelter for the human by attempting to draw the outside environment in. Once again, there is evidence of the Modernist elements such as the emphasis of the horizontal geometry due to the bands of clerestory windows and the long timber beams enhancing the continuity of the line. The construction techniques took advantage of the machine- inspired by a development by Irving Gill, Schindler made use of a 'concrete tilt-slab technology' whereby the walls were cast on the ground as slabs and lifted into place afterwards. In between these concrete wall panels were

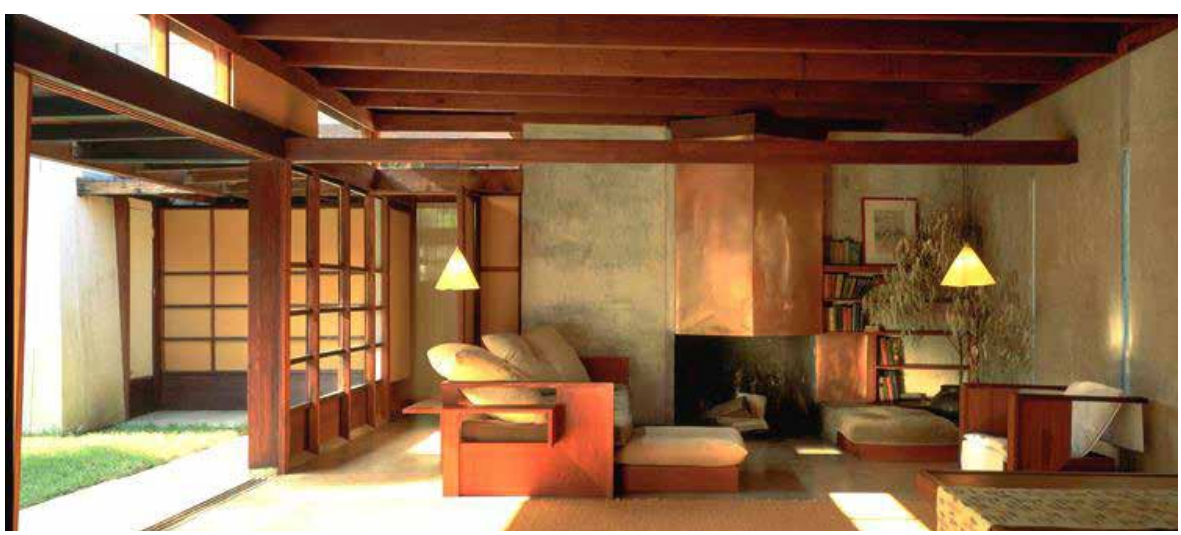


Fig 1.11 Schindler / Chase House

thin slithers of glass that introduced a “tranquil rhythm and luminous calm” (Curtis, 1996). The Schindler / Chase House still portrays Modernist elements yet it also begins to introduce more attention to the human experience by adding various materials which contribute to tactile experience. It also begins to blur the boundaries between exterior and interior in order to bring nature closer to the family. This further enhances the experience by including a scented aspect as well as possibly an audible encounter with the natural landscape.

In the 1930s, Modernism began to grow further outwards extending its knowledge to other regions that contrasted to its original environment, there was evidence that geometries “became more complex and ‘organic’, that facades became more textured, that finishes and materials rejoiced more in ‘natural’ effects such as weathering” (Curtis, 1996: 306). Clearly, a more intense preoccupation with nature began to occur. We see this clearly in notable works such as the Barcelona Pavilion by Ludwig Mies van der Rohe and Falling Water by Frank Lloyd Wright where materials are honestly portrayed instead of plastered over and there is a distinct healthy dialogue with the surroundings. Neither belittles the other and both compliment each other. Yet, both still rely on the observation of the occupant, neglecting the use of other senses.

As soon as the name Le Corbusier is mentioned, one immediately links the name to the Modernism movement however, it is interesting to note that the famous Le Corbusier was not just a modernist genius from birth. He was trained as an engraver during the Art Nouveau period and was so influenced by the organic movement that a watchcase that he created won a prize at the Turin Exhibition in 1902. After that it was his art teacher that encouraged young Le Corbusier to “look beyond appearances to the underlying structures of plants and fossils, and stressing the beauty of simple geometric forms” (Curtis, 1996). This was most likely what set him on his path to a universal expression.

It is not to say that Le Corbusier had locked the door to his Art Nouveau past indefinitely. Perhaps the organic forms were only in a dormant stage and it was certainly revived when the art world reintroduced it to him in the form of the art movement, Surrealism. Instead of still lifes and machines dominating his sketches and paintings, there appeared human figures, “it is not that Le Corbusier was totally abandoning ‘the machine’, but the mechanical now entered a more clearly defined polarity with the ‘natural’ & the ‘organic’ “ (Curtis, 1996: 320).

One of the first few more humanistic work of Le Corbusier has to be the Petite Maison de Weekend, this dwelling includes regionalistic ideas as it was during the time where “the pressure was nonetheless felt to blend the universality of modernism with rural values” (Curtis, 1996: 321). It showcases a real depiction of a variety of materials- exposed masonry, concrete, glass blocks, vaulted timber paneling and a turf roof. The notable Modernist



Fig 1.12 Petite Maison de Weekend

now created “an earth-hugging shelter- half cave, half machine-age primitive hut” (Curtis, 1996: 321), this clearly was not an architectural piece that was dominated by the eye as careful thought and planning have been placed into the sensory experience. The vaulted timber ceiling contributes to a certain auditory experience. The glass blocks and exposed masonry contribute to the visuals as well as the tactility within the space. Over time, the old timber paneling could easily add to the interior scented encounters.

Alvar Aalto’s Tuberculosis Sanatorium is perhaps a type of mass housing which is solely dedicated to the well-being of the occupants. At that time, the best cure for tuberculosis was the natural elements- sun, fresh air and greenery. “Aalto was particularly careful to ensure that everything was as quiet, pleasant and rehabilitative as possible” (Lahti, 2013: 25) and this is clearly demonstrated in the patients’ rooms where the viewing angles to the landscape have been optimized, the winter and summer sunlight have been controlled, certain colours were selected for the wall finishes in the appropriate areas, and even the artificial lighting is placed carefully out of sight when the patient is lying down.



Fig 1.13 Tuberculosis Sanatorium

All the elements mentioned above are indeed visually orientated however, the care taken into designing it correctly and successfully for the user is astonishing. The continuous handrail that flows from one flight of stairs to the next is carefully designed as to not interrupt visual experience of the warm yellow stairwell, Aalto also specifically designed a chair which supported the patient’s back at the correct angle to ease breathing. Just these 2 design elements prove that a sense of touch on a sub-conscious level was considered.

“Modern architecture does not mean the use of immature, new materials, the main thing is to refine materials in a more human direction”

(Aalto, from Lahti, 2013)

Aalto’s view on taking advantage of modern materials in order to create a more humanistic experience is rather similar to Frank Lloyd Wright’s opinion in his own paper, *The Art and Craft of the Machine,* where Wright explains the lines of the geometric forms are easily rendered by machines but the architect must understand and manipulate that advantage into creating a “decent and uplifting environment for new patterns of life” (Curtis, 1996: 117).

The epitome of Le Corbusier’s work is most likely to be the Chapel of Notre-Dame-du-Haut in Ronchamp. It is a piece of work that is evidently hand sculpted for the intense spiritual experience that one encounters within it. It seeks “to evoke religious emotions through the play of form, space and light” (Curtis, 1996: 421) and it certainly achieved this. The irregularities in the complex curves

and undulating surfaces was perhaps an interpretation of the surrounding Vosges mountainous landscape. Much like Petite Maison de Weekend, the architect created a cave-like quality on the interior which accentuated the sacred auditory quality. In addition, deep colourful openings were carved out of this immense cave and filtered natural light into the sombre high volume space.

The entire chapel becomes an interactive sculpture where one is constantly in dialogue with the dynamic facade. The large grass platform on the one side of the chapel which is meant to represent a nave, remains ambiguous; until one notices the Madonna in a glazed box embedded in the wall. This allows one to become aware of the strengthened spiritual and natural relationship.

Neil Leach states that architectural design has become a task of organizing empty seductive forms where philosophy is added later and "appropriated as an intellectual veneer to justify these forms" (Leach, 1999). Some works in the Modernism era may have justified Leach's critique by abstracting elements beyond recognition resulting in what appears as a simple visual composition of geometric forms to the ordinary person. This is most likely the downfall of the movement and what majority of people think when the term Modernism is mentioned.

The author of *Modern Architecture Since 1900*, William J. R. Curtis, states "but history involves constant re-interpretation as well as the presentation of new facts, and even buildings, personalities and events that once seemed to have some immutable status must be re-scrutinized and reconsidered" (Curtis, 1996). Therefore the highly abstracted buildings was not only the issue with the movement, it was also simply the imitation of historical forms hoping to achieve the same excellence and virtues as the original but in a completely different context. Only one form was right for one context therefore instead of emphasizing the values of one single style, it was decided to create a language that was based on the value of many, "to fuse precedents and to create new combinations out of diverse lineages" (Curtis, 1996).

There was certainly clear evidence of the success of combining the machine age with the artistic qualities of the hand in order to create 'humanistic' architecture. We see this in works such as the Schindler / Chase House, the Tuberculosis Sanatorium, Petite Maison de Weekend, and Notre-Dame-du-Haut . All were intended to be designed for the well-being of the human whether it is to bring nature closer, provide a clean healthy environment for a clean state of mind or emphasize the spiritual relationship within a person.

"Many homes of the Modern era can be experienced as too controlling and aesthetically predetermined to permit the inhabitant's personal adaptation and lifestyle" (Pallasmaa, n.d: 14). This is most likely the case when it comes to most modern architecture where the exterior statement becomes more important than the interior qualities. Le Corbusier stated, "architecture is the masterly, correct and magnificent play of masses brought together in light" (Le Corbusier, 1970). This reinforces the objective of the eye in the Modernist era. It emphasizes artistic expression and reliance purely on a visual relationship between man and building.

The buildings previously mentioned do contain positive aspects and are undoubtedly buildings of high influence in the movement. Antonio Sant'Elia's futuristic manifesto showcased an impenetrable architecture, one that was indestructible and full of force. The infamous Schroder House introduced a dynamic spatial play within the plan, it subtly suggested the constant need for a relationship between the

human and the building. Maison de Verre was certainly revolutionary because it portrayed a lighter and more slender version of the bold machine age. We can say that all these examples evidently aim to produce a bold facade simply to make a visual statement. The architects did not consider incorporating design elements which serve the auditory, olfactory and tactility.

An artist, Jorma Hautala, depicts the gradual disappearance of symbolism in architecture by visually documenting the main entrance of residences over time. The sequence clearly indicates the loss of historical tradition and identity over a period of time. Pallasmaa's metamorphosis of the door is a prime example of a multi-dimensional experience, "opening a door creates an intimate encounter between one and the house, body touched the door handle, polished by weathering over its long use, giving a welcoming handshake" (Pallasmaa, 2012). The last few doorways that Hautala has depicted in the sequence has clearly become one dimensional and lessened the sentimental experience. It could also be said that the doorways have less visual noise, perhaps to achieve a fresh state of mind as Le Corbusier intended in his early works such as the Citrohan or perhaps the last few doorways was intended to showcase the contemporary trend that was occurring at the time in order to seem modern.



Fig 1.14 Jorma Hautala's Artwork Depicting the Disappearance of Symbolism in Doorways

"The inhumanity of contemporary architecture and cities can be understood as the consequences of the negligence of the body and senses, and an imbalance in our sensory system... The art of the eye has certainly produced imposing and thought-provoking structures, but it has not facilitated human rootedness in the world... Modernist design at large has housed the intellect and the eye, but it has left the body and the other senses, as well as our memories, imagination and dreams, homeless." (Pallasmaa, 2005)

Therefore perhaps the solution moving forward is to look towards a more advanced humane direction. Perhaps a more successful architectural solution would be a multi-sensory humane experience- one which interacts with all the senses and can be understood by all, regardless of culture and background. Perhaps the architectural solution is to recreate that intimate encounter between man and architecture without the aid of the visuals.



understanding

Architectural phenomenology came about to "restore the lost unity of experience architecturally" (Otero-Pailos, 2012). In the early 1960's, North American and European architects viewed "institutionalized aesthetics as the emblem of an oppressive and closed social order" (Otero-Pailos, 2012). This generation wanted to return to the time when people experienced architecture fully in "more wholesome ways" (Otero-Pailos, 2012) when human experience was the driving force of architecture, not technology. Phenomenology, as I understand it, is the study of being aware, being conscious of surroundings and experiences. It is also the way in which we respond to those surroundings and experiences, a truly genuine and meaningful response. A full understanding of our environment enables one to form a strong relationship and connection to the world, physically, mentally and spiritually.

One has to wonder whether architecture can facilitate this connection, whether built form can reinforce the relationship or deconstruct the connection or whether built form has anything to do with the connection at all, perhaps this connection is only facilitated through encounters with the natural world. Pallasmaa believes that

"the task of architecture is to create embodied existential metaphors that structure man's being in the world... Architecture is the art of reconciliation between ourselves and the world, this takes place through the senses" (Pallasmaa, 2005).

Note that Pallasmaa includes all the senses and not just one as it occurs today. Pallasmaa urges readers to reignite the dormant relationship between people and architecture, "when one experiences architecture- or any of the arts - this way, it becomes inseparable from one's self-identity and way of life" (Pallasmaa, 2012). People inhabit this world along with emotions and attachments. One cannot deny the significance of a certain place on our upbringing and identity. In *Body, Memory and Architecture*, it states that "every place can almost be remembered because we place our body within it. Our body remembers how the space affected

Left Fig 1.15

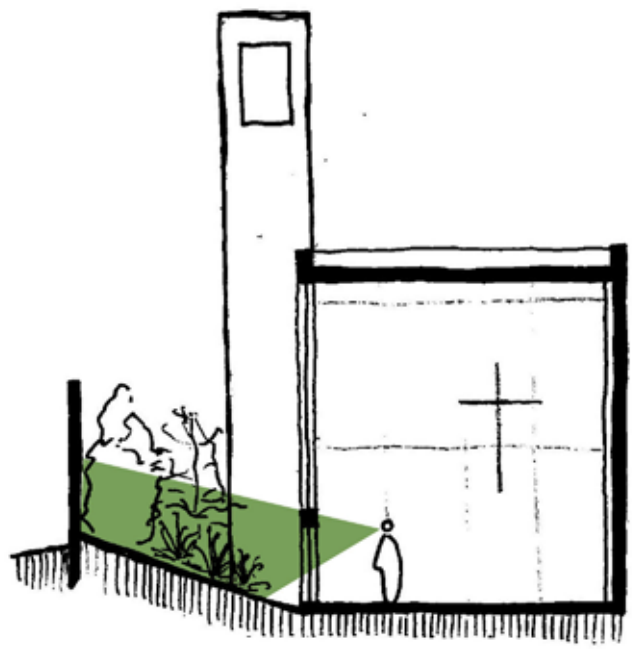


us and holds that memory in our world", (Moore & Bloomer, 1977). The real intensity with which we experience a place originates from the fact that all our senses are in use.

Pallasmaa agrees with Moore and Bloomer by stating "experiencing a space of a house is a dialogue, a kind of exchange; I place myself in the space and the space settles in me" (Pallasmaa, 2012). He strengthens his statement by extending the house as a metaphor for a family member; the windows are the eyes of the house that "inspects and views visitors" (Pallasmaa, 2012), the heavy front door resists the body weight creating anticipation and heightened curiosity, the "door handle, polished by weathering over its long use, gives a welcoming handshake" (Pallasmaa, 2012).

Dialogue between man and nature can be found in many forms of architecture by Tadao Ando. Ando's architecture is of extreme minimal design yet it communicates so intensely with a viewer within the space. His architecture guides viewers along a journey. It frames parts of a view to not allow for over indulgence but rather appreciation. It reveals its true character by making use of materials honestly. It "recasts historic architectural forms into an experiential content" (Otero-Pailos, 2012). Ando often makes use of abstraction in his designs in order to strengthen the spiritual relationship one has with the natural world- "when elements of nature are abstracted within architecture, architecture becomes a place where people and nature confront each other under sustained sense of tension. This tension feeling will awaken the spiritual sensibilities latent in contemporary humanity" (Ando 1991).

The 'tension feeling' which Ando refers to could be what Pallasmaa also mentions in his book, *The Eyes of the Skin*, where "powerful architectural experience silences all external noise and focuses attention on our own existence, making us aware of our fundamental solitude" (Pallasmaa, 2005). Pallasmaa expands



Left Fig 1.16 The Door Handle is the Handshake of the Building
Above Fig 1.17 Tadao Ando's Chapel on Mount Rokko

this further in his next book, Encounters 1, “the understanding of identity, the prerequisite for creative work, comes from a tolerance for- actually an engagement with- silence, solitude, even boredom... and uncertainty” (Pallasmaa, 2012). After reading these phrases, I wondered if my previous memories perhaps had a connection with this ‘fundamental solitude awareness’. The majority of these experiences that I have occur at random times however, there is one moment which I will never forget because of its impact:

"I wake up. My eyes struggle to open. I realize it is still in the early hours of the morning as it is still pitch dark. What woke me up? Then I hear it. Loud and clear. As if it were right outside my window - an owl hooting loudly. I feel at ease immediately as I have heard this before but then something new happens. Another owl responds further in the distance and after another few seconds... their conversation continues. As I eavesdropped on their conversation, I realized there was absolute silence in the night; no cars on the main road nearby, no music from the late night cafe up the road, no television noise from my insomniac neighbour, no snoring from my dog either. Just silence with a tranquil owl conversation. It felt surprisingly reviving and powerful. I have never experienced this before. What an incredibly rare opportunity this is. Could anyone else be hearing this? Am I the only person lucky enough to experience this?

I felt my mind begin to wander. I felt as though my mind stepped out of my body and I was consciously aware of my very existence in the world at that exact time. I thought of the millions of other people across the world waking up from their night's sleep, going to work or even at work already because of time. It all felt incredibly surreal - the very fact that I was in bed, suppose to be sleeping, while simultaneously, someone else is at work in another country in broad daylight.

The owl conversation still continued in the background of these thoughts. As my thoughts began to blur, their conversation grew louder. I felt the warmth of my bed again and I allowed the ongoing owl conversation lull me back to sleep."

“powerful architectural experience silences all external noise and focuses attention on our own existence, making us aware of our fundamental solitude”

(Pallasmaa, 2005)

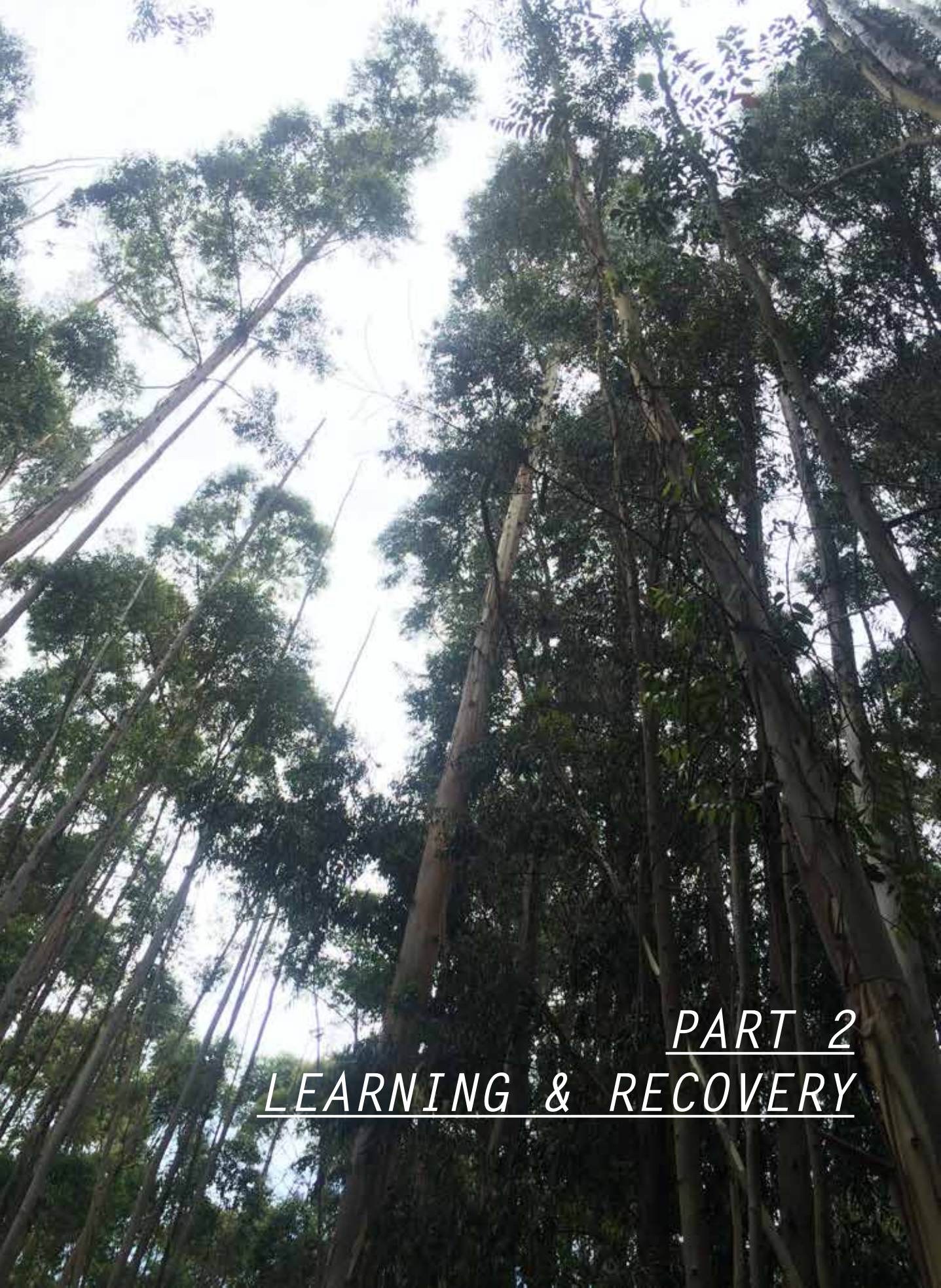


Above Fig 1.18 Tadao Ando’s Chapel on Mount Rokko

This experience was reminiscent of Pallasmaa's writing, "we need to reassure ourselves of our existence here and now and of how we fit into time's continuum. The experience of continuity is a basic psychological need of humans" (Pallasmaa, 2012). The experience with the owl somehow made me quite aware of my very own existence in the world, it made me think about my life up until that point and where it would lead to, what choices I would have to make in order to achieve my goals. Perhaps my questions added to my "experience of continuity" (Pallasmaa, 2012).

Furthermore, the *experience* of the owl conversation was the important element to understand. It was mainly sound driven with minimal, if not none, visual aid yet it felt incredibly powerful. The hooting of the owls against the silence of the night ignited my imagination to provide an unforgettable image in my mind. If I had seen the owl in the tree instead of hearing it, I feel that would have evoked the same feeling as seeing a cat. In my opinion, this proves that non-visual experiences are able to become far richer and more valuable than sighted experiences. Vision takes away the anticipation, curiosity and excitement of life's moments. It gives everything away at once instead of allowing one to seek, discover and appreciate.

There is a need, therefore, to create a new sense of phenomenology, one without the sense of sight. Tadao Ando's architecture is effective in creating "reconciliation between ourselves and the world" (Pallasmaa, 2005) however, this is achieved mainly through sight. Ando's buildings *frame* views and *direct* natural light to *cast* shadows on the raw concrete texture. It *filters* light and *restricts* colour use in order to create a solemn, spiritual atmosphere. Its appearance is kept simple and geometric in order to focus the attention on the important aspects- the visitor and the landscape. This research project is searching for a new form of sensory phenomenology, one that is able to express and aid in existential ideas to create a deeper understanding of our world but without the sense of sight.



PART 2
LEARNING & RECOVERY

people

There are people worldwide who have found their form of existential expression, without a certain sense, which places them in the continuum of the world and allows them to experience far richer lives.

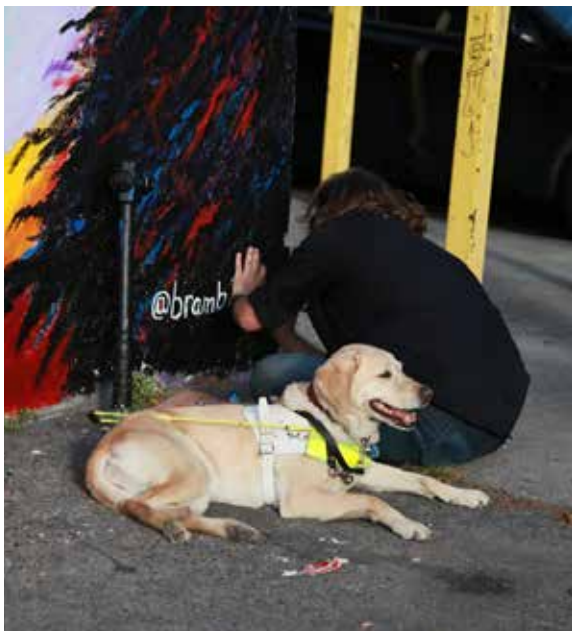
One example is Evelyn Glennie, a professional percussionist whose aim to simply teach people how to truly listen on a deeper level in terms of feeling, exploring and interpreting the vibrations caused by sounds. However, she explains that it is not only the sound that one should be focusing on- the body movement of the person creating the sound is just as important. The manner and intensity with which the person strikes the instrument and the strength of the person's grip are all part of her teachings. Glennie demonstrates that one must use his/her entire body's force in order to produce music that can be understood, explored and interpreted fully to create a multi-sensory experience of exceptional work.



Previous Page Fig 2.0
Above Fig 2.1 Evelyn Glennie

What is truly exceptional is that Glennie has been deaf for the majority of her life, she states, "losing my hearing meant learning how to listen differently, to discover features of sound I hadn't realized existed" (Glennie, undated).

Another exceptional figure is a mixed martial arts (MMA) fighter, Ronald Dlamini, who is blind. While Dlamini achieved his success before his vision impairment, he continues to inspire and succeed with blindness by continuing his training and coaching as well as providing self-defense classes to other visually impaired people. Many people think MMA is about seeing the opponent and analyzing the opponent's movements for his/her next move but, for Dlamini, he states he has an advantage - MMA has a strong emphasis on physical contact and touch therefore with every touch, Dlamini is able to visualize the opponent's location and posture. "It's very hard for you to forget something you see. Now, it's hard for me to forget something I've touched. All the other senses are amplified: I smell better, I hear better. Just by touching you, I know your body weight. When I spar, I listen to the breathing. I listen to the footsteps. I'll strike where you're most vulnerable" (Dlamini, undated). This proves to be rather extraordinary that one is able to acquire so much knowledge, perhaps more knowledge than a sighted person, just from using the other senses. It is also worthy to note that prior to Dlamini becoming blind, he would train with his coach blindfolded in order to strengthen his other senses in the case of needing to defend in the dark.



On a calmer note, a blind artist was given to the chance to collaborate on a street art project for World Sight Day. John Bramblitt states that it's his sense of touch that has helped him become a successful artist. No one taught him how to cope with blindness however, he had previous knowledge of draughting and art which enabled him to apply it his work and to navigate his surroundings, "you learn techniques on how to touch and how to understand where you are- and where other things are... The more I paint the easier it is for me to get around actually and the more I get around- the easier it's for me to paint" (Bramblitt, 2017). He makes an interesting comment where he states art needs to be interactive and engaging, "it's so restrictive" (Bramblitt, 2017) when visitors are not allowed to touch artworks in a museum or gallery. Therefore street art has the great advantage where people are allowed to be up close and interact with the art. Bramblitt's comment on 'restrictive art' coincides with Juhani Pallasmaa's where he states, "sculpture is isolated on a pedestal, paintings are imprisoned in a frame and detached. Humans enjoy the unsegregated art, we rely a lot on our subconscious and sensory level to enjoy and react" (Pallasmaa, 2012).

Marla Runyan is the first blind female Olympic athlete and Paralympic champion. A disease in her childhood left her with a sense of sight that could only see shapes and shadows. Runyan is an incredibly competitive person and she always strives to be better than before, her ambition and strength was rewarded with a prestigious globally recognized achievement in the track and field event. She "never let her vision loss stand in the way of her athletic dreams" (Michals, 2015). For Runyan, your disabilities disappear when "you make your strengths more visible than your disabilities" (unknown author, 2014).



Above Fig 2.2 John Bramblitt
Below Fig 2.3 Marla Runyan

Pico Iyer is a travel writer who was in search of a new beginning to his life. He stayed in New York City and had a successful job however, he found himself drawn towards other remote places to understand himself better.

One of his writings, *The Joy of Less*, explains more, "I have no bicycle, no car, no television I can understand, no media – and the days seem to stretch into eternities, and I can't think of a single thing I lack" (Iyer, 2009). He needed to "take a clear, hard look at what really led to peace of mind or absorption (the closest [he's] come to understanding happiness)" (Iyer, 2009) and the answer that he discovered was the simple things in life that we engage in. Simple things such as not having a motor vehicle because it means more daily adventures around the neighbourhood or even the feeling of excitement when the phone rings- a rare feeling to have nowadays. Iyer feels that we are losing contact with ourselves and it is becoming increasingly difficult to "maintain one's balance when tweets and texts and phone calls are flooding in on us every moment" (Bisley, 2014). In order to counteract this imbalance, one simply needs to engage with the natural world "even if it's only leaving the smartphone at home, taking long hikes in the wilderness or going for a run every morning" (Bisley, 2014).



Above Fig 2.4 Pico Iyer's Photography

The majority of the previously mentioned individuals lack a sense, whether it is sight or hearing- it hardly matters. What is important to take from all of them is that they are able to discover the world by deep engagement with the senses. Judging from these few inspiring role models, the most common method used to engage with the world is through the sense of touch- the vibrations caused by sound, feeling the opponent's mass, touching the textures of the world or simply feeling less stressed and cluttered in our daily lives. The sense of feeling truly does become vital in forming a strong connection with the world.

This is helpful in the way we design buildings for the visually impaired. Evelyn Glennie teaches us that sound can also be felt through the vibrations of the floor therefore a music room could have a floor that is more able to resonate than a floor that absorbs the vibrations. The acoustics of the room also become rather important so that the sounds do not travel to unwanted areas but perhaps only to the desired locations.

Ronald Dlamini certainly inspires many people- sighted or not as he is able to continue training as an MMA fighter as well as teaching other visually impaired people self-defense, increasing



Fig 2.5

their confidence in the environment. Dlamini as well as John Bramblitt are testament to the fact that varying surface treatment at hand height will be able to provide different information. This could be used to an advantage where certain textures are used in certain designated areas in order to assist with a visually impaired person's orientation in a large complex.

Pico Iyer's views on understanding happiness in life could be rather bias however, in this age where technology plays such a large controlling role in our lives, I feel that Iyer has valid points. As Juhani Pallasmaa stated, "we rely a lot on our subconscious and sensory level to enjoy and react" (Pallasmaa, 2012) therefore by simply enjoying the natural necessities in life in a sensorial manner, one might just be able to achieve what Pico Iyer has- that is, happiness.

Perhaps we are not in search of the theory of phenomenology in built works, perhaps it is about a sensorial phenomenology where it includes the tactility, the audible, and the olfactory system.





Fig 2.6

experiments

Ultimately, it results in learning a new skill set that is different to the average sighted person. This new skill set encourages one to pay attention to the finer details in life without the sense of sight. This research report aims to create a centre for visually impaired people. It will incorporate tactile, audible and scented elements to assist with those visually impaired. The centre will learn from the individuals previously mentioned as well as examples of built work to create a specialized environment to enhance the use of the other senses.

Understanding the skill set and the methods that other successful individuals use in order to connect with the world may not be the correct learning technique in relation to this topic. As a result, I was determined to perform a few small experiments to enhance and direct my attention to the other senses.



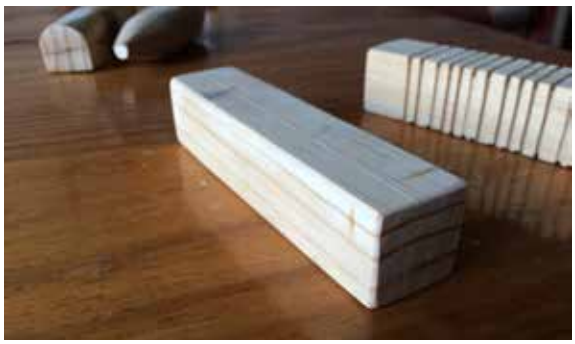
Fig 2.7


experiments | touch

I began with the sense of touch. In order to understand it, I created various shapes from the same type of material with the objective of focusing the attention on only shape and not texture.

The first shape was rectilinear with slightly rounded edges. The second shape was rectilinear with thin incisions. The third shape was rectilinear with only one rounded edge. The fourth shape was rounded but thinned out to the ends.

This ‘shape experiment’ proved that the rounded shape was most comfortable when held in the hand whereas the rectilinear shape with thin incisions provided more interest. A variety of people who tested the shapes all held onto this shape for longer, perhaps to interpret some form of meaning in the incisions.









Above Fig 2.8 Photo Documentary of Shape Experiment

Additionally, the shape of the hand was important to look at as well. Just before the hand clenches, it creates a sort of spiral-like shape. The inverse of this spiral-like shape could possibly be used to conform to any person's hand. The inverse shape was laser cut onto many layers of MDF (medium density fibreboard) which was placed together along a rod. The aim was to create a shape that could be manipulated and conform to any hand as one holds it in place.















Above Fig 2.9 Sketches of the Hand
Below Fig 2.9.1 Photo Documentary of Hand Model Prototype

Following on from the ‘shape experiment’, I began to introduce various textures, these were to be materials that were most likely to be in contact with the hand. This included materials such as weathered timber, steel, rough in-situ concrete, smooth concrete, glass and clay brick. These materials were selected as options for the most common wall materials that one is exposed to on both indoor and outdoor walls.



Weathered Timber



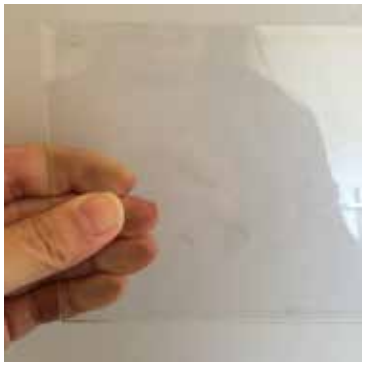
Steel



Rough In-Situ Concrete



Smooth Concrete



Glass

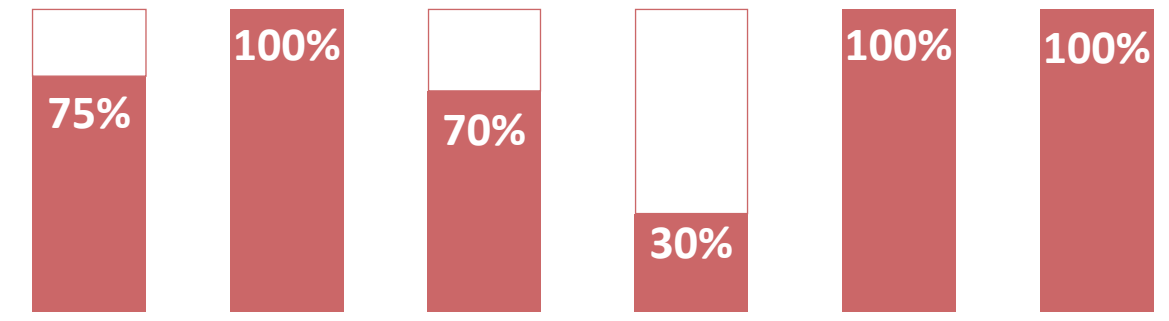


Clay brick

Fig 2.10 Photo Documentary of Textures

Results of the hand height textures:

The Most Recognizable Textures



Although many of the participants found the timber to be vastly different to the other materials, some mistook it for a roughly textured tile.

The texture of the concrete made participants believe that it was the texture of a brick.

Many had correctly answered brick however, very few could distinguish the type ie. clay brick.

The cold smoothness of the glass almost instantly gave the material away, it contrasts rather well with other rougher materials. One would think it might have been confused with steel but the different surface treatment prevented this.

Lastly, I turned to the ground for the sense of touch. When one thinks of touch or feeling, one usually thinks of our hands. However, we also feel through our feet and the soles of our shoes.

The aim of this experiment was to distinguish between different materials by walking on them. The floor textures used were suspended timber, gravel, rubber tiles, ceramic tiles, clay brick and cement brick. The participants noticed fairly quickly that it was not only the texture that assisted in the guessing game but it was also the sound of the materials that provided them with the correct answer.



Timber



Gravel



Rubber Tile



Ceramic Tile



Clay Brick

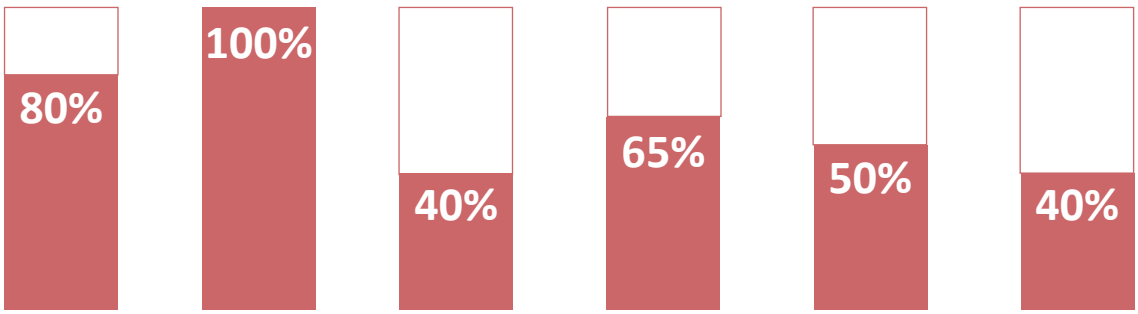


Cement Brick

Above Fig 2.11 Photo Documentary of Floor Textures

Results of the floor textures:

The Most Recognizable Textures



Timber

Gravel

Rubber Tile

Ceramic Tile

Clay Brick

Cement Brick

This type of flooring scored surprisingly low because many of the participants were not familiar with this material type. However, in a familiar environment one will be able to detect it rather quickly especially without shoes.

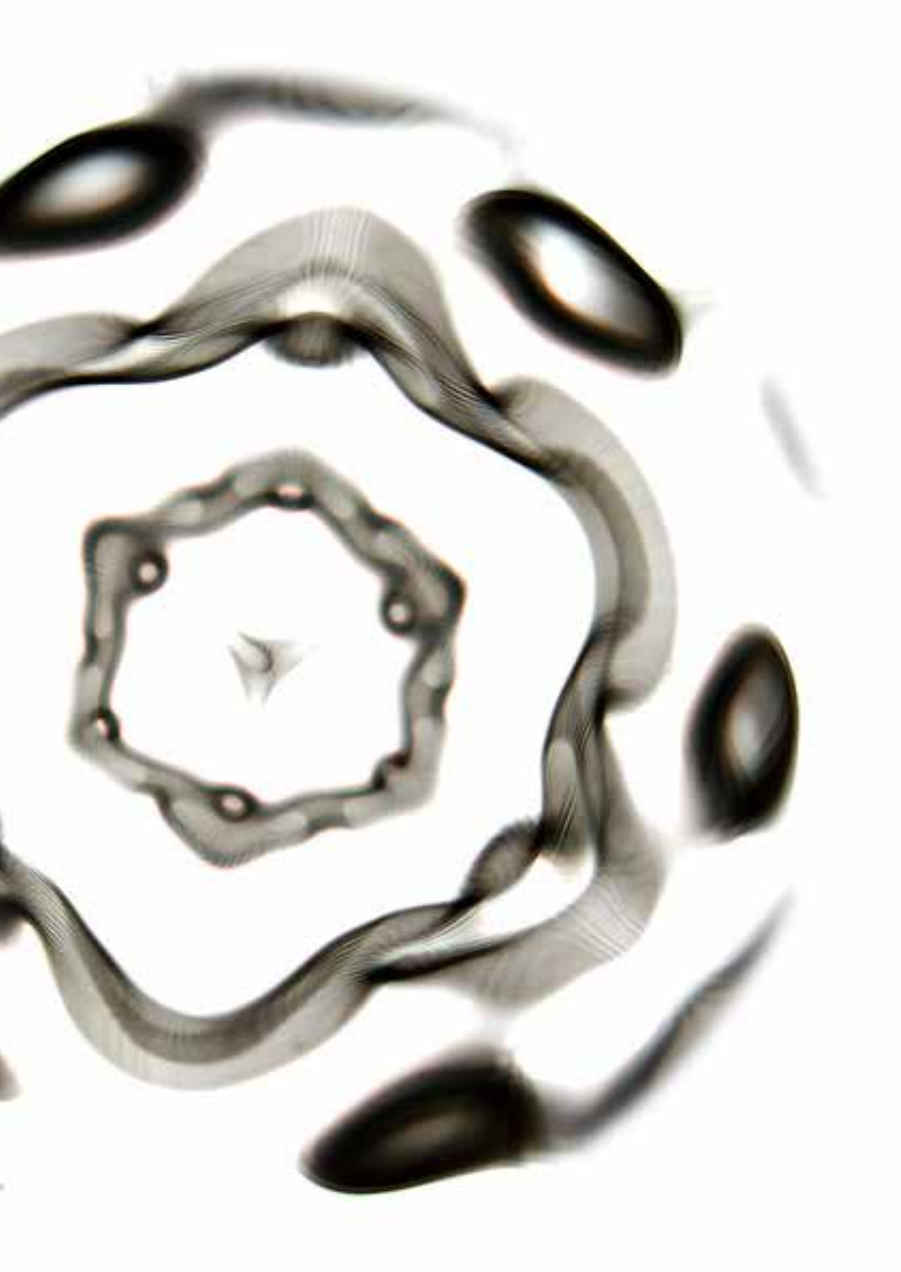
The cold smoothness of the ceramic tile ensured it to be easily recognizable.

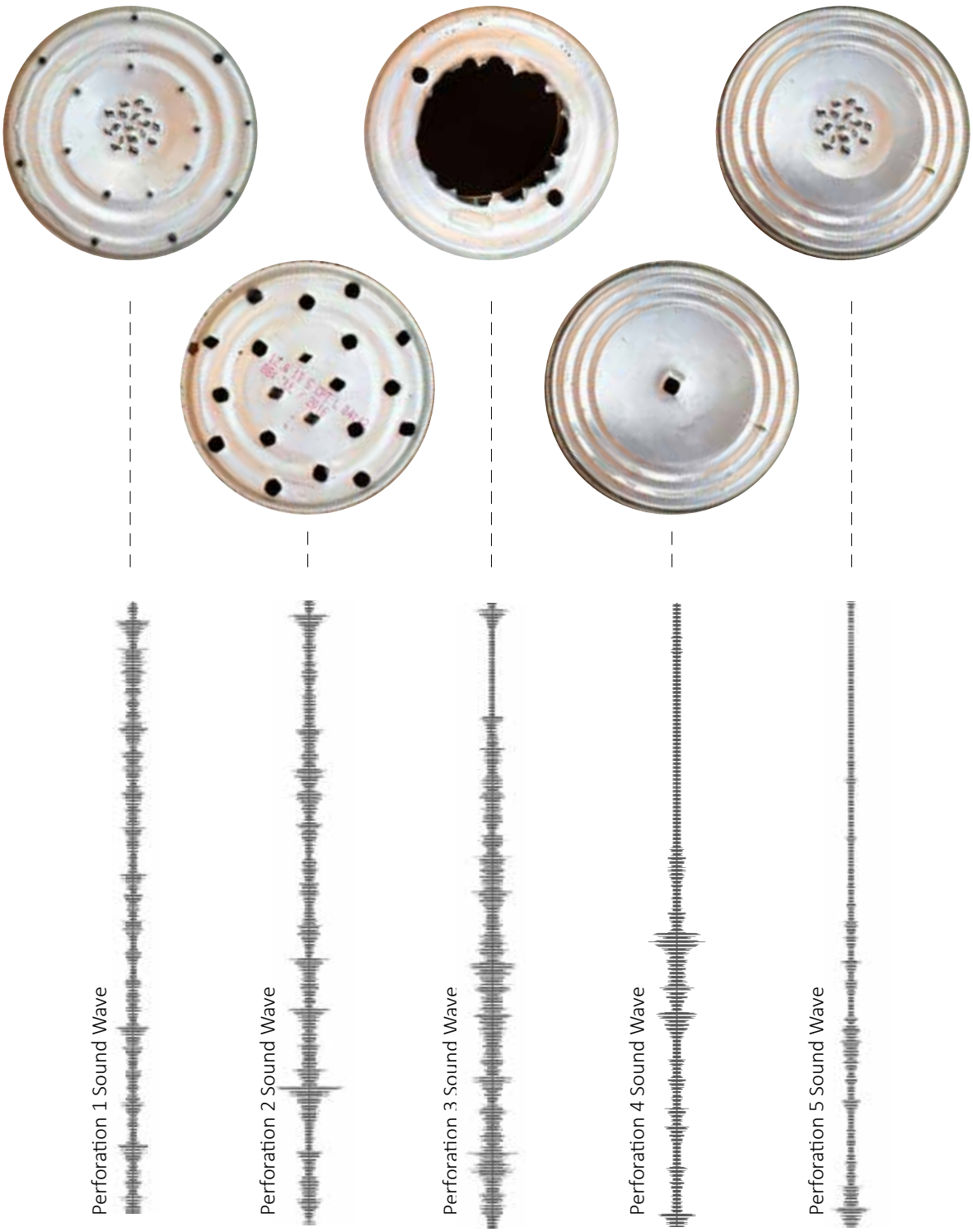
Cement brick texture was one of the most difficult to recognize as its rough surface was similar to an asphalt surface which were most of the answers from the participants.

* The thickness of the sole of the shoe does indeed affect the ability to feel the floor texture below. It was noticed that participants with thicker soles took much longer to answer whereas participants with thinner soles responded fairly quickly in comparison.



experiments | sound





Previous page Fig 2.12 Sound Vibration in Water
Above Fig 2.13 Tin Perforations



Fig 2.14a The Experiment Set Up

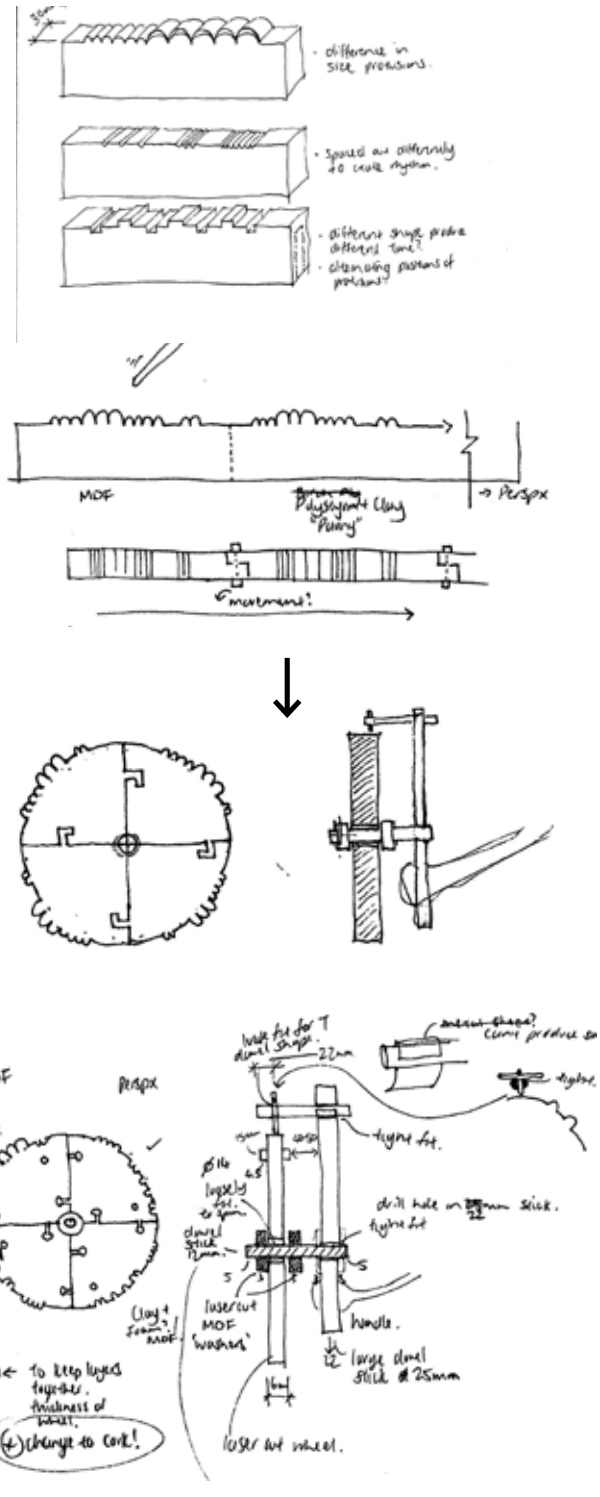


Fig 2.14b Interruption in the Experiment

The sound of water is thought to be soothing and almost spiritual-like therefore, a water experiment was conducted in order to distinguish the behaviour of sound when water flows through different conditions.

The conditions were various perforations made at the base of tin cans. There were five types of perforations created and these ranged from large and sparsely spread out to small and densely spread- see figure on adjacent page.

Some perforations created strikingly loud sounds such as perforation 2 where the holes were large yet densely located. The loudness of the sound can be seen in the sound wave illustrated below. The small and sparsely spread out pattern in perforation 1 produced a much more delicate sound.



Planning Sketches

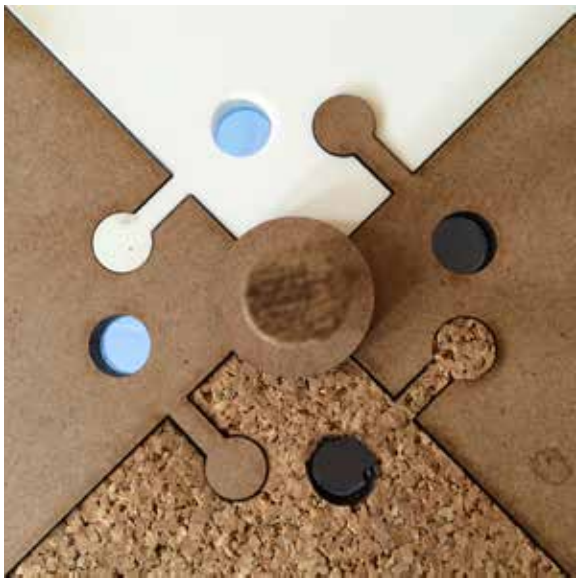


Fig 2.15 Joinery Detail

In addition to the water sound experiment, the sound of various materials were investigated. The materials used in this experiment were:

Medium Density Fibre (MDF- a hard dense material)
Cork Sheets (a soft absorbing material)
Perspex (a hard but light material)
Clay, which was selected for its soft stone quality.

All these materials were designed to be part of a spinning wheel where a short timber rod would tap each material edge one after the other. From this experiment, it was very clear that the cork absorbed the impact of the rod thus producing a soft sound. In contrast, the MDF and the perspex were much harder materials therefore creating a sharp, hard sound.

Unfortunately, the type of clay that was used in the experiment did not harden as anticipated and remained a soft and light material therefore creating a similar sound to the cork, only much softer.



Fig 2.16 The Sound Wheel





experiments | scent

Lastly, a scented investigation was to be conducted. Online research into various fragrant plants was completed however, it did not prove to be successful as the very sense of smell was non-existent. A few visits to various garden nurseries proved to be more helpful as I was able to evaluate the strength of the smell of each plant. The majority of plants that emitted a pleasant aroma were garden herbs along with only a few other non-herb plants. Unfortunately, there were many other plants that have fragrant flowers but these only bloom in spring. From this investigation, it can be said that the majority of plants with the strongest smell are herbs and even though the smell is strong, it can only be detected in very close proximity due to the open space of the existing garden nursery.



Fig 2.18 Photo Documentary of Fragrant Plants
Previous Page Fig 2.17

The visits to the garden nursery as well as my time spent in my own garden at home made me realize that there are other sounds from nature which could provide clues to understanding the surroundings. These for example are sounds of bees buzzing around flowers and plants, the sounds of birds where trees are populated and even the crunching of leaves underneath shoes as one walks near deciduous trees in Autumn. Even though these examples are not consistent and always available, they still prove to be helpful in providing an image of the surroundings whether it be a swarm of bees around flowers, a family of birds playing in a tree or the seasonal transformation of green to yellow-orange trees.

Above all the experiments and investigations that were performed, one still needs to look at ways in which the built environment can offer communication in the other senses. This includes the impact of volume within a space, while ignoring the materials of the room for the time being. A room can feel empty and cold whether it has a large or small volume with hard reflective surfaces. In contrast, a room can feel comfortable whether it has a small or large volume but with sound absorptive surfaces. Without the sense of sight, one is able to *see* and *feel* the qualities of the room simply by the vastness of it or by the treatment of the surface.

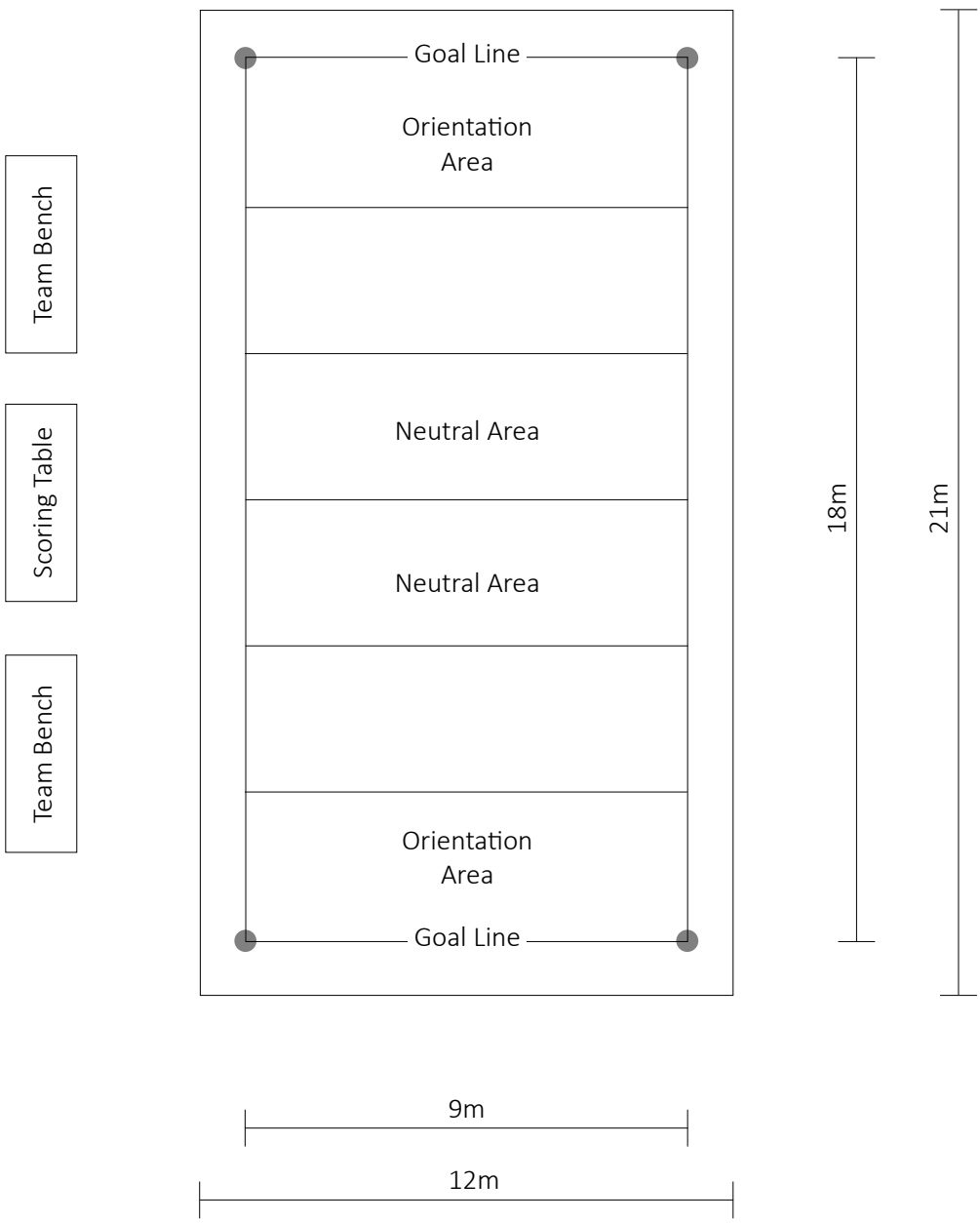
All the previously mentioned techniques and investigations could contribute to a multi-sensory experience within a built environment. This experience aims to strengthen one's relationship with the world with the senses other than the eye. Our society consists of "a culture of mindless consumption, where there is no longer any possibility of meaningful discourse" (Leach, 1999). As a result, there is an emotional need and common tendency to move away from the world of the image towards a world of touch, sound and scent in order to enrich our lives with meaning and value. The aim of this transformation is not only to *see* the world in a different light but also to create a stronger and more meaningful union between man and the world.



design brief



Goalball Court



Previous Page Fig 2.19

activities



"Goalball was invented in 1946 by Austrian, Hanz Lorenzen, and German Sepp Reindle, in an effort to help in the rehabilitation of blinded war veterans" (unknown author, n.d). It is recognized as an official sport for the blind and was introduced to the Paralympic Games in 1976. Seperate World Competitions are also held every 4 years.

• Teams: Each team consists of 3 players and 3 substitutes.
• Objective of the game: Each team must throw the ball across the court to reach the goal line, while the opposing team must block the ball and prevent it from reaching the goals.
• Time Duration: 2 halves of 12 minutes each. Halftime Duration: 3 minutes.
• Equipment: The ball must have a dimension of Ø24- Ø25cm and be a rubber perforated surface which allows for the ringing of the bells inside to be audible. Eyeshades must be worn by all players to ensure all visibility is restricted.
• All lines of the court are to be taped down with string to allow the players to feel the boundaries.



Above Fig 2.20 Goalball official icon
Below Fig 2.21 Goalball game at play

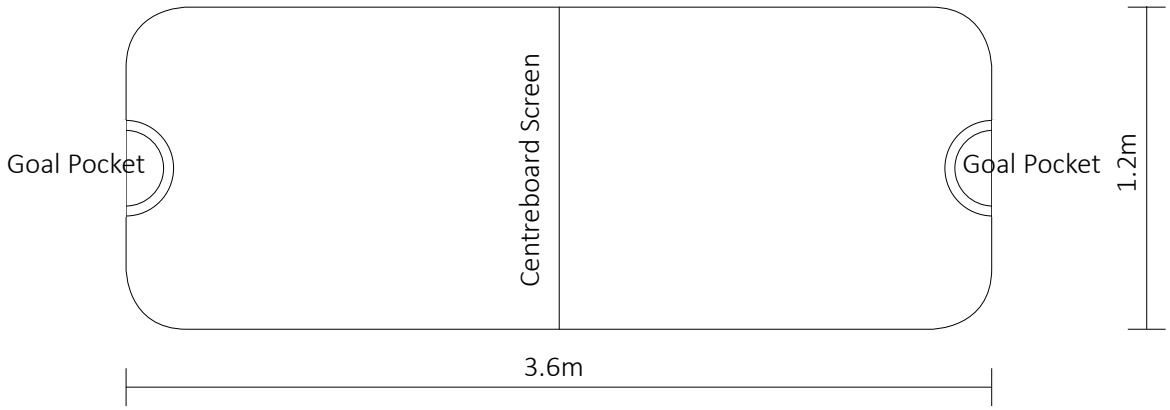
Showdown

Joe Lewis and Patrick York created a game or sport which could be played recreationally and/or competitively without sighted assistance. The game of Showdown was first played in 1980. The game is rather similar to what most people know as air hockey with a few adaptations.

- Teams: 2 players.
- Objective of the game: Each player must attempt to get the ball into the opponent's goal by batting it off the side of the wall under the screen.
- Equipment: a specially designed table with 140mm high walls, 2 bats, a special audible ball, a special glove for the batting hand and opaque eyeshades need to be worn.
- Goal pocket boundary line must have a tactile texture







Above Fig 2.22 Showdown official icon
Below Left Fig 2.23 Showdown equipment
Below Right Fig 2.24 Showdown game

Chess



Visually impaired people are able to enjoy a game of chess only with just a few modifications. The original chess board becomes more tactile by raising all the black squares 3mm higher than the white squares. Each square has a hole which allows for the pin of the customized chess piece to fit into. All the black chess pieces consist of a small pin on the top to allow the visually impaired to distinguish between the different pieces.

- Teams: 2 players.
- Equipment: special modified chess board of a minimum dimension of 20cm x 20cm, audible clock timer (optional)
- Each player must announce the move they make, the opponent is allowed to record the moves on a tape recorder or in Braille.
- In some competitive cases, an assistant is available to help inform the visually impaired person of the game's information.



Above Fig 2.25 Customized chess board for visually impaired people
Below Fig 2.26 Chess piece with pin

interviews

From the numerous interviews that were conducted at Johannesburg Society for the Blind, BlindSA, College of Orientation and Mobility and the Disability Rights Unit from University of the Witwatersrand, it is evident that visually impaired people experience a common feeling of trauma and loss. This unfortunate experience is so great that some even struggle to accept the vision impairment as a reality. This results in a need for therapeutic spaces- both formal and informal, due to the sensitive nature of the topic. A formal therapy session with a professional may prove to be difficult and uncomfortable, whereas an informal yet private conversation with a neighbour might prove to be more beneficial.

A few visually impaired professionals stated that small spaces were preferred to large open plan spaces. Large areas proved to be confusing and disorientating due to poor acoustics and lack of clues for orientation; therefore smaller spaces are easier to understand and navigate through.

"Inside the premises, most of us do not use the cane or a dog. We are familiar with surroundings and there are ramps by the entrances for easy access... Some don't even want to use the cane because then other people will know they are blind"
- Anonymous

"One big difficulty is acceptance. A blind person often struggles to accept being blind"
- S. Van Wyk, BlindSA

"The one thing people really struggle is experiencing a loss and not knowing how to deal with it, losing their independence is extremely challenging"
- M. Ntlakana, JSB

"When you are on your own, it becomes very challenging with mobility"
- Anonymous

"Smaller spaces are preferred as it is easier to navigate through, also has less sound echo. A large space is almost wasted space and is inefficient for visually impaired people"
*- S. Van Wyk, **BlindSA***

"Braille is still very important. It provides an important platform for learning punctuation, spelling and writing. Technology that converts writing to audio cannot teach that therefore there are still many advantages for braille."
*- P. Ramluckan, **BlindSA***

case study: Johannesburg Society for the Blind

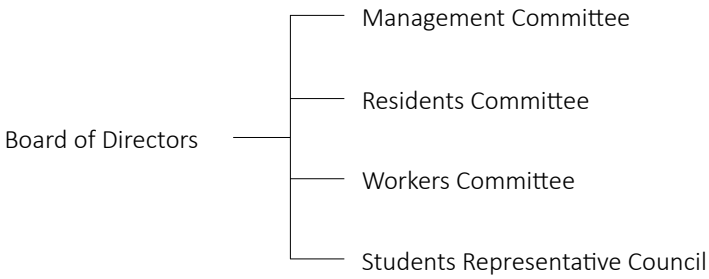
JOHANNESBURG SOCIETY FOR THE BLIND

The Johannesburg Society for the Blind (JSB) is an organization that is dedicated to catering to 'the needs of visually impaired people regardless of gender, race, ethnicity or religious affiliation'. They are committed to blind and partially sighted persons "by providing accommodation, employment, rehabilitation, skills of daily living, orientation and mobility". The JSB has "strengthened its mandate by focusing more on building capacity among the visually impaired so that they may also play a role in the development of South Africa".

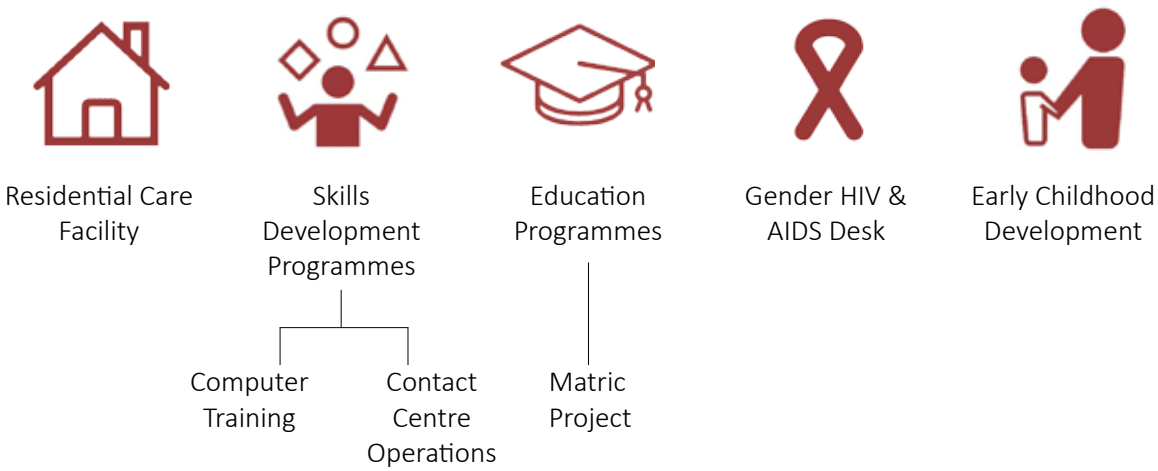
With this in mind, the organization struggles to provide for the large number of residents in their care. This results in an opportunity for an additional development branch of the JSB that includes the existing facilities and services as well as new and improved ones.

Above Fig 2.27

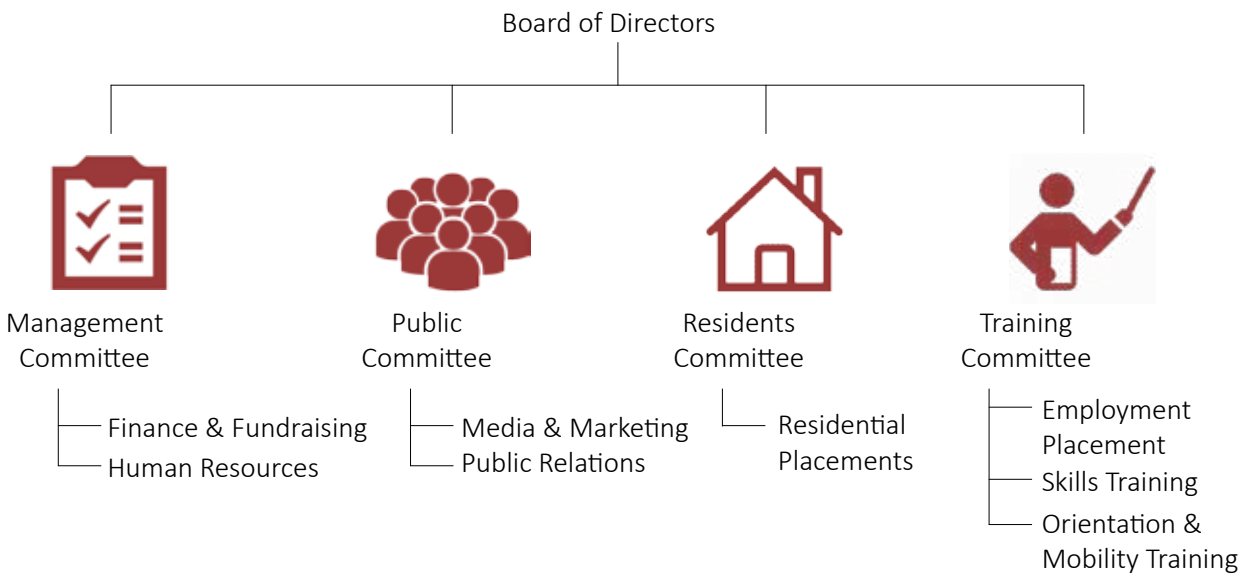
Current Organizational Structure of JSB



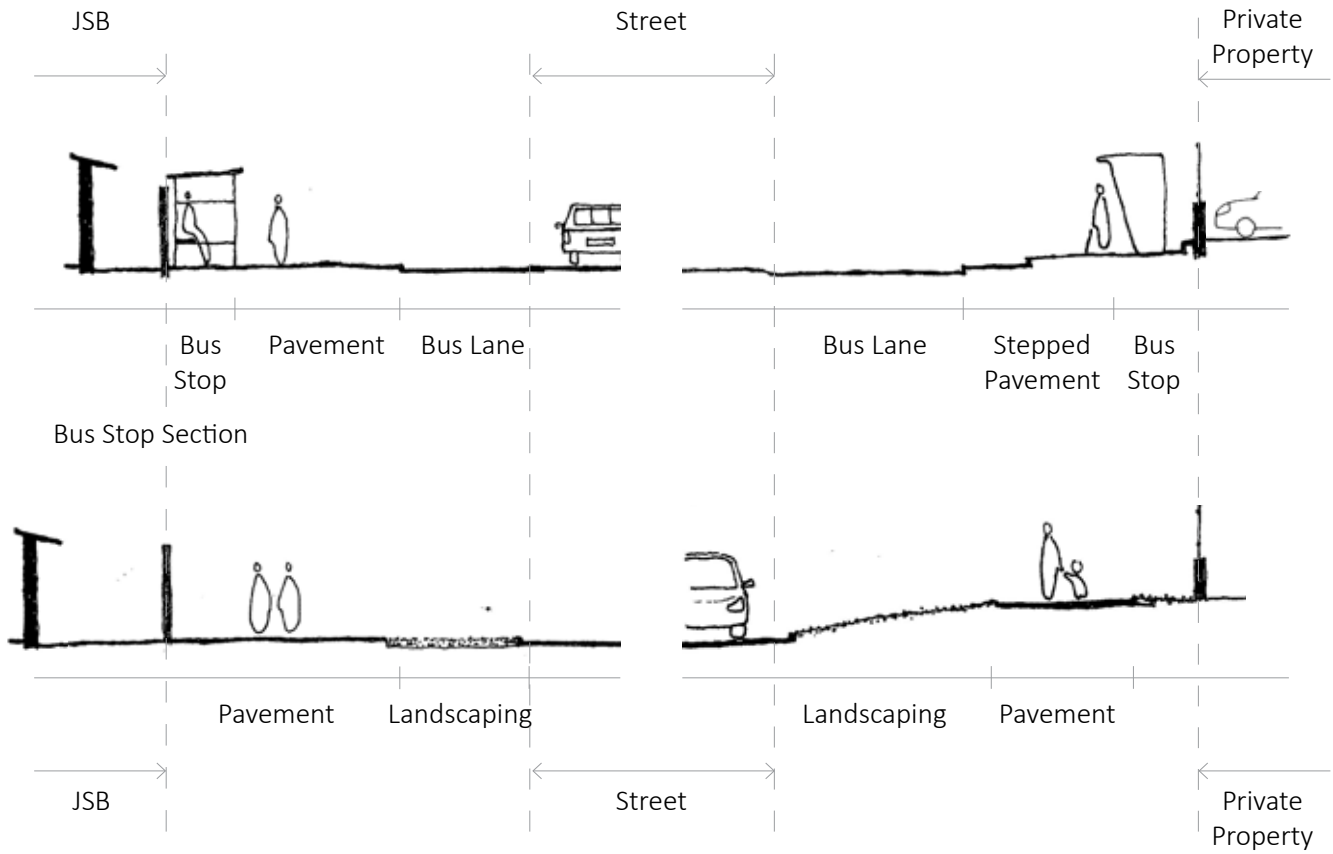
Current Facilities of JSB



Organizational Structure to be proposed at new development



Current Urban Analysis of JSB



Typical Boundary Section

JSB is situated in Roseacre which is a residential area. The analysis above shows that the urban environment is adequate for visually impaired people with a few minor issues. In the bus stop section above, it depicts a bus stop shelter located on a wide pedestrian pavement. The wide pavement ensures a safe distance from the possibility of fast moving vehicles. However, the lack of a level difference to serve as a warning from the wide pavement to the bus lane may be a safety risk to a visually impaired person. Opposite to this is a sequence of stepped narrow pavements which might prove to be more useful as the curbs can act as a guide.

In the typical boundary section, the pavement widens as the bus stop shelter is no longer there. Evidently, there is no guiding element for a visually impaired person along this wide pavement. The only possible guide is the plastered boundary wall on the left and the landscaping to the right. On the opposite side, the pavement is narrower yet still sufficient. The slope of the landscaping towards the street poses a safety risk to the visually impaired.

Above Fig 2.28 Sketches of Street Sections

Private Public

Proposed Informal Programme

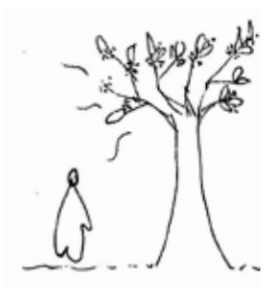
Hide away spaces

Vegetable Garden

Sensory Landmarks Park & Parking

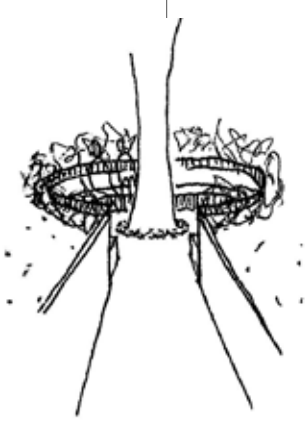
Chess boards Goalball Field Showdown Table

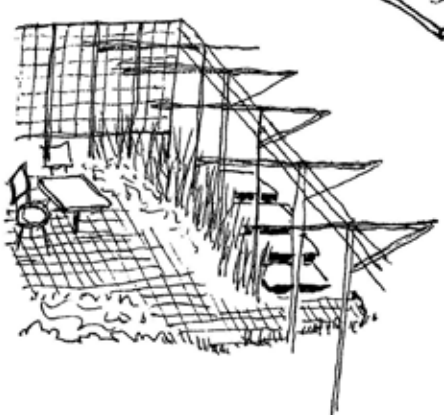
As a result of the interviews, there is a need to create informal therapeutic spaces in addition to the formal spaces. These informal therapeutic spaces are labelled as 'hide aways' and should be situated throughout the centre and have a certain degree of privacy.

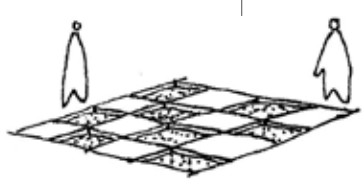




These sports activities are to be placed in the most public areas in order to be accessible for all users in the centre. This aims to encourage participation from everyone within the centre therefore not excluding those who might be in need of support.







programme

Private Public

Proposed Formal Programme

Residential	Admin	Clinic	Library	Classrooms	Cafeteria

Permanent Res:
1 bed lounge
1 bath kitchenette

Temporary Res:
2 bed lounge
1 bath dining
kitchen

Management- 3 seats
Public Relations- 3 seats
Residents Committee- 2 seats
Training Committee - 2 seats
(orientation & mobility)
Conference Room- 15 seats
Meeting Rooms (x2)- 4 seats
Kitchenette

Reception
Technical Aid Shop
Consultation Rooms x4
(max 4 seats)
Guide Dog Introduction Area

Reading Areas
Art History
Fiction Non-Fiction
Science Music
Food
Computer Centre- 10 seats
Audio-book Room- 10 seats

Art: Pottery & Sculpting- 8 seats
Crafts: Weaving & Beadwork- 8 seats
Kitchen: Baking & Cooking- 6 worktops
Studio: Exercise & Music- 15 people

Delivery Yard
Kitchen
Seating- 40 seats
Games Room



Fig 2.28.1 A Braille Music Book for a Visually Impaired Pianist

viability study

Sources of funding for the new development branch of JSB could possibly be obtained through:

1. **Johannesburg Society for the Blind**
Although JSB is a Non-Profit Company, there are a few new fundraising techniques to be implemented for this new development. This includes:

• Training in new additional skills such as the making of clay pots, art and music. The group classes for making clay pots, art and music could be negotiated at a lower price from private companies. Liebermann Pottery is located in close proximity to the selected site therefore transport for the group could be organized for the pottery class to be held at their premises. The art classes could also be arranged by Ajay's art classes. The instructor would have to conduct the class at the JSB premises.

• An emphasis on marketing is to be placed on the goods that the visually impaired people produce in the existing and new training programmes held at JSB. The existing programme includes skills in cane weaving, basketry and furniture-making. Some extra support in this department could lead to more goods available for the public to purchase. Currently, there is a shop on the JSB premises that sells the goods however, the marketing of the business proves to be inadequate.

• A new market day is to be introduced quarterly throughout the year where the visually impaired are celebrated. Goods made by the visually impaired will be sold. Live music will be on performance by the visually impaired and fresh food can be sold to the public. Activities such as goalball can be included in the programme as well. This method is also to be implemented after completion of the proposed development in order to continue generating its own income.

Above Fig 2.27

2. FPM SETA (Fibre Processing & Manufacturing Sector Education and Training Authority)
This company was established by the government in order to combine sectors and strengthen links between related industries. FPM SETA has a sector of Education, Training & Development Practices (ETDP SETA) that is currently in partnership with JSB to provide adequate training and resources for visually impaired individuals. JSB is also reliant on another sector of FPM SETA to provide workshops in basketry, weaving and furniture-making (please see Appendix 2).

3. **Foundation For Human Rights**
This organization has previously funded JSB in a Human Rights Awareness campaign in Mpumalanga. It is in partnership with various departments in government to implement a programme that aims to 'improve access to justice', 'raise awareness of constitutional rights' and 'strengthen democracy through partnerships with civil society'. The programme includes a variety of vulnerable groups that are targeted by the programme, one of these groups include persons with disabilities such as vision impairment (please see Appendix 3). The proposed development will act as a civil society organization (CSO) that provides visually impaired people with access to their constitutional right to equality.

4. Corporate Funding - Momentum
Momentum is a financial services and credit provider which has a corporate social investment programme called the Momentum Fund Disability Programme. This programme is dedicated to supporting people with disabilities in South Africa. The programme is aimed to 'support and strengthen the abilities and capabilities of people with disabilities whilst supporting and strengthening society to include people with disabilities' (please see Appendix 4).

5. Department of Social Development
The Provincial Department of Social Development provides funding for Non-Profit Organizations that aim to represent the poor and vulnerable communities. Visually impaired people form part of vulnerable communities therefore an application to receive funding will submitted by JSB for the new development (please see Appendix 5).

From top to bottom: Fig 2.29- 2.32

Development Cost

Residential Facilities	**990**	**8 876**[a]	**8 787 240**
20 x Permanent Residences:	**520**		
1 Bedroom	12		
Bathroom	3		
Kitchenette	5		
Lounge	6		
10 x Temporary Residences:	**470**		
2 Bedroom	24		
Bathroom	5		
Kitchen	9		
Lounge	9		
Cafeteria	**115**	**11 500**[b]	**1 322 500**
30 Seats	45		
Kitchen & Store	25		
Service delivery area	35		
Ablutions	10		
Library & Computer Centre	**50**	**2 944**[c]	**147 200**
10 Desktops	10		
Reading area	40		
Clinic & Technical Aids Shop	**24**	**6 224**[c]	**149 376**
1 Consultation room	9		
Waiting area	6		
Technical aids shop	9		
Classrooms x 2	**26**	**6 224**[c]	**161 824**
Multipurpose room (10 people)	10		
Wash area	3		
Administrative Offices	**11**	**6 224**[c]	**68 464**
Management Committee (2 people)	2		
Public Committee (3 people)	3		
Residents Committee (2 people)	2		
Training Committee (4 people)	4		
Ablutions	5		
Kitchenette	5		
	2216		**10 636 604**

Expenditure (development)			
	area (m^2)	R / m^2	total (R)
Subdivision of land (council fees)			529
Land Acquisition (after sub-division)	4 700		6 600 000
Development Cost	2 216		10 636 604
Earthworks	4 700	4 841[d]	22 752 700
			39 989 304

Annual Income	qty	R / qty	total (R)
Grants, subsidies & donations			3 276 540[e]
Interest received			121 300[e]
Public Workshops (bi-annually)	60 tickets	120	7 200
Social Market Day (quarterly)	800 tickets	20	16 000
Unit Rental			
Permanent Unit	20	84 000	1 680 000
Temporary Unit	10	108 000	1 080 000
			6 181 040

Annual Expenditure (operational costs)[f]	total (R)
Accounting fees	55 180
Bank charges	8 410
Cleaning	5 300
Computer expenses	56 780
Conference & meetings	6 800
Fundraising costs	10 000
General expenses	200
Insurance	55 000
Marketing & public relations	274 860
Motor vehicle expenses	184 200
Postage	12 680
Printing & stationery	25 880
Water & electricity	70 000
Salaries & contributions	1 500 000
Security	10 000
Staff development & training	16 500
Telephone & internet	40 000
Training equipment	120 450
	2 452 240

The total development cost amounts to R 50 625 908. The annual income is estimated at R 6 181 040 whereas annual expenditure is estimated at R 2 452 240.
It is likely that the new JSB branch development will have additional expenses that are not included in the above table however, with the above estimates, it indicates that the new branch development of JSB is indeed a viable business model. Not only will the organization profit from this new development but the visually impaired community of Johannesburg will gain a new sense of dignity and empowerment.

case study: BUSINESS MODEL



Dream House is a workshop located in Pretoria that provides employment to visually impaired people. Initially, it began by only targeting visually impaired people but the organization soon became available to people with various types of disabilities.

"We are in the people business. Our aim is to give people a renewed purpose in life whilst earning a living. There is a history of people who lost their way because of their disability and how this "home" gave them a reason to become worthy citizens again"

The organization prides itself in high quality products and services that are able to compete with the more popular mainstream businesses in the country. The organization clearly outlines it is a work place and not a care centre therefore, the employees are expected to provide their own means of transport to and from work. This creates a sense of responsibility towards their employment as well as a show of equal respect for the disabled people.

Dream House consists of 2 companies; the Pretoria Workshop for the Blind and the Greener Fertilizer Option (Pty) Ltd.

The Workshop for the Blind take on work such as packaging and assembly, vacuum forming, shrink wrapping, folding and sealing of flat stock and other labour intensive work. The workshop owns the property and equipment, its income consists of sales, subsidies, donations and management fees. The management fee is an administration service to the other company, the Greener Fertilizer Option. This is a company that produces fertilizer sticks for pot plants, these are packaged and exported to Europe. The profits, after tax, of this company are donated to the Workshop for the Blind.







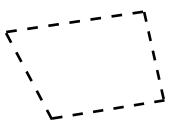
All images on this page Fig 2.33



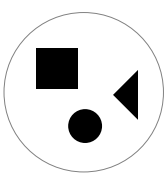
site selection

While keeping in mind that the Johannesburg Society for the Blind is currently in full operation, this new proposal seeks to expand and improve on the existing services that are available for the public.

Therefore, the criteria for selecting a site for the building proposal is as follows:



• Vacant Stand: the composition of this building proposal aims to be unique to any other building in Johannesburg therefore it is vital that the site is clear of as many constraints as possible.



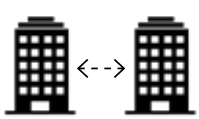
• Mixed Use Area: the site cannot be secluded from the norms of everyday life, the users of the centre still need to continue with their daily tasks within the environment.



• Coverage: the site needs to cover new areas other than the existing ones which are in South-East JHB. This is intended to reach more people in need of the centre's services.



• Accessibility: it needs to be easily accessible for people from all backgrounds such as travelling by public transport or private vehicle.



• 'Supporting Facilities': these are existing facilities in the area that are able to divert attention and/or targeted users to the proposed centre, eg. medical centres

Previous Page Fig 2.34

SITE 1: M2- Wemmer Pan



Vacant stand: existing small structures and silos which could add value to the design

Accessibility: close proximity to M2 Mooi Street offramp and taxi rank

Mixed Used Area: mainly industrial and commercial

'Supporting Facilities': only possible facility is a school for blind children located across the highway

Coverage: close proximity to the existing organization



Vacant stand: existing small structure

Mixed Used Area: mainly residential, industrial areas begin further away

Coverage: close proximity to existing organization

Accessibility: fairly close to the M2 Mooi Street offramp however, far from the closest main road for taxi drop-offs

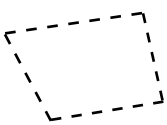
'Supporting Facilities': non-existent



Site 1 and 2 were both located in the South-East region of Johannesburg which does not fulfill the coverage site criteria. The existing organization is located further East as depicted in the image below.

Due to the unfulfillment of the coverage criteria, a third site was chosen in the complete opposite direction to the existing facility. This third site was chosen in the North-Western region of Johannesburg.





Vacant Stand

This site is vacant besides an existing short circular tower. The adjacent stands are built up with low to medium height buildings.

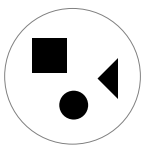
SITE 3: Barry Hertzog- Napier



<u>Coverage</u>

The site is located in the North-Western part of the city, on the corner of Barry Hertzog Road and Napier Road.

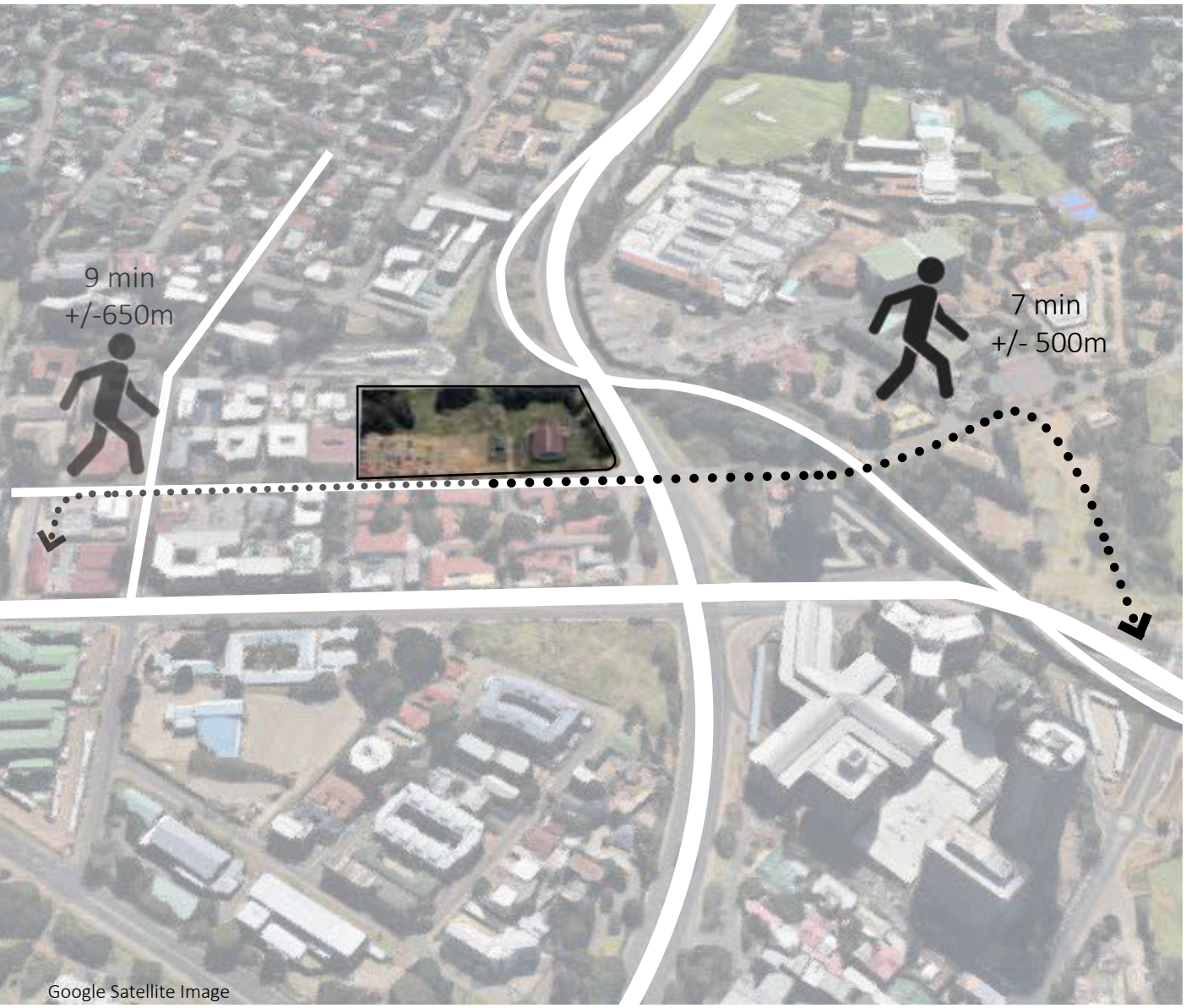




Mixed Use Area

The site is nestled in between a large variety of building uses such as suburban residential areas, commercial use, educational facilities and small retail developments.

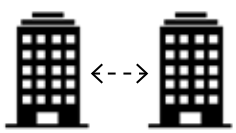
SITE 3: Barry Hertzog- Napier



Accessibility

There are 2 bus stations nearby. The SABC Media Park East Station is a 9 minute walk away from the site however, the Milpark Station East is only a 7 minute walk away. There is also a bus stop adjacent to the site. The closest highway on ramp is Jan Smuts Avenue which less than a 10 minute drive away.





Supporting Facilities

The Milpark Hospital and the German Old Age Home are in close proximity to the site and could possibly be the source of users for the proposed building.

Milpark Hospital currently does not provide services for severely visually impaired people.



site analysis

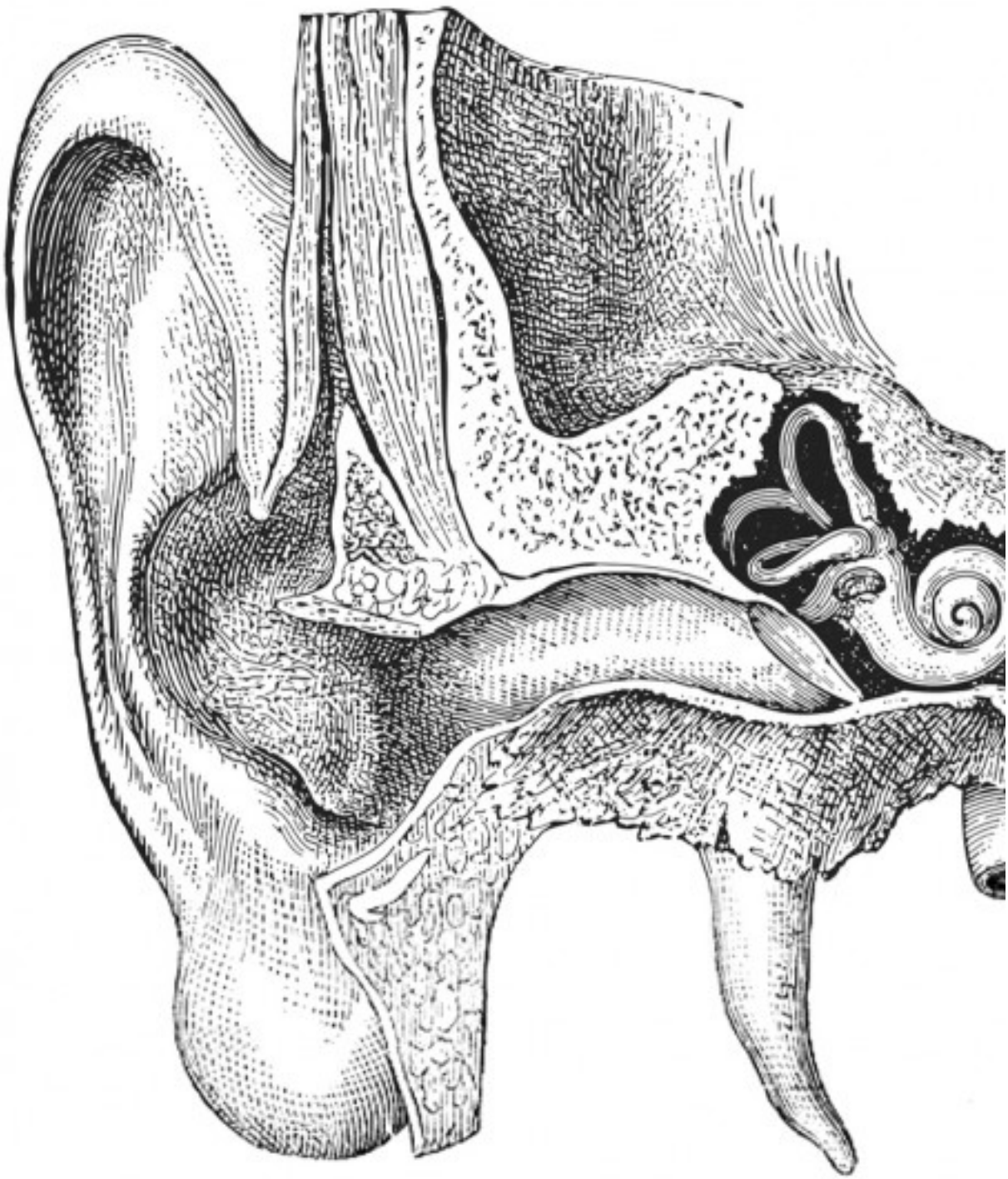


"every place can almost be remembered because we place our body within it. Our body remembers how the space affected us and holds that memory in our world"

(Moore & Bloomer, 1977)

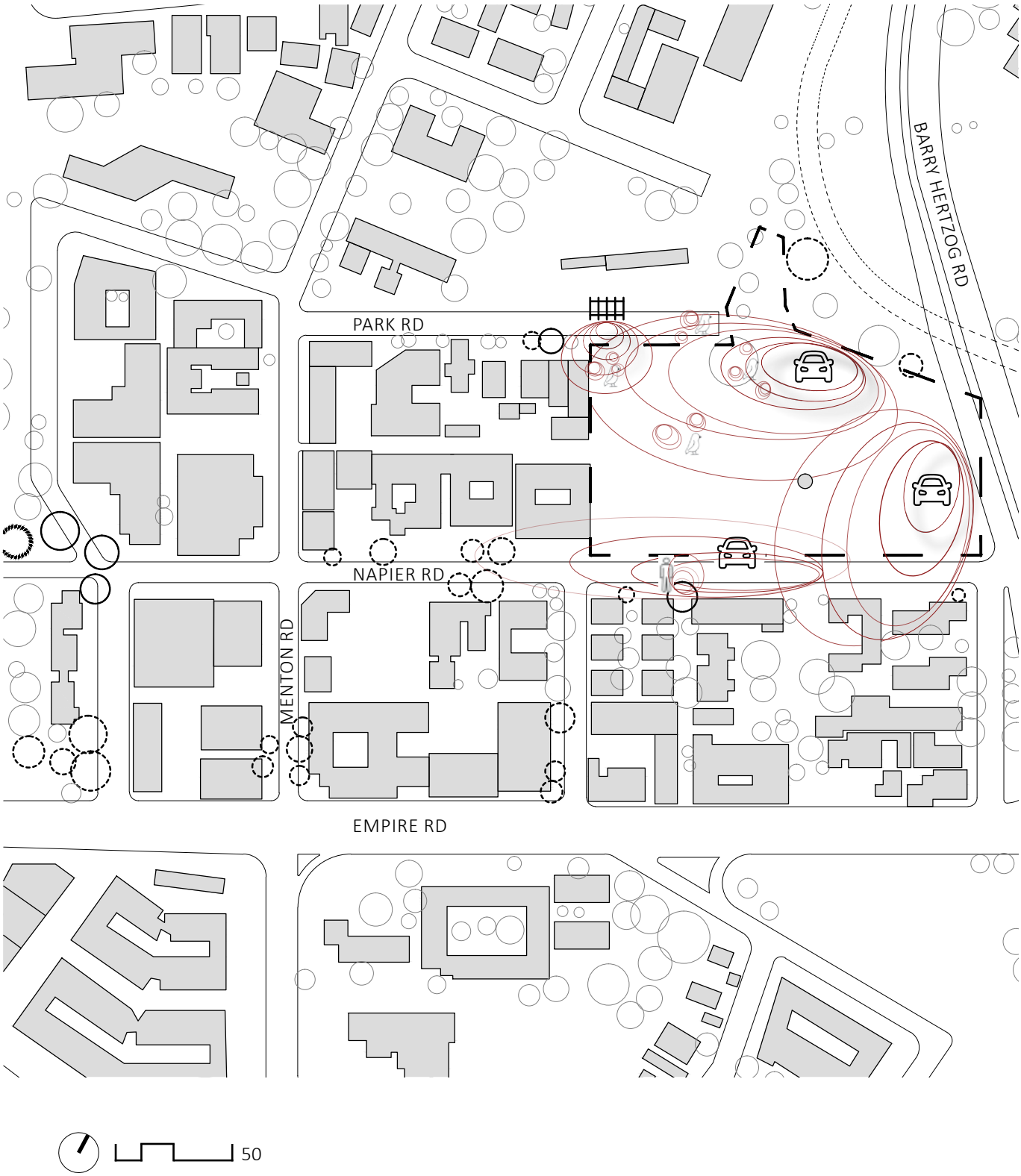
While it is important to identify the various typical aspects of any chosen site, it is also equally important to identify the various sensory aspects that the site has to offer given the nature of the building proposal. Therefore, sensory aspects such as the sounds, the smells and the textures of the site will be investigated in order to fully understand the surrounding context.

Left Fig 2.35 Eastern View of Site

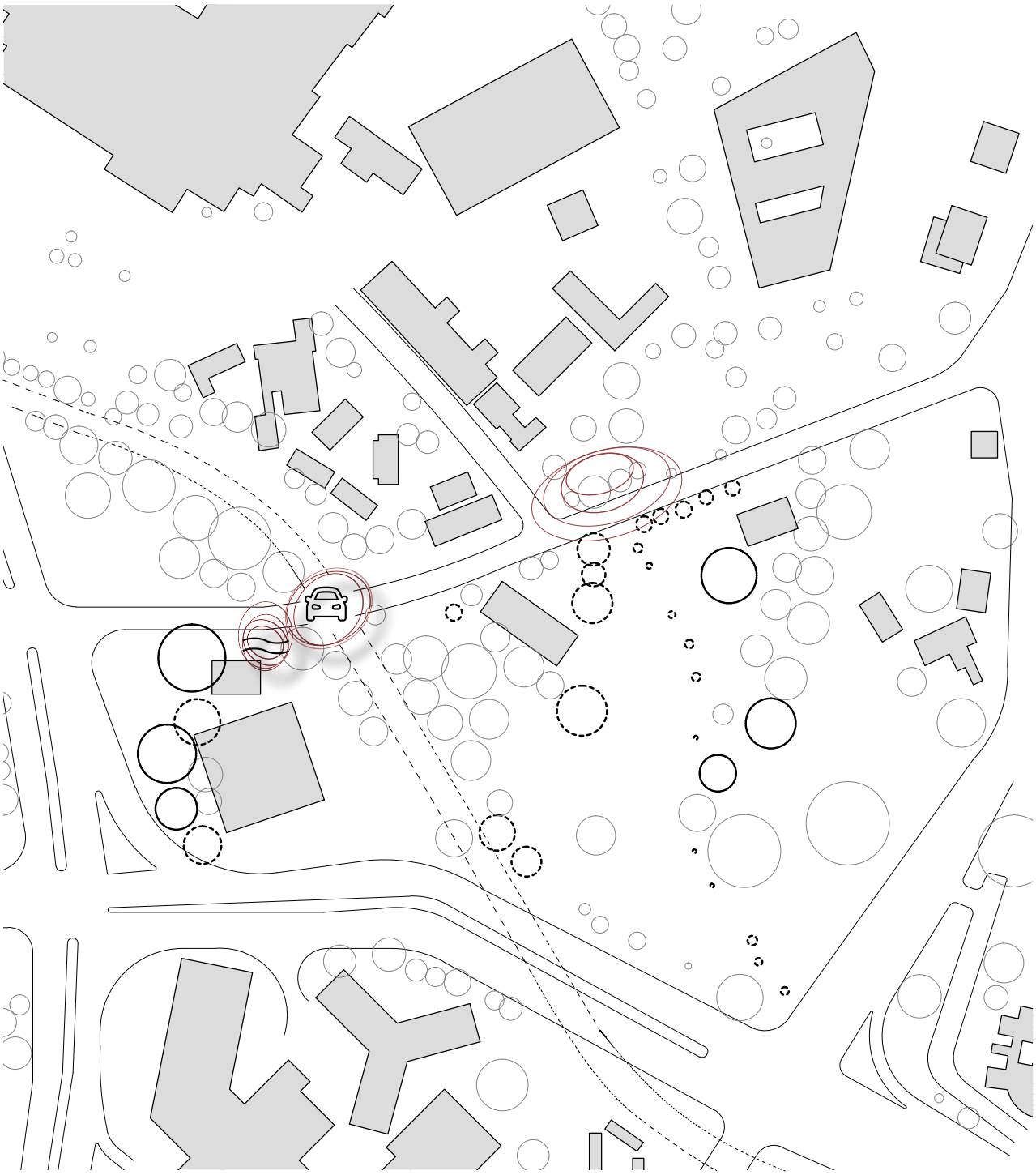


sound





Previous Page Fig 2.36



Vehicular traffic

Automatic gate

Birds

Human activity

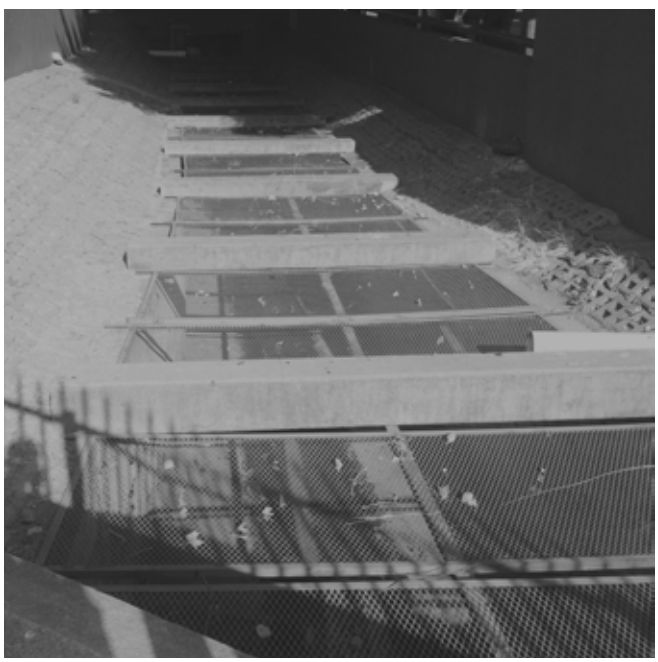
Spruit waterway

Deciduous trees

Evergreen trees









Above Fig 2.37 Photo Documentary of Site

Unexpectedly, the site did not contain many sound landmarks. The Barry Hertzog flyover did not produce as much noise as anticipated. Instead, it created a soothing sound similar to that of a water feature in the distance.

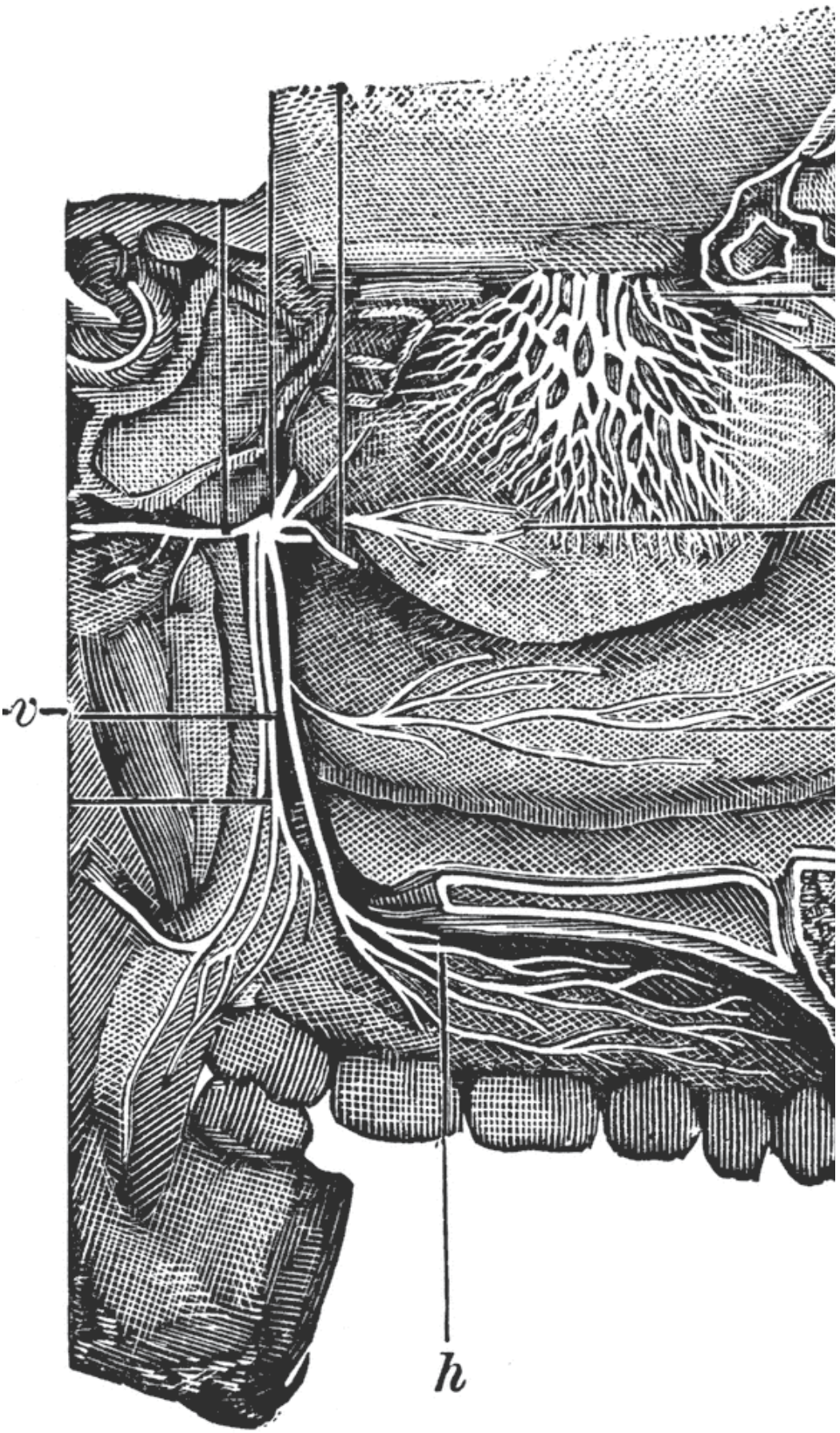
In addition, there was the chirping of birds along the Northern edge where the larger trees are located. The harshest noise originated from the rattling of an automatic gate of the offices opposite the Park Road edge.

In the case of the visually impaired, it would be useful to know the location of any deciduous trees in the area. The reason for this is so that the dry leaves that fall on the floor produce a 'crackle and crunch' sound as one walks on it. This could add to a multi-sensory experience within the surrounds of the site.

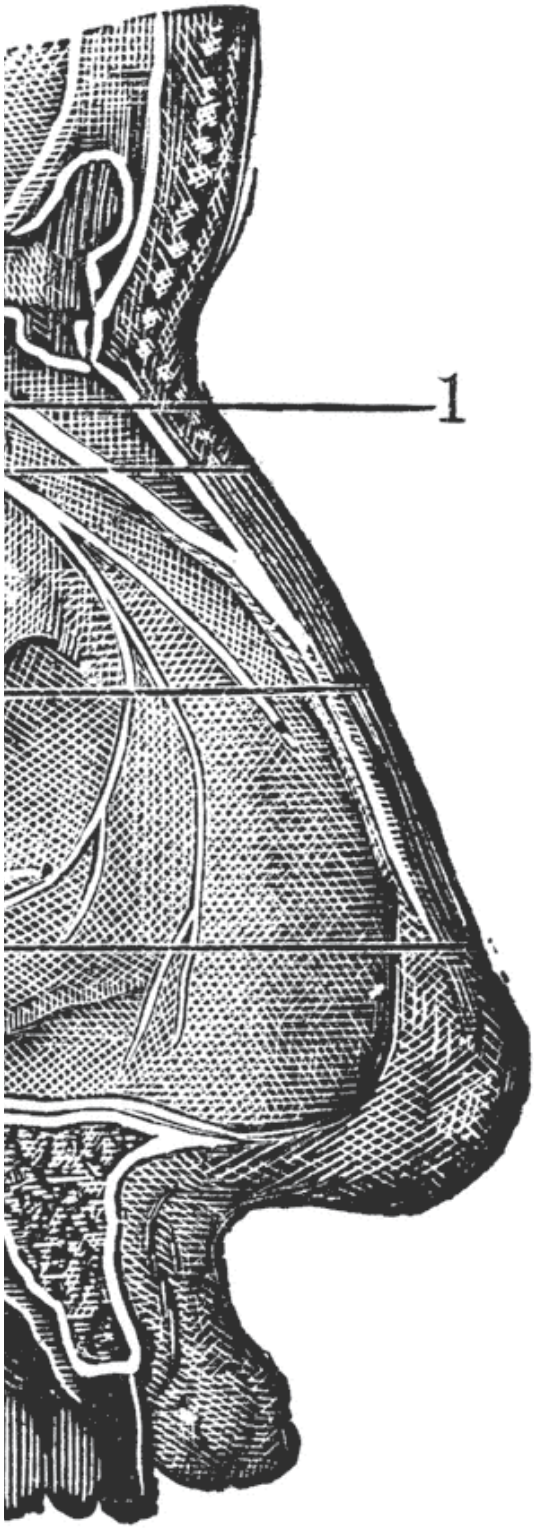
Across Barry Hertzog Road, one will hear the sound of the flowing water of the spruit. This sound occurs just before the echoes in the tunnel where the Barry Hertzog flyover bridges across. The sound echoes in this tunnel could possibly be uncomfortable as the sound reverberations do increase with noisy vehicles. In contrast to the harsh sounds in the tunnel, one is able to hear the sounds of children during lunch break or playing sports which originates from the school's Southern boundary.

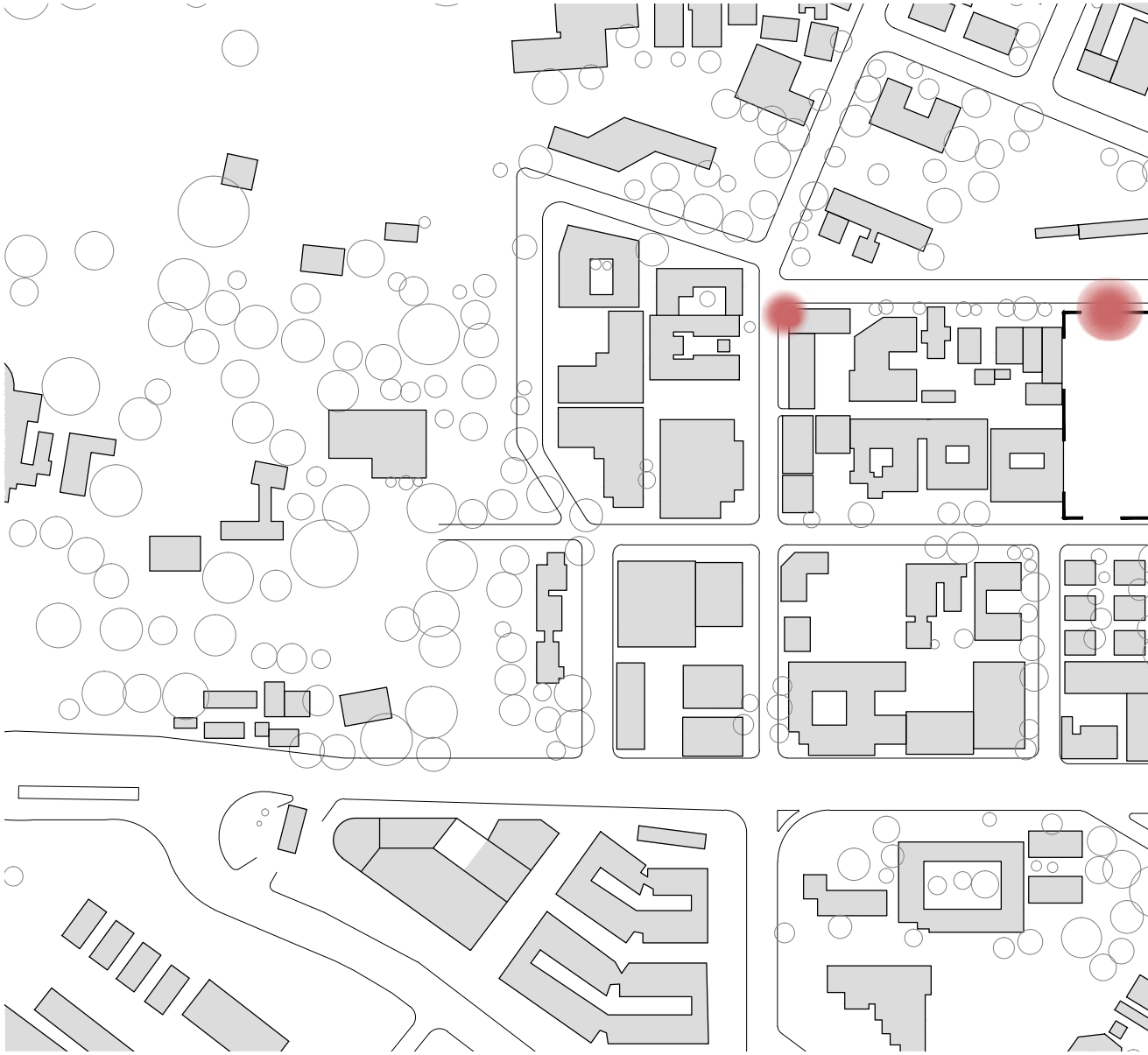
It is important to note that there are currently no audible pedestrian traffic signals by the closest bus stations.

Although it cannot be considered a constant variable, a soft sweeping sound of a broom was heard along the South-Western edge of the site where a person behind a private boundary wall was attempting to sweep up the dry Autumn leaves.

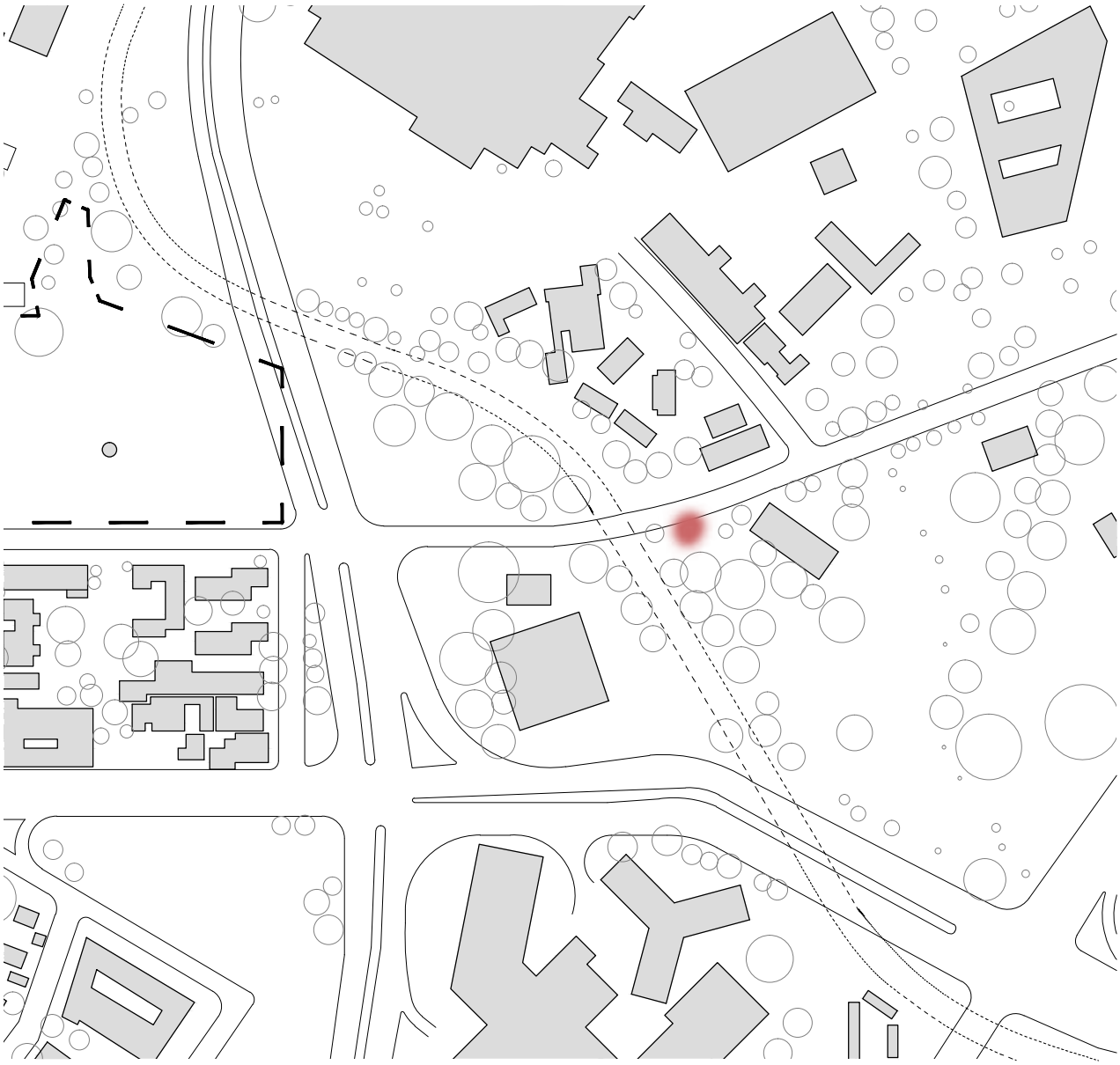

v
h

scent





Previous Page Fig 2.38



Attempting to identify the origins of smell in a large area proved to be a challenging task. However, the area did have some evidence of smell which could possibly aid in orientating oneself.

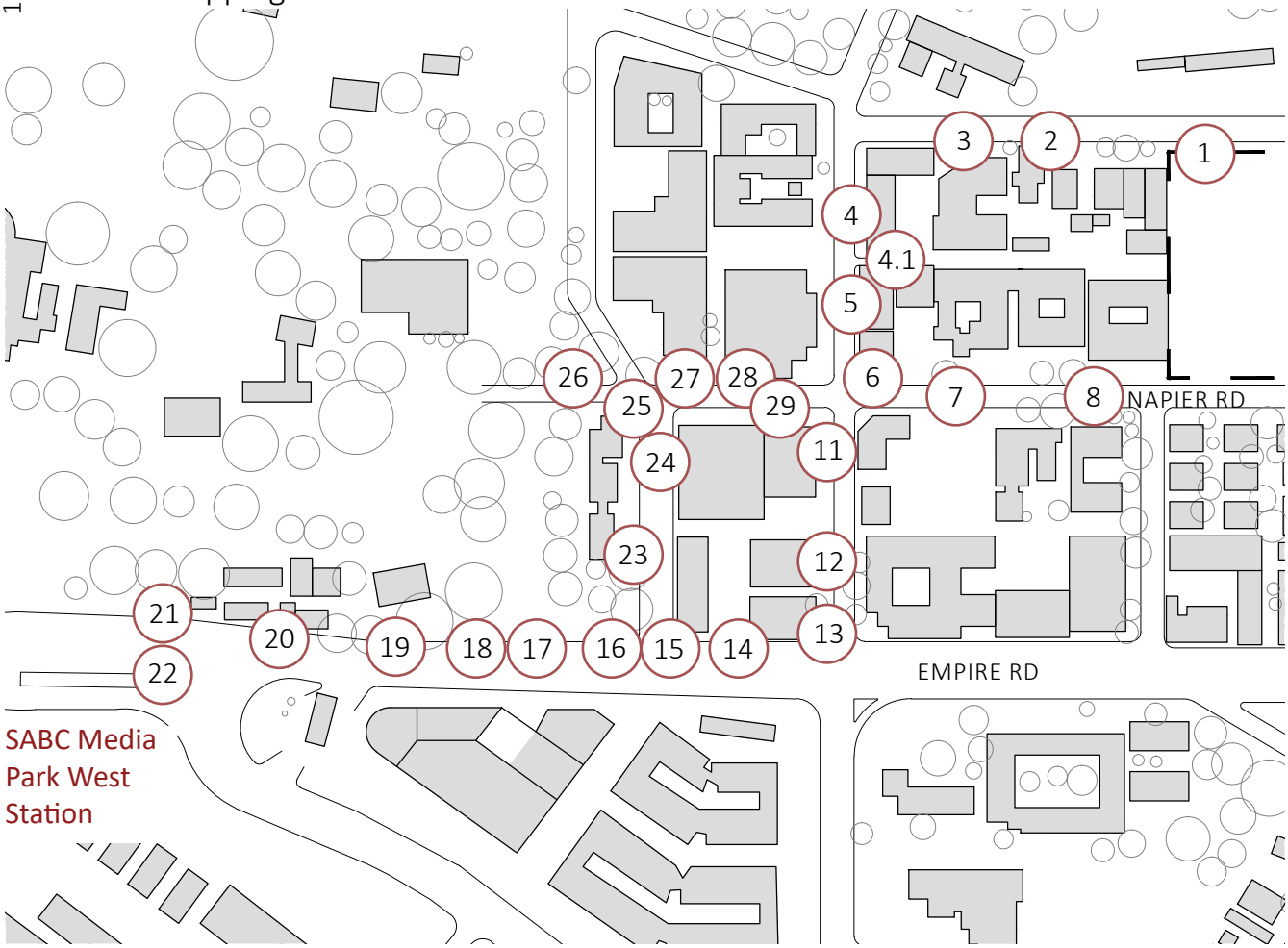
The strongest smell noticed originated from the corner of Park Road and Menton Road where a small coffee shop is located. The subtle smells of warm food and hot drinks floated onto the pedestrian walkway. On the opposite side of Barry Hertzog Road, just after the tunnel, is a small caravan take away which also makes meals. As one walks past, one may be able to detect the smell of grilled meats and maize meal depending on the time of the day.

Another smell of wet cement and sand was noticed on the Northern edge along Park Road however, this smell was only due to the ongoing construction of the current development.



touch





1



2



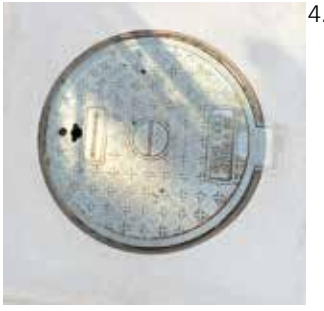
3



4



4



4.1



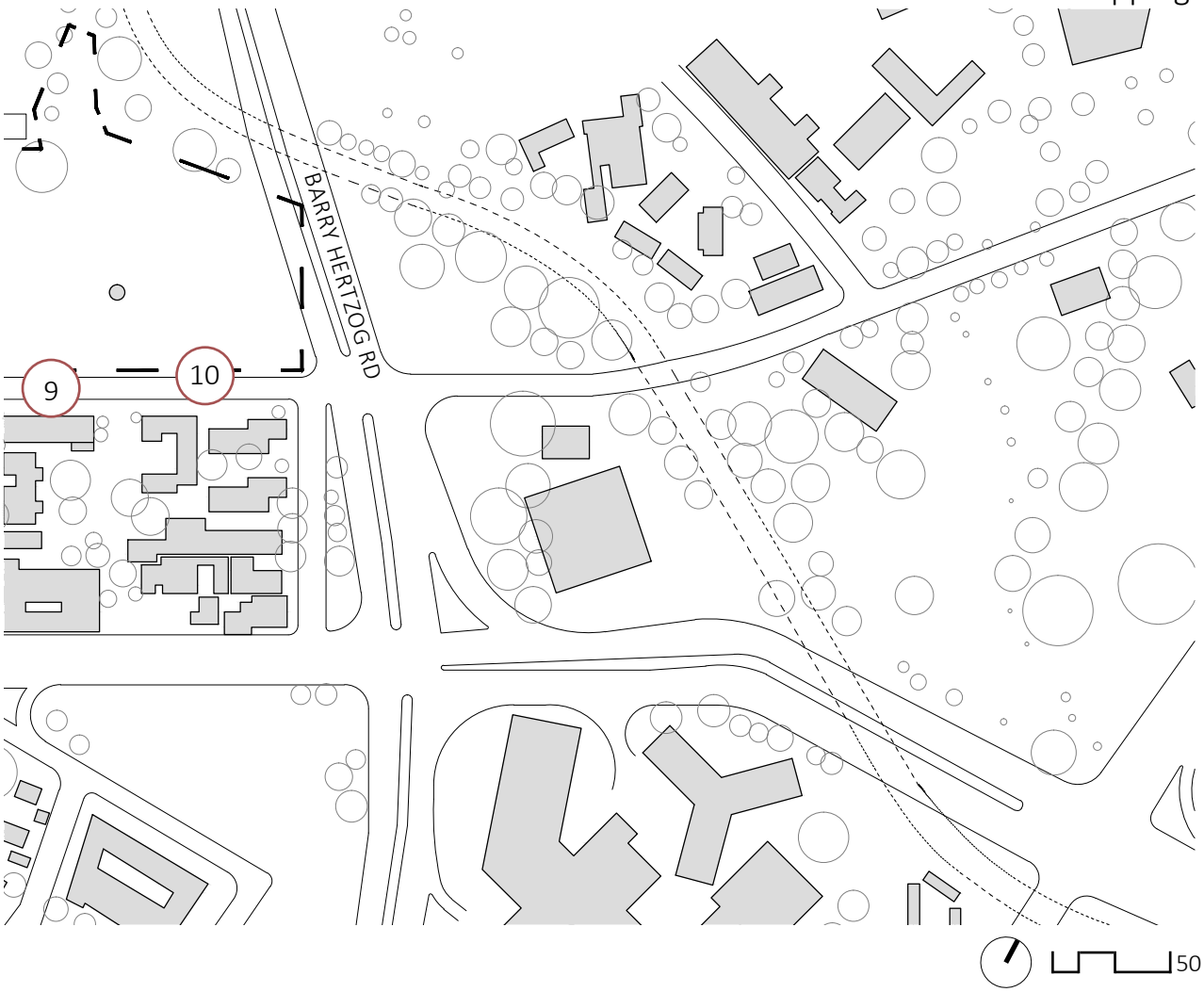
5



6



Previous Page Fig 2.39




7


8


9


10


11


12


13


14

Above Fig 2.40 Site Textures Documentary

14

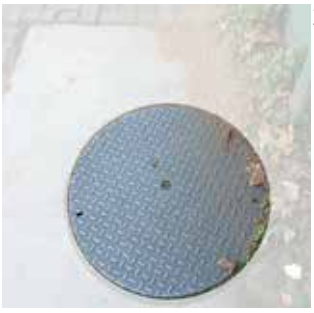

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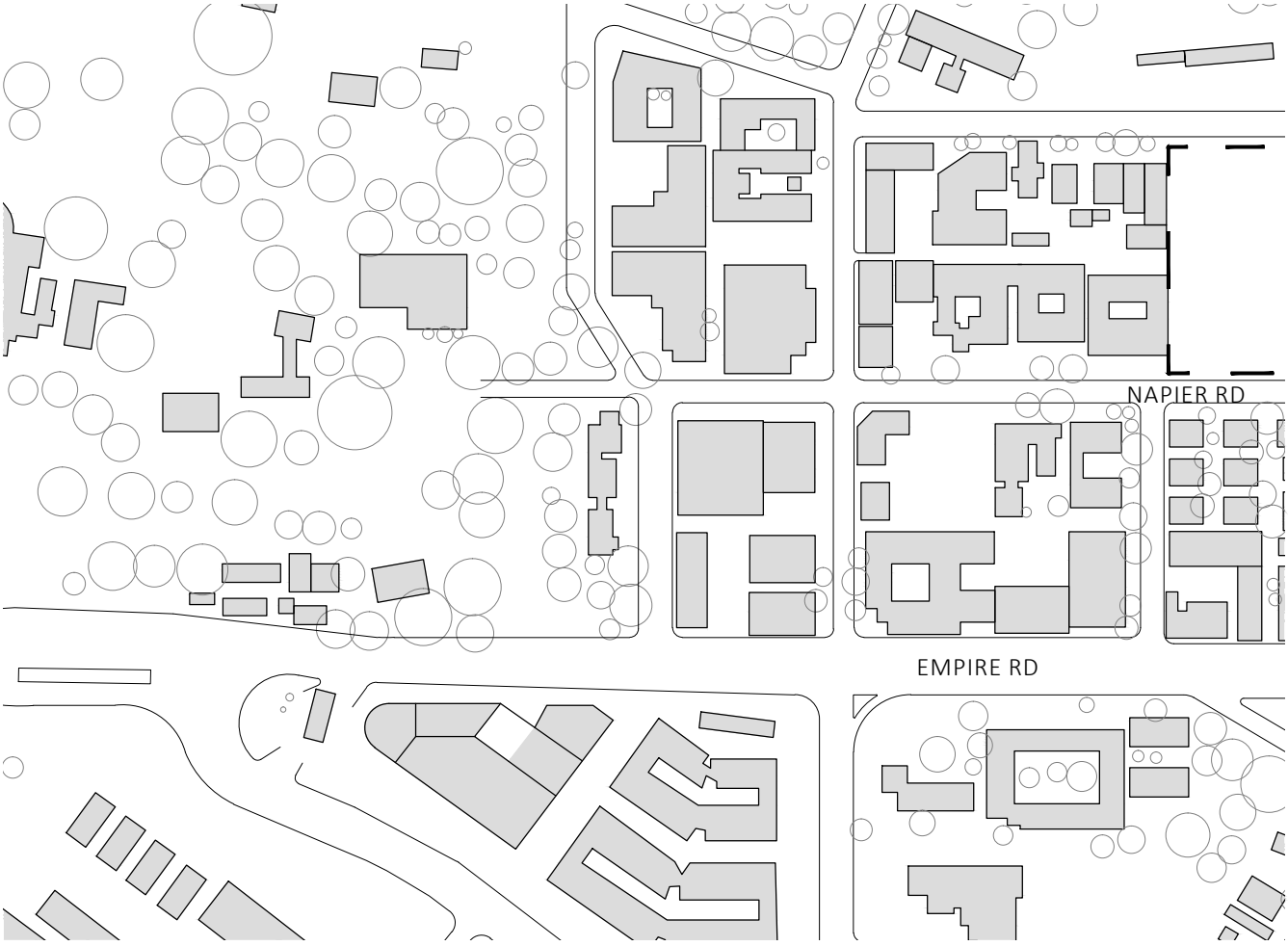

This investigation shows a large variety of paving materials used at different heights, widths and levels which causes issues for the recovering visually impaired person. The immediate surroundings of the site are currently undergoing major pavement upgrades which should result in more uniform pavement surfaces. The manhole covers proved to be rather useful as the covers act as one of the few successful tactile textures on the floor.

The route to the SABC Media Park West bus station could be dangerous as pavements were non-existent at times evident in image 14 and water meters were an obstruction in the middle of the pavement. The high speed of the vehicles driving past at such a close distance proved to be a frightening experience even for sighted people. This is due to the narrow pavements and the erratic strong gusts of cold winds caused by fast moving vehicles.

Textures at hand height varied from plastered walls to exposed facebrick and palisade fencing to precast walling. The difference and variety could easily assist the visually impaired, helping them to determine their surroundings.

Image 21 and 22 indicate that tactile pavers were placed to announce the location of the pedestrian crossing however, the button to press for safe road crossing was not in operation. The bus station's information board on the street edge does not include tactile information to cater for the visually impaired.

Left Fig 2.40 Site Textures Documentary



A 

A 

B 

C 

C 

D 

D 

E 


BARRY HERTZOG RD
A
B
C
D
E
F
G
I
J
K
M
L
N
O
P
Q
Milpark
Station West
50

E



E



F



F



G



G



I



J



K 

L 

M 

N 

N 

O 

O 

O 

O 

P 

Q 

Q 

Previous page and above Fig 2.40 Site Textures Documentary

The second and closer route to the Rea Vaya Station proved to be much easier and more comfortable than the previous route to the SABC Media Park Station. The pavements are smooth yet still rather narrow however, the vehicles driving past along the road do not travel as fast therefore strong gusts of cold winds do not occur. The new concrete bollards are placed at random times along the route however it does prove to be useful as seen in image E- the bollards direct movement towards the tactile paving for safe movement from pavement to street level. The bollards also do contain a rather unique tactile pattern and small strips of mosaic tiles which adds to the tactile experience.

Another aspect which adds to the tactile experience is the texture of seating in the park. It seems to be provided as a board game to pass time (see image O).

The only aspect which could be considered uncomfortable is the short tunnel that one has to pass through. Image D reveals the high volume and stark finishes to the tunnel, this does emphasize echoes and noise as one travels through.

A useful addition to the recent Milpark precinct upgrades is the tactile paving strip which cuts across the entire pavement to announce the location of the pedestrian crossing, this is seen in image F. However, it is unfortunate that there is no clear indication of when to turn into the park. Currently, there is only a manhole cover which could possibly act as an indicator but this could be unreliable.

The walkway in the park is smooth and easy to walk, it slowly ramps upwards towards the Milpark Station however, street lamps prove to be an obstruction in the middle of the walkway. A slight difference in floor texture can be detected when one is approaching the street when the floor texture changes from paving bricks to large concrete pavers in image P.

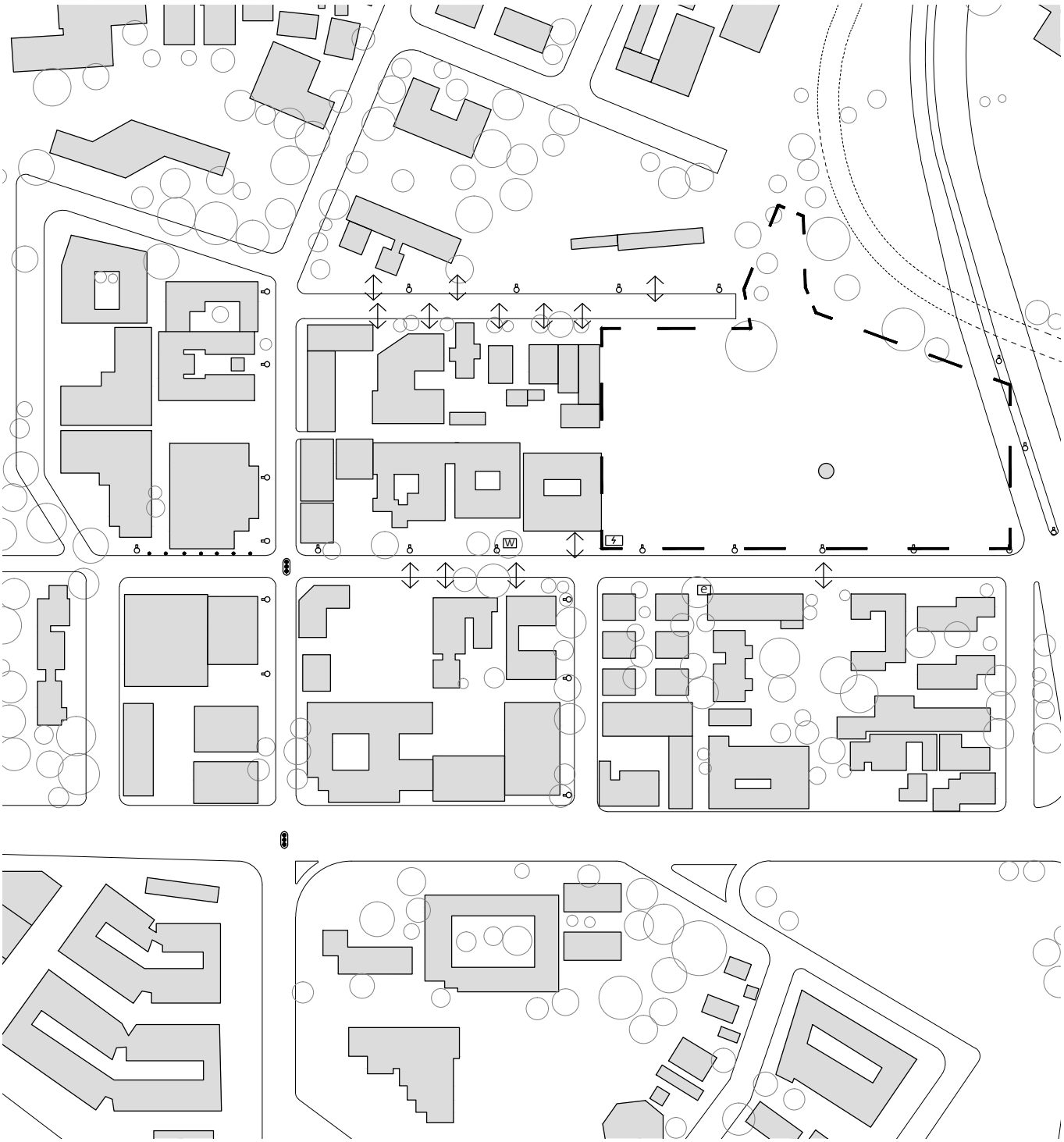
Lastly, the intersection next to the bus station does not provide for safe pedestrian crossing. The information board also does not include any tactile information.



Site Analysis

physical aspects





Previous Page Fig 2.41 North Eastern View



Street light
Robot intersection
Concrete bollards
Vehicular entrance
Electrical / data connection
Water meter
Electrical Substation
Bus Stop
Children's Playground
Exercise Equipment
Skate Park









Fig 2.42 Photo Documentary of Site

The aim of analyzing the physical aspects of the site and the surrounds is mainly to identify any obstructions that may be the cause of accidents or create confusion at a pedestrian level.

The physical aspects that were most interesting was the many vehicular entrances that occurred along Park Road. There is no clear difference in tactile paving to indicate this entrance for visually impaired people to be cautious however, it can be assumed that the sound of the vehicle will be sufficient enough for the pedestrian to be cautious.

Water meters on pavements also prove to be an obstruction in the walkway as these objects are often placed in the middle of the thoroughfare.

In contrast, a convenient physical aspect is the bus stop that is located on Napier Road along the boundary of the site. It is situated opposite the German Old Age Home which provides convenience however, a safe road crossing means is non-existent.

Further away from the site, is the newly refurbished Frank Brown park. Two new sports courts have been put in place along with a skate park, a designated children's playground area with play gyms as well as exercising equipment for adults. There is now a clearly paved walkway to get to the Rea Vaya station however, street lamps are placed directly in the centre of the walkway which causes an inconvenience for the visually impaired.



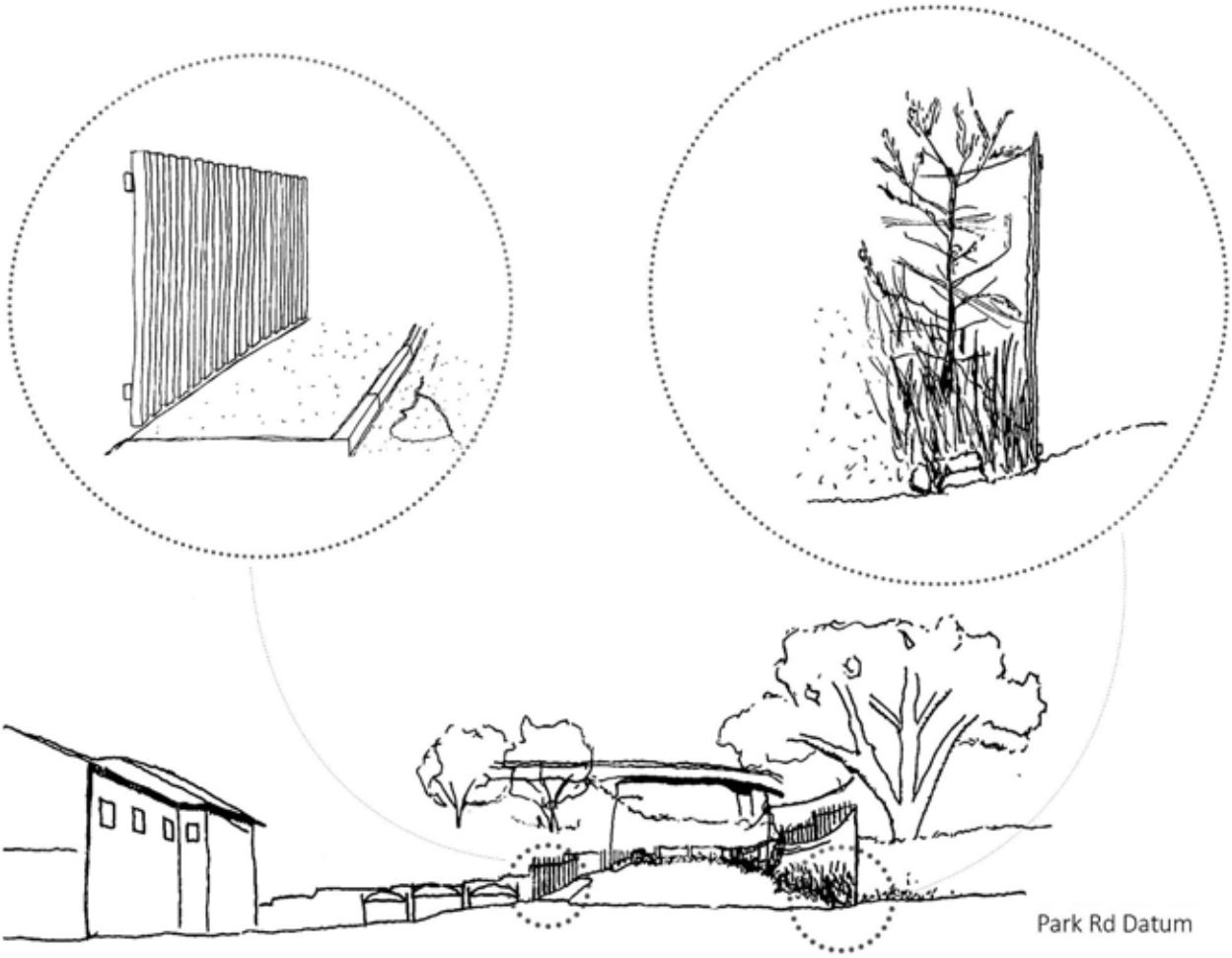
Site Analysis

the street



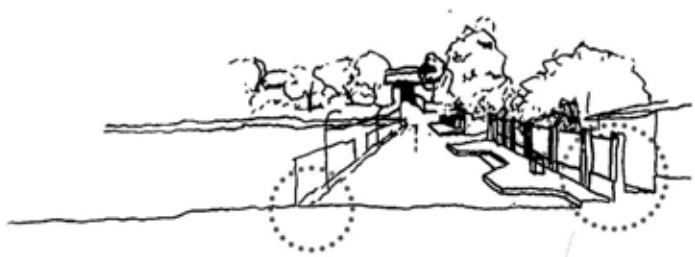


Previous Page Fig 2.43



Section A- Park Road

15



Section B- Napier Road

15











Fig 2.44 Photo Documentary of Site

Section A (Park Road) indicates a well maintained tarred pavement opposite the site as well as a derelict, overgrown area bordering the Northern site boundary.

The Southern site boundary indicated in section B is slightly better as parts of it are paved however, the paving is level with the road and extremely narrow. This causes dangerous encounters with moving vehicles and pedestrians.

On the opposite side, the newly upgraded pavement is shown - interestingly, the finished level is approximately two steps up with no appropriate and safe transition from the street to the finished level. The treads of the steps are too narrow and the risers are too high which result in unsafe walking.

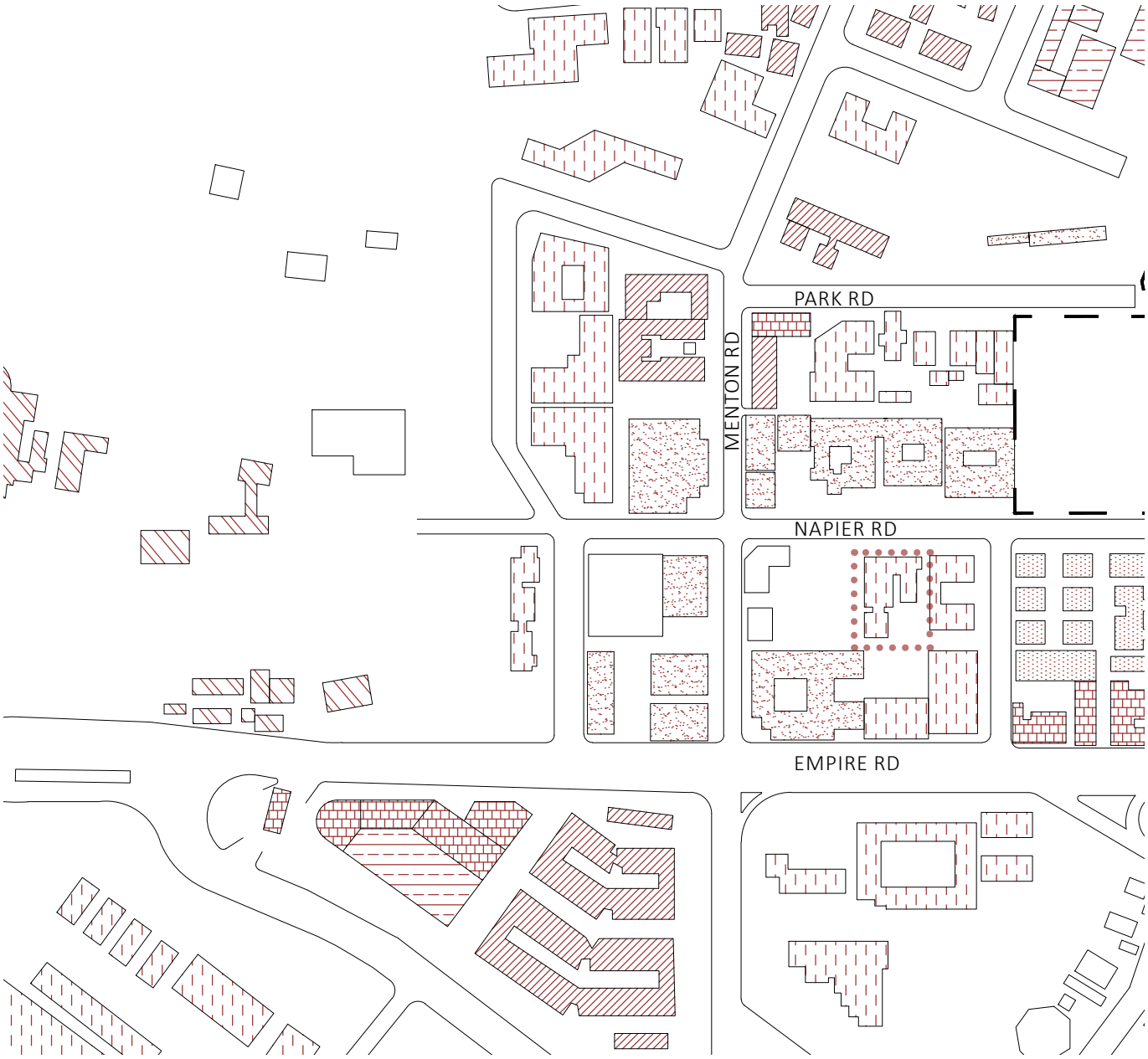


Site Analysis

zoning



zoning mapping



Retail

Laboratory Offices

Commercial- Offices

Government- Police Station

Recreation- Country Club

Residential

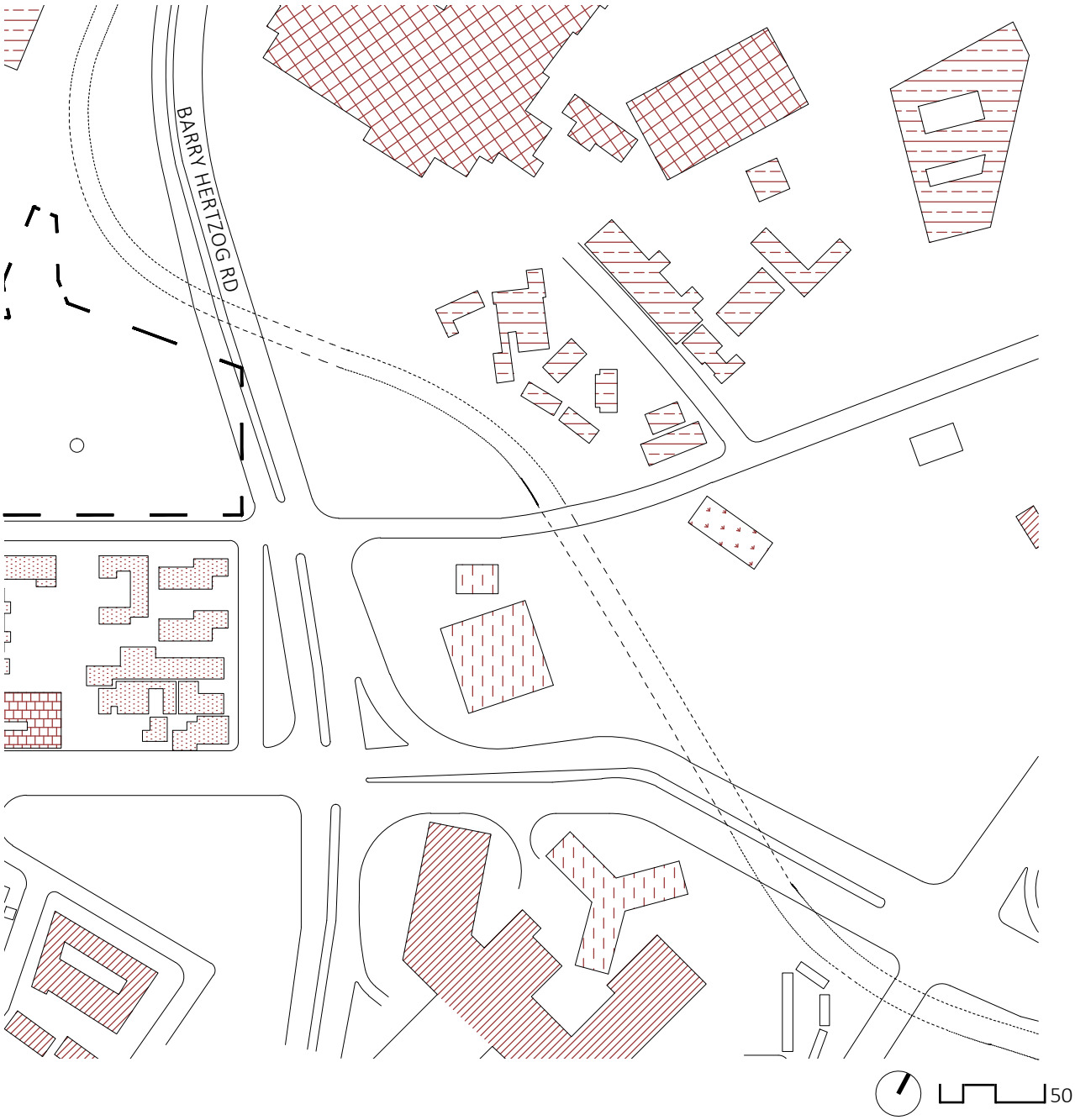
Residential- Old Age Home

Education

Medical

Deaf Federation of SA

Previous Spread Fig 2.45

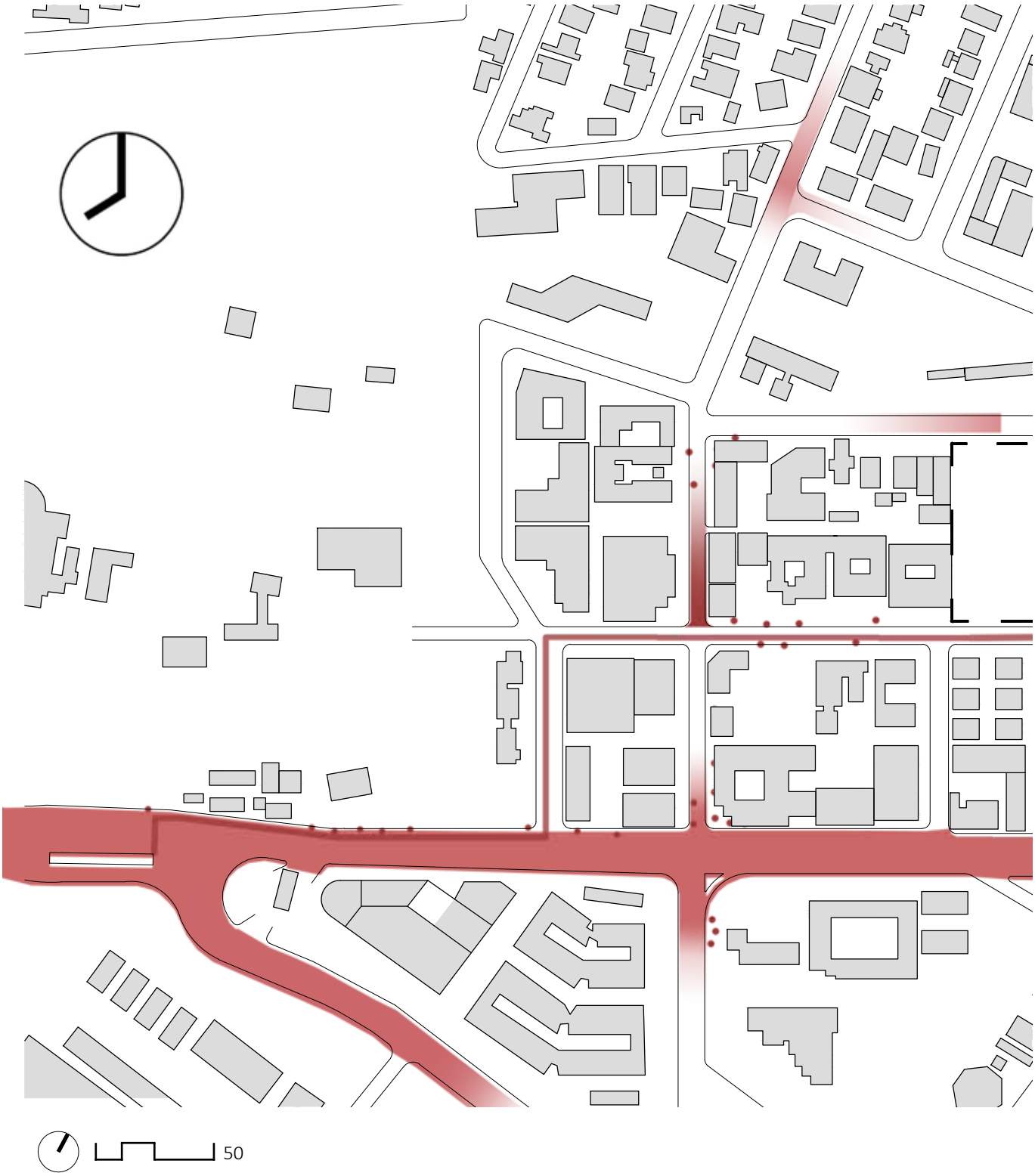


The zoning diagram indicates a large variety of building uses in the larger context therefore the site is conveniently located in order to reach out to many people - the suburban area, the commercial offices, the small business enterprises, the educational institutions and medical facilities.

An interesting discovery in the zoning investigation is that the Deaf Federation of South Africa is located in Napier Street, less than 50m from the Southern edge of the chosen site.

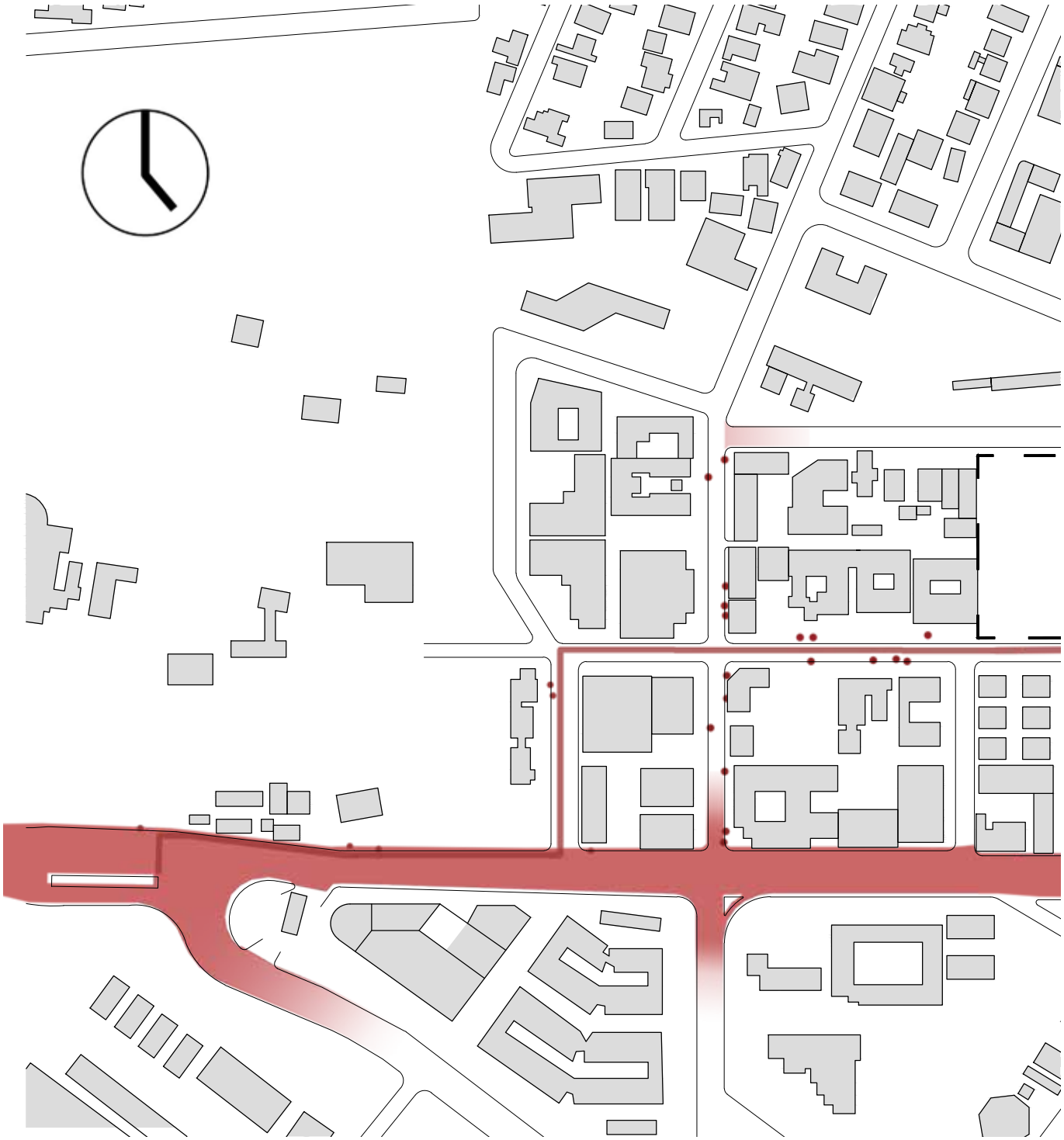
movement





Previous Page Fig 2.46


Pedestrian route 1
to bus station
Pedestrian route 2
to bus station
Pedestrian activity
Vehicular density



50


Pedestrian route 1
to bus station
Pedestrian route 2
to bus station
Pedestrian activity
Vehicular density



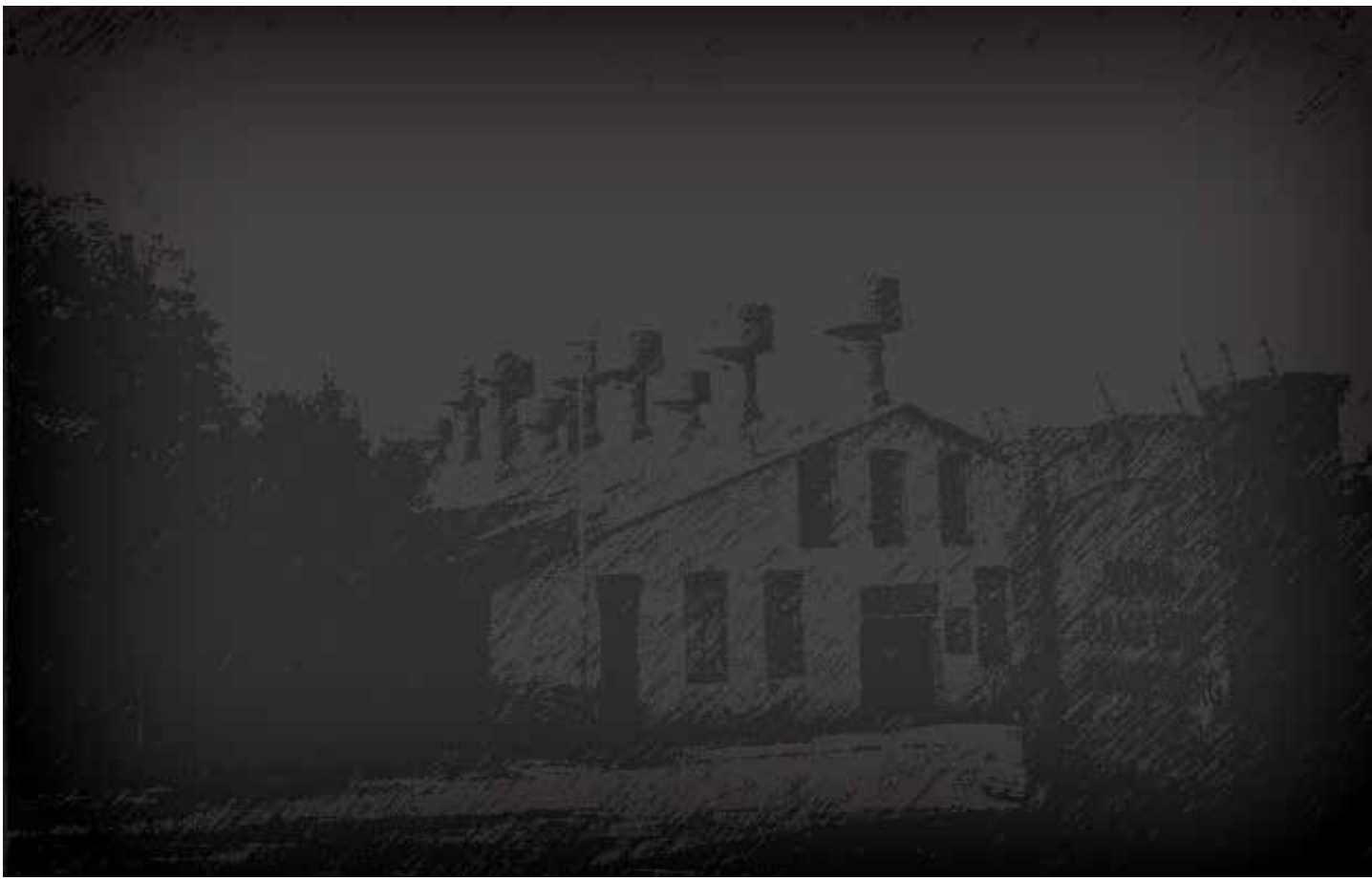


Fig 2.47 Photo Documentary of Site

During the morning, on a weekday, vehicular movement is much more active moving South on Barry Hertzog Road and Eastwards on Napier Road. There is also few people in the park along the route to the nearest bus station.

In the afternoon, the traffic congestion changes to Northwards on Barry Hertzog Road. This means the Barry Hertzog bridge is used more frequently in the afternoon. The streets in the immediate surrounds, Napier and Park Road, are less congested in the afternoons as well. There are visibly more people in the park, some are students from the nearby schools passing through to get to the bus station, some adults are making use of the exercise equipment and some are just passing by.

heritage network





Previous Page Fig 2.48

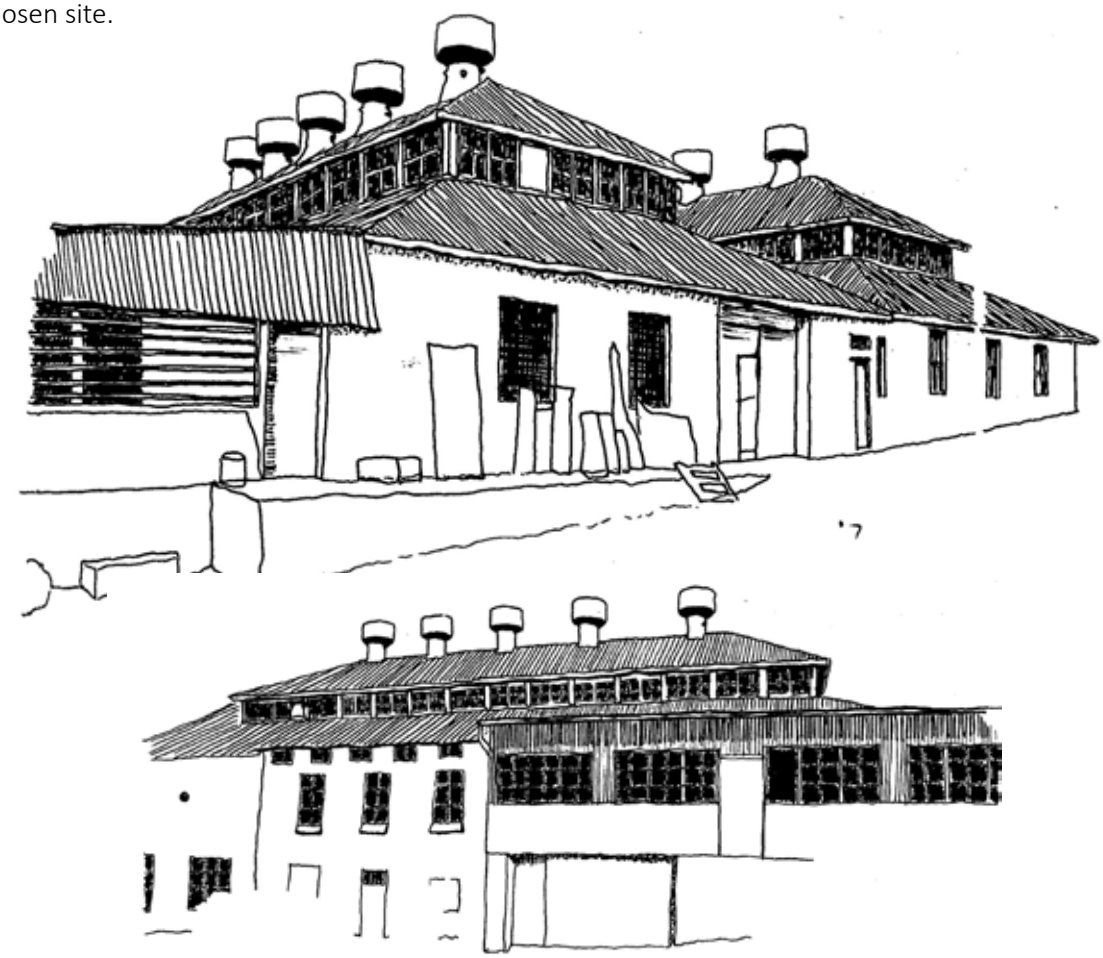
The chosen site contains heritage value as it is related to early pre-industrial commercial activity in the early mining days of Johannesburg. A group of people named the 'Zulu washermen' or 'AmaWasha' used to operate a laundry service in the Braamfontein spruit. These services were offered to the mining workers who did not have the time to do it themselves or wives to help with the cleaning. At the bottom of the site towards the Northern edge was one of the many areas where the washermen operated.

After some time, many people caught on the great business opportunity that the Zulu washermen had discovered and soon, steam laundry companies were set up all across the city. One of these was the Rand Steam Laundries which set up operations on the chosen site.

"The Rand Steam Laundries were the biggest laundry operation in South Africa" (Bird, F. 2006).

The site housed accommodation for black and white workers, the laundry buildings for washing, ironing, dyeing, dry-cleaning and soap production, and a large tower where borehole water was filtered for purification. Stables were also located on site most likely nearby the pepper tree which still stands today.

Unfortunately, all of the buildings including the large double volumes, the clerestory windows and the large metal ventilators have been demolished except for the round filtration tower.

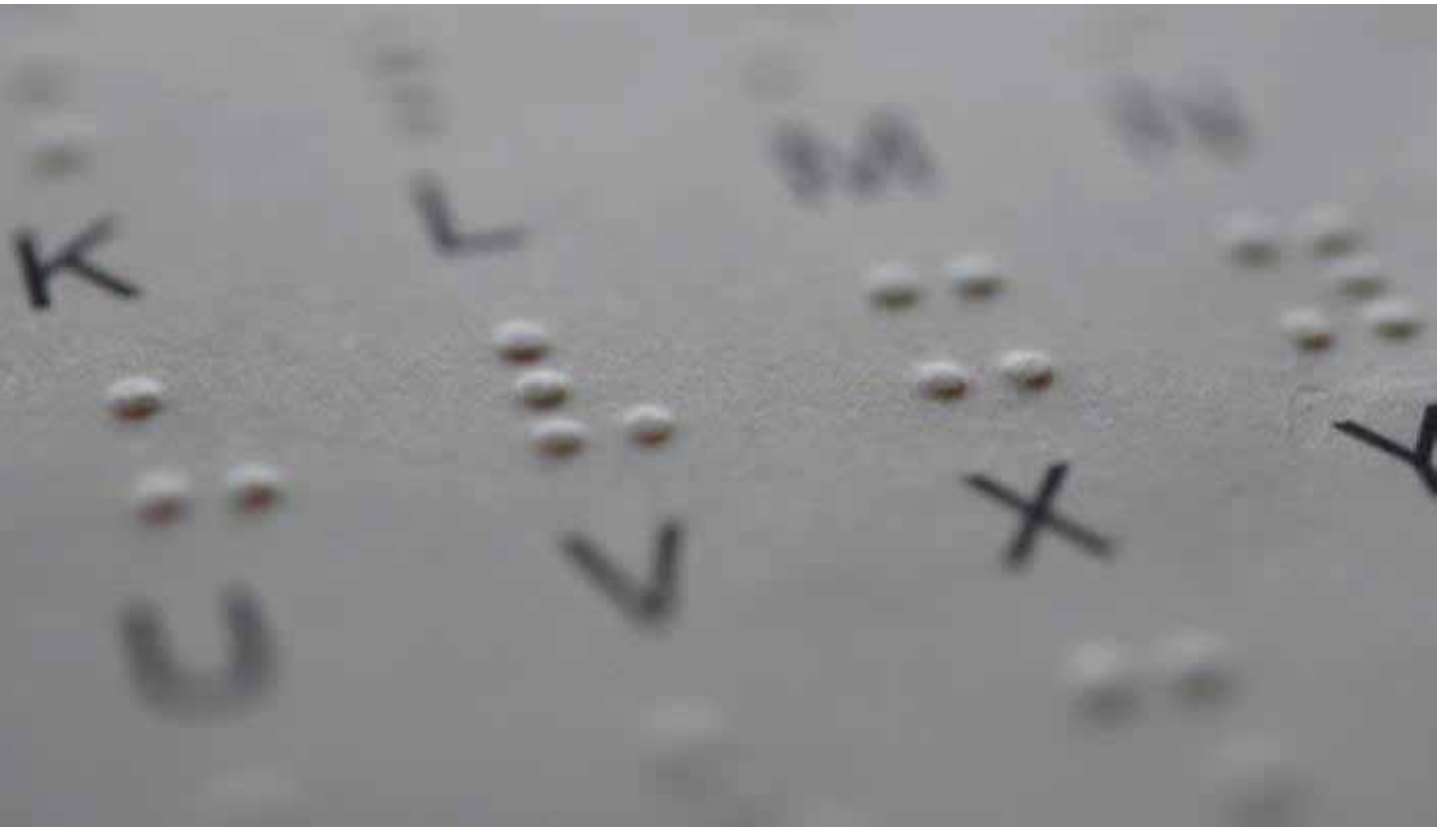


Above Fig 2.49 The Rand Steam Laundries Early Industrial Buildings



Fig 2.50




K
L
M
X
V
U

precedent research

2004

Lahdelma & Mahlamaki Architects

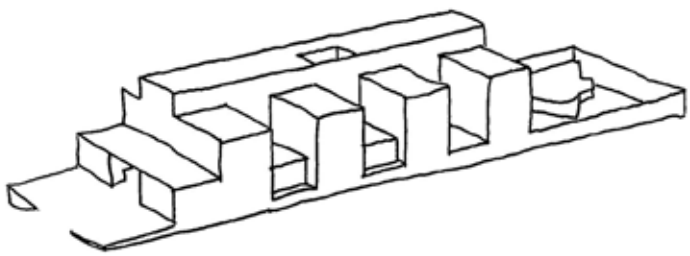
Service & Activity Center for Blind, Partially Impaired and Deaf-blind Visitors

Retail	Auditorium
Museum	Computer Room
Restaurant	Research Admin
Space of Senses	Rehabilitation
Library	Residences



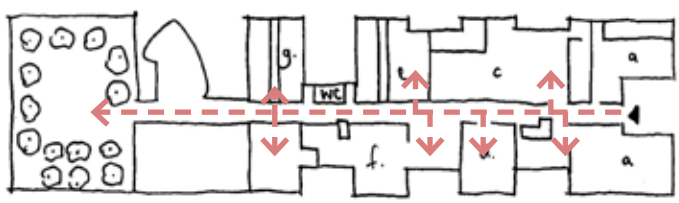
Form

Simple rectangular geometries make up the form of this building. It is interesting to know that this design was based on a previous competition entry however, it was used again as a centre for visually impaired people.



Circulation

The geometric form of the layout results in an orthogonal circulation route throughout the building. The entrance is on the one end of the long corridor and different functions branch off perpendicularly. This layout is the basis for each level in this multi-storey building



Sound of technology

The center makes use of audible beacon technology which enables visually impaired people to navigate the building by sound. The lifts in the building also have a audible feature.

Above Photograph Fig 2.52
All sketches on this spread Fig 2.53

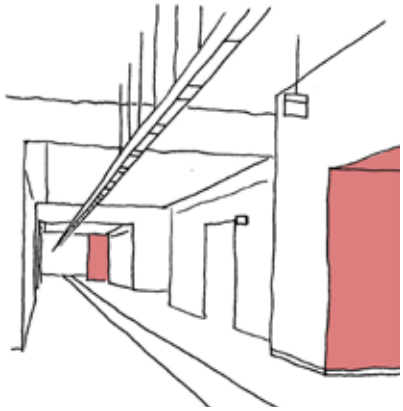
Sensory Aspects - Touch
The central corridors have a strip of textured tiles in order to guide visitors along, handrails are also incorporated throughout the building.

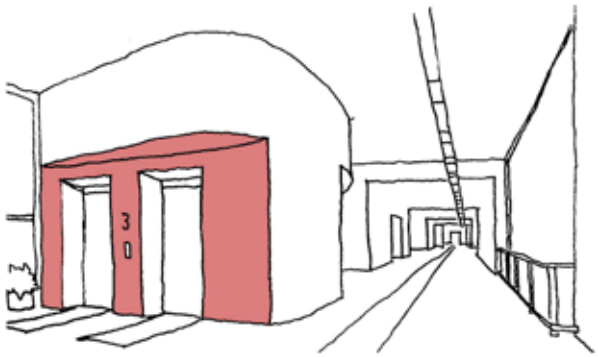


Lighting
Public areas are artificially lit to maintain a comfortable balanced lighting system.

Contrasting colour
For the partially sighted visitors, bright sparks of coloured walls in contrast to the neutral palette serve as an indicator to lifts and important functions.







2001

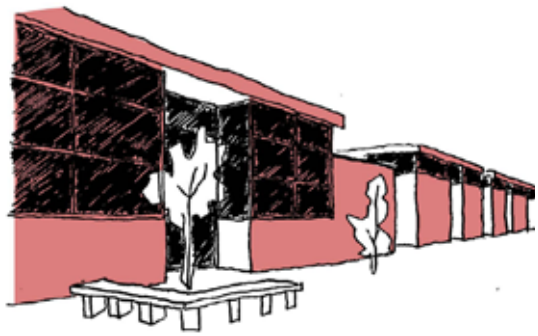
Taller de Arquitectura-Mauricio Rocha

Services Center for Blind & Partially Impaired

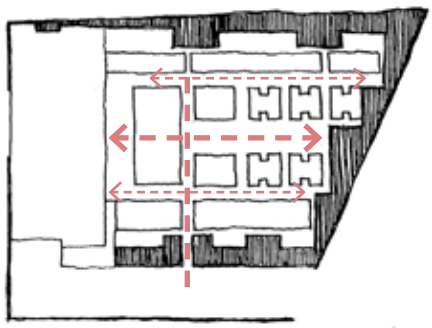
Administrative Offices
Cafeteria
Sound & Touch Gallery
Arts & Crafts Classrooms
Library, Gymnasium/Auditorium



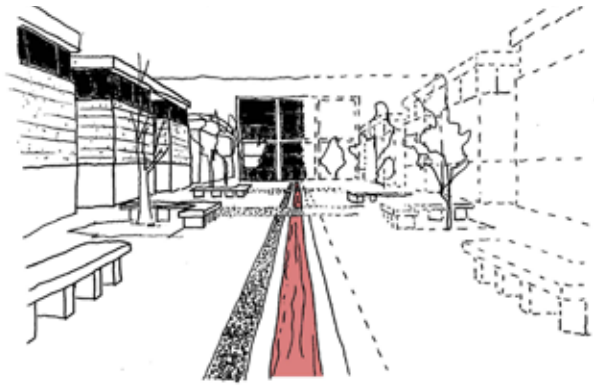
Form
Simple geometric rectangular prisms with flat roofs make up the entire form of the centre. Each section varies in spatial qualities making it easy to identify. This is achieved by various volumes, light intensities and materials.



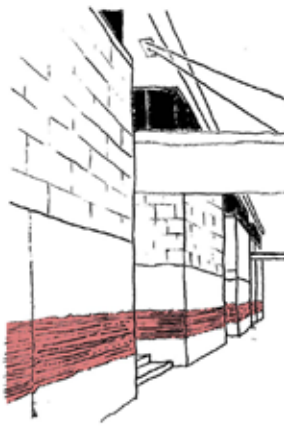
Circulation
The geometric form of the layout creates an orthogonal circulation route throughout the centre. As visitors enter the building, a series of filters in parallel are presented. These 'building filters' house various functions.

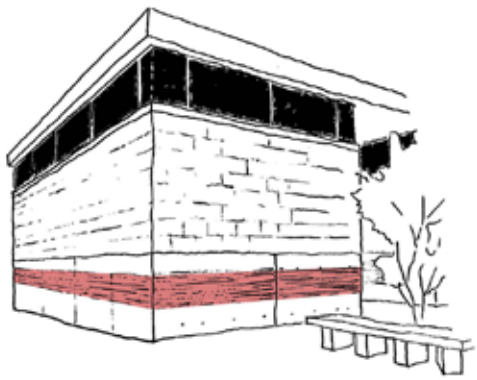


Sensory Aspects - Sound
Within the main courtyard of the complex is a thin water channel that flows down the centre of the space to guide visually impaired users along the way.



Above Photograph Fig 2.54
All sketches on this spread Fig 2.55

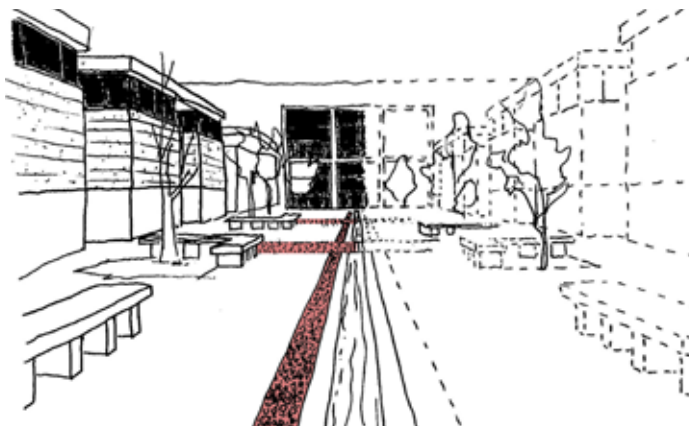




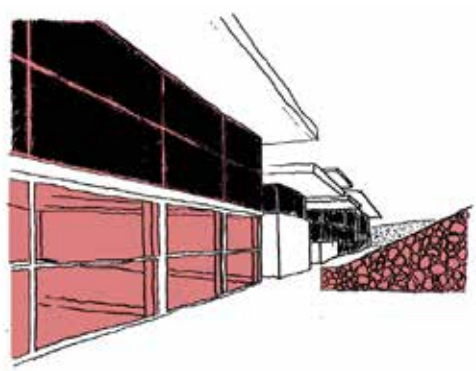


Sensory Aspects - Touch
Various textures are placed at hand height in order to help users identify their orientation within the complex. Every function has its own unique texture made with off-shutter concrete

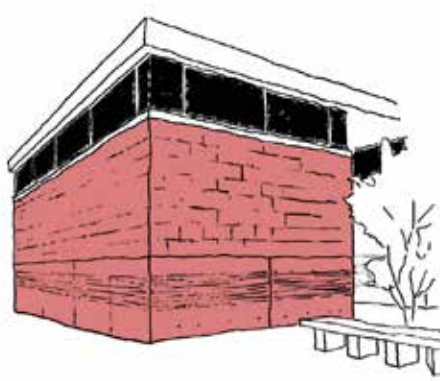
The sense of touch is extended to the floor where high relief paving stones are used to indicate where one is meant to walk or as a warning to not get too close to the water channel.



Materiality
Each function varies in spatial qualities so as to make it easy to identify. This is achieved by various materials ranging from concrete, tepetate bricks, steel and glass.



Sensory Aspects - Scent
6 different fragrant plants and flowers are planted along the perimeter of the complex to also act as sensors to aid in orientation within the complex.



precedent analysis | Chapel on Mount Rokko, Japan

1986

Tadao Ando

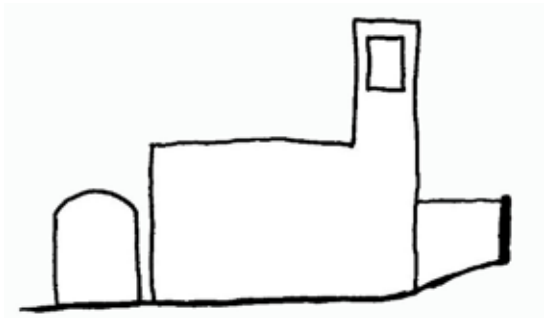
Small Hotel Chapel



Form & Material

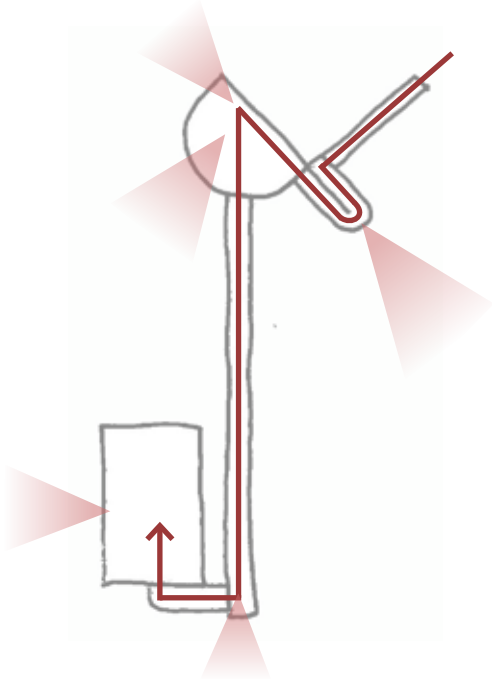
The use of simplistic geometric forms is evident in the elevation of the building. This could be seen as bare and uninteresting however the intention is not to create a visually appealing building but to allow viewers to focus on the experience of the visit.

The dominant material is smooth concrete so as to not attract any attention.



Circulation

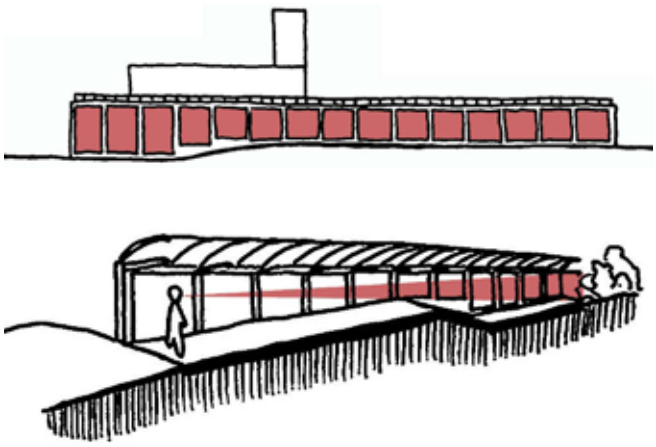
The focus on the user experience is extended to the layout of the building where geometric shapes are used once again, these basic forms are placed at different angles to create a meandering route which allows the viewer to engage with the natural surroundings from all directions. The long route also makes viewers aware of the sacred processional walk to the chapel to heightening the spiritual experience.

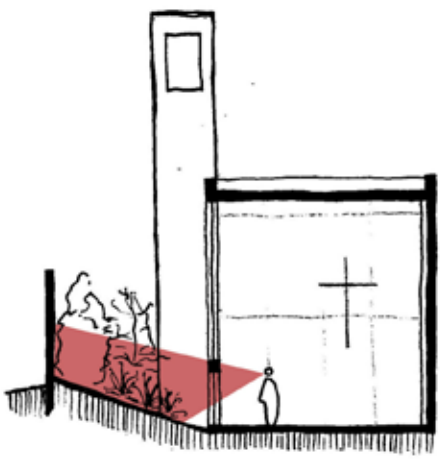


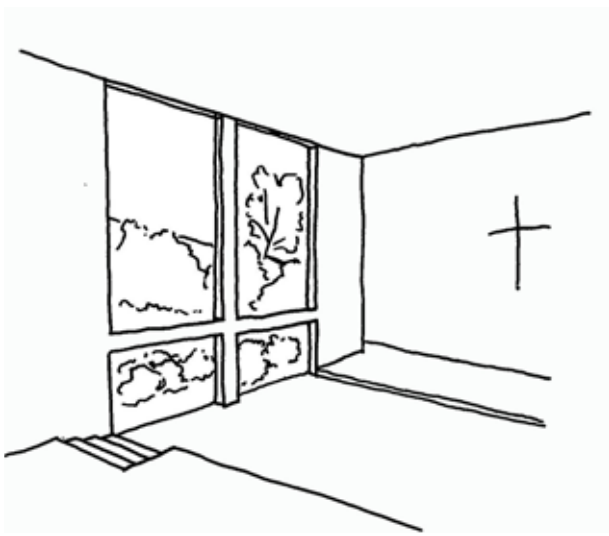
Above Photograph Fig 2.56
All sketches on this spread Fig 2.57

Sensory Aspects - (reduced) Vision
Along the route, visitors enter a long tunnel which is reminiscent of a processional walk along an arcade. Once inside this long tunnel, one can only hear the presence of nature as vision is blurred by the opaque glass panels on all sides. The only clear visual is the small opening at the end which highlights the landscape.

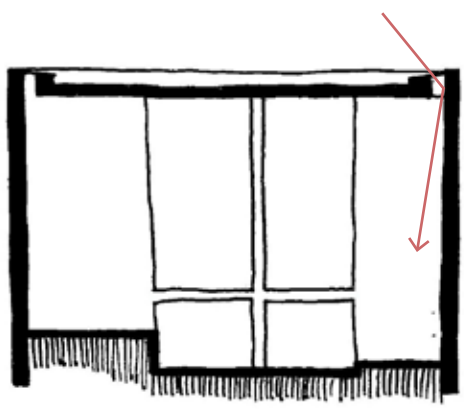
Inside the chapel, vision is restricted once again as the only view is placed on the side to engage visitors in the natural landscape while in a spiritual state of mind.

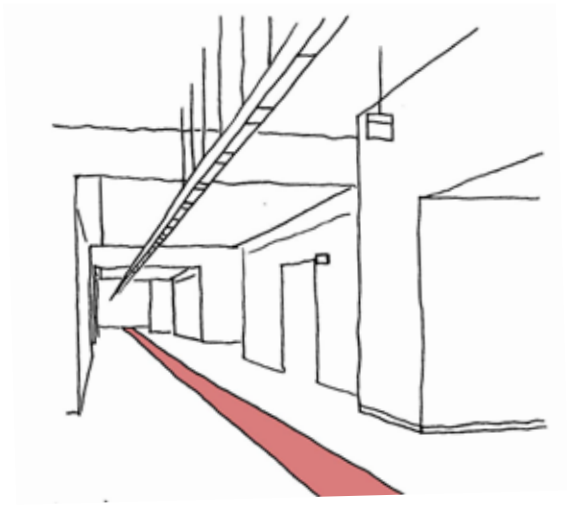


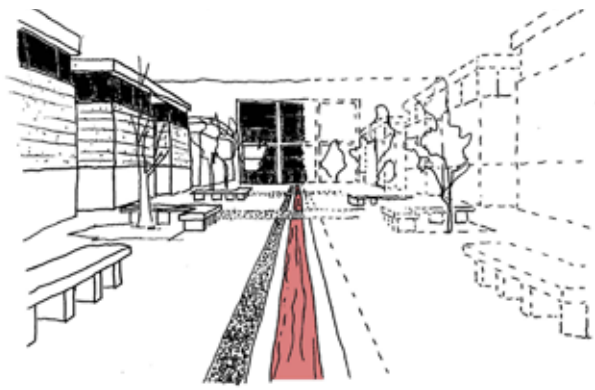


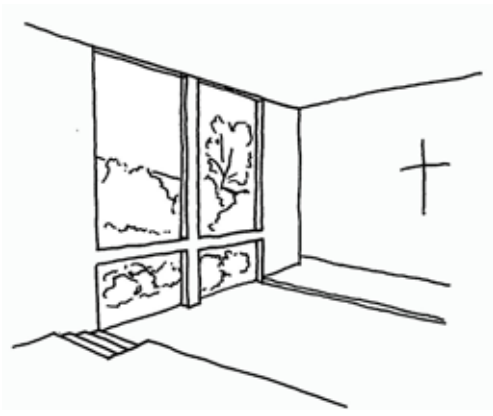


Sensory Aspects - (reduced) Vision
Apart from the only large window, light is restricted to only a few elongated pieces of glazing which allow soft light to gradually wash down the bare concrete walls. Ando uses light to heighten the sacred space and add to the solemn atmosphere by lighting up the concrete texture.









Top to Bottom Fig 2.53, 2.55, 2.57

Form & Circulation

An orthogonal form of circulation seems to be the most appropriate for visually impaired people as this is demonstrated rather well in Liris and the Center for the Blind and Visually Impaired. This movement type is advantageous in the fact that it can become directional and filter through various functions of the building as the Center for the Blind and Visually Impaired in Mexico has demonstrated.

The form is these 3 precedents have been kept simple and geometric for good reasons. The ease and simplicity of using clerestory windows to allow natural daylight as well as maintain privacy is clear in the Mexican precedent. Ando makes use of simple forms to not attract the visitor's attention.

These reasons are well justified however, could the form not be designed in order to control the amount of daylighting in a space instead of relying on glazing?

Materiality

The Mexican precedent is the most successful in using various materials to a visually impaired person's advantage. The architects make use of different cast concrete patterns placed at hand height to act as an orientation indicator. Each building is also constructed from a different combination of materials intending to produce different resonance within the space.

The use of materials also becomes important when the design intention is to focus on the surroundings. Ando creates a successful version of this by making use of opaque glass panels along the tunnel which restricts vision but allows on to hear the landscape instead and focus on a landmark- in the case of Chapel on Mount Rokko, this landmark was the framed landscape view.

Sound

Where Ando is more subtle in creating opportunities to hear, others are more obvious. A water channel running alongside a walkway is just as effective as seen in the Mexican center and it creates an audible yet tranquil landmark.

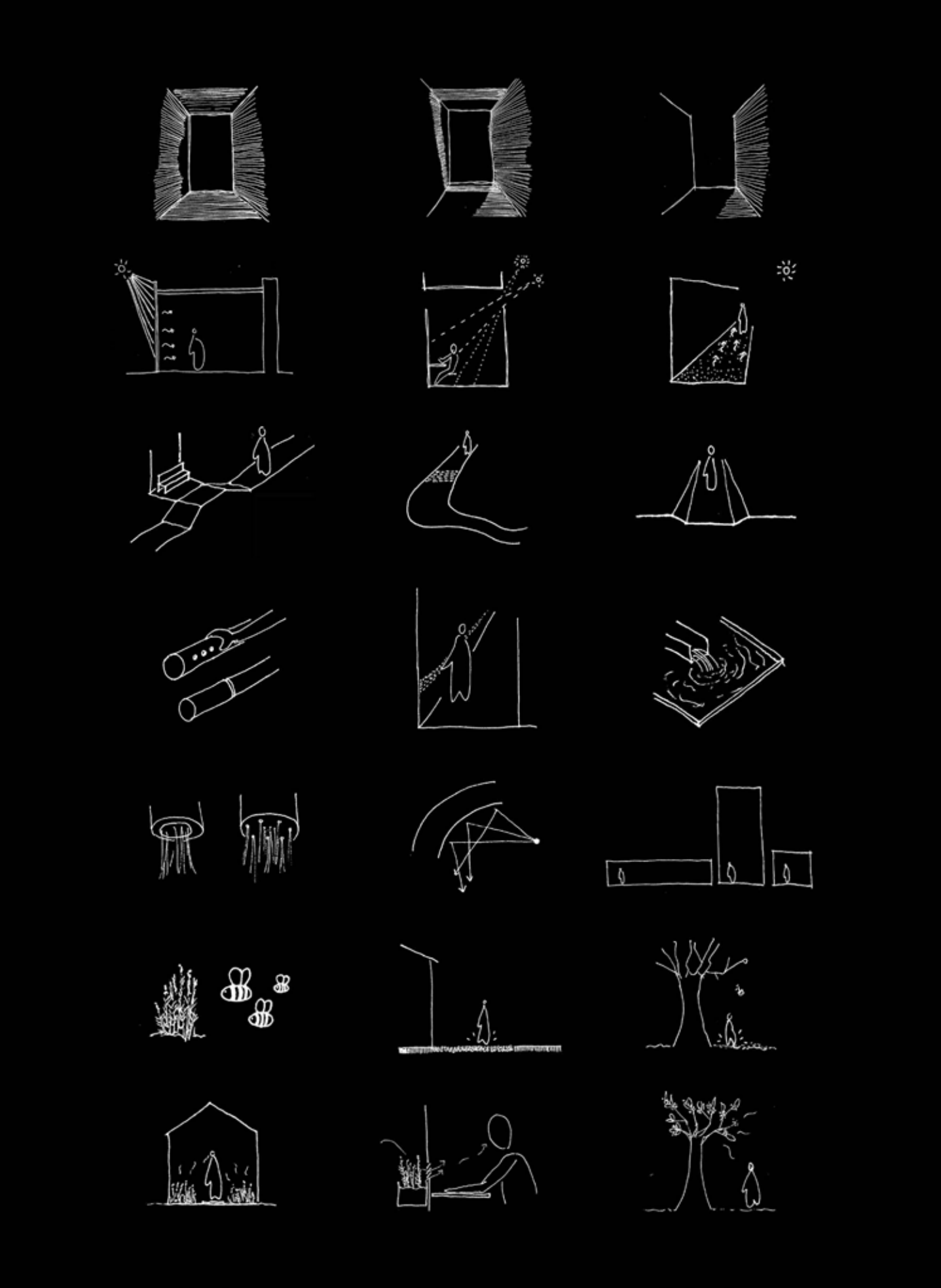
As mentioned before, the use of materials in a space is important in determining the spatial qualities on the interior.

Scent

The only precedent which includes the sense of smell is the Mexican precedent which makes use of fragrant plants and flowers that are located along the perimeter almost as if it were to act as a warning for occupants who have traveled too far. These plants, therefore, act as fragrant landmarks.



PART 3 REDISCOVERY



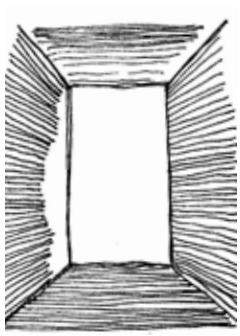
conceptual design

Part 2: Learning and Recovery revealed a new way of understanding site. Instead of the simple method of site observation and note-taking, it involved a deeper sensorial method; listening to the notable sounds, feeling and touching the textures of the ground and boundaries and smelling the scents in the air. The use of the other senses made it clear that it was the way forward- to design for the hands and feet, the ears and the nose.

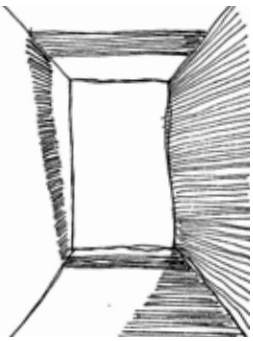
The precedent research further emphasized this design approach by making use of forms and textures that are easily identifiable, as one cannot always rely on technology. Contrasting elements were used to draw attention to certain information. Landmarks are important to gauge one's location within the environment. Whether it be a tactile or an auditory landmark, it serves as an important beacon for navigation. Capturing scents and fragrances within a large environment are seldom successful therefore it can only be used as an addition to the sensorial environment created.

As a result, the most dependable sense is touch. It can range from the physical texture of an element to receiving a feeling from another source.

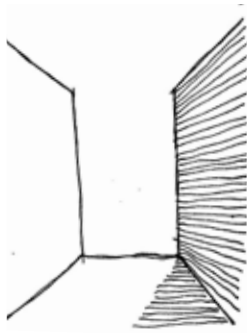
Previous Page Fig 3.1



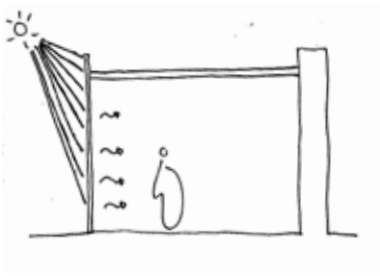
cold



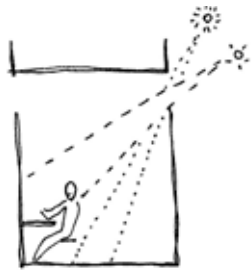
cold - hot



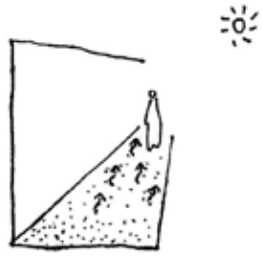
hot



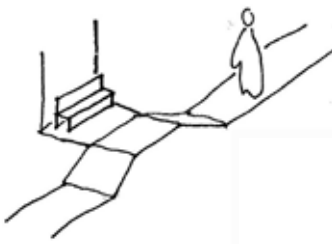
heat transfer



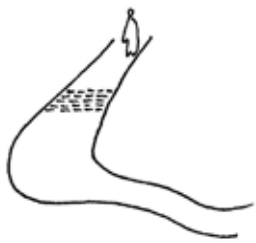
direct heat



radiate heat



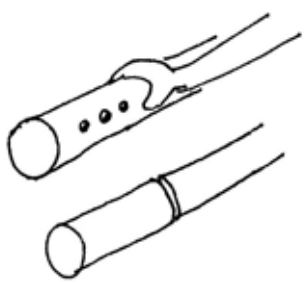
change in gradient



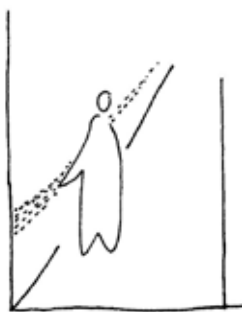
textures



level difference



texture difference



wall texture

Fig 3.2 Conceptual Sketches for Touch

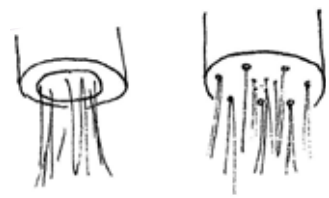
Touch

How does built form provide a variety of information without the use of signs and audible technology? The sense of touch simply refers to a variety of different textures to provide information. This can be the form of a handrail or wall textures. It can even extend to the various textures on the floor.

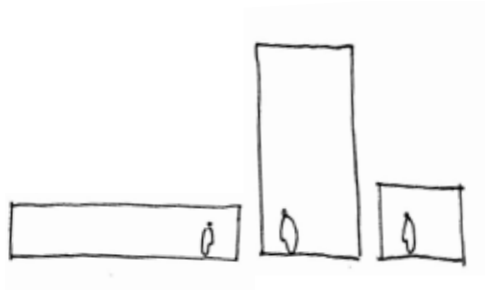
Thermoception is just as important as it can be seen as an extended version of touch, it relates to feeling temperature directly from the sun or receiving indirect radiant heat from other sources such as paving. Additionally, It can also be related to perceiving cold, the lack of sun. Furthermore, other natural elements such as the wind can also be captured to act as a type of landmark.



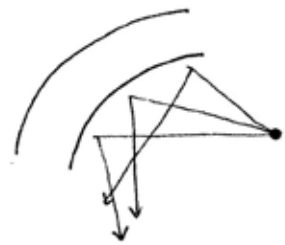
sound landmarks



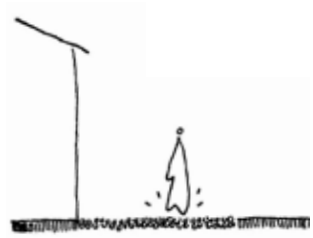
loud - soft



sound - volume



echo - form



walking sound



natural sounds



seasonal sounds

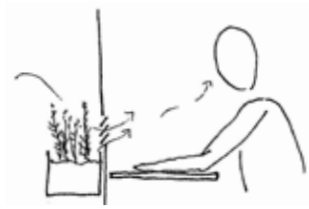
Fig 3.3 Conceptual Sketches for Sound

Sound

Sound is usually emitted by a source object such as a body of water. In the precedents research, a water channel was placed in the main courtyard to direct the visually impaired users along the path. Using water as a source of sound requires one to think about what type of sound to use- a loud or soft sound.

Additionally, the shape and size of a room must also be considered as sound reverberation can create uncomfortable spaces.

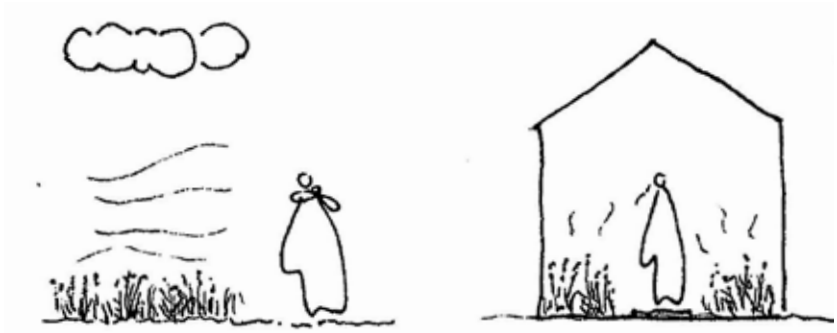
In addition to the textures, the various floor finishes are able to produce varying types of sound as one walks on it. The floor materials which produce sound as pressure is applied could be rather useful as it alerts visually impaired people of their surroundings. From a natural perspective, the fallen autumn leaves of a deciduous tree and the bees that culminate around flora will provide a seasonal sensory experience.



close proximity



natural scent
(seasonal)



capturing scent

Scent

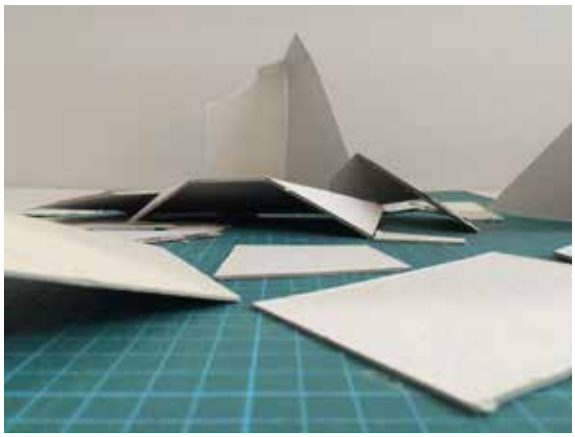
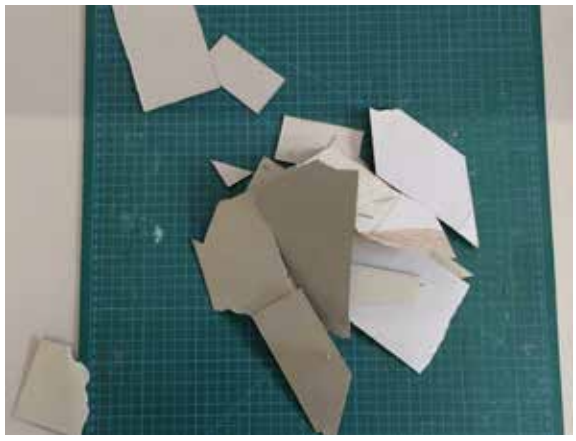
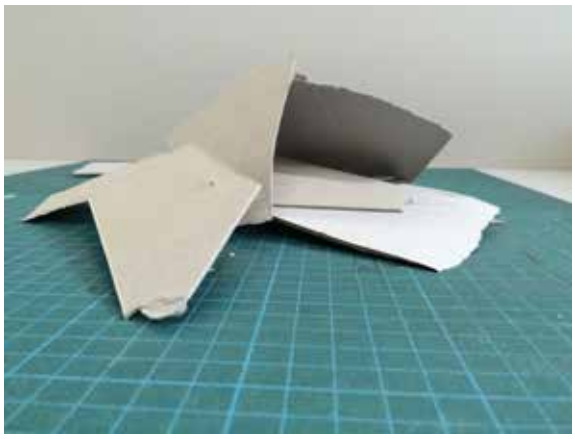
It is understood that scent is not as reliable as the other senses as large open spaces tend to void their existence. As a result, the design proposal should attempt to capture the scent in order for it to experienced by the users of the centre.

Fig 3.4 Conceptual Sketches for Scent

As a result, the conceptual design culminates in the implementation of sensorial elements. These elements are namely the tactile and thermoception features, the auditory landmarks and the behaviour of sound within a space, and the fragrances of the natural landscape.

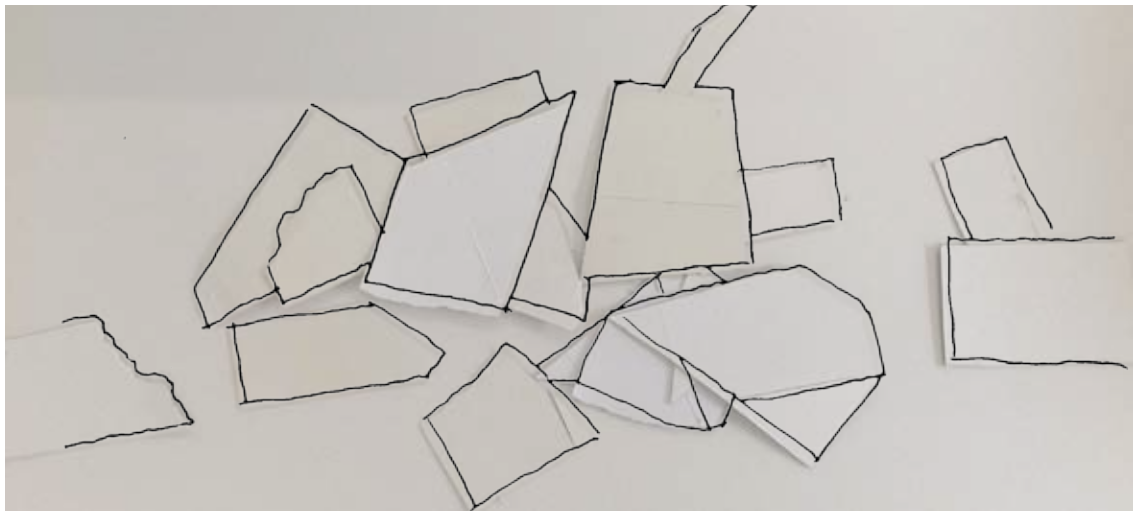
One can be easily overwhelmed by the introduction of all these elements at once therefore careful planning and organization will lead the proposal to a centre that is subtle in its sensorial elements yet still able to be interpreted with ease.

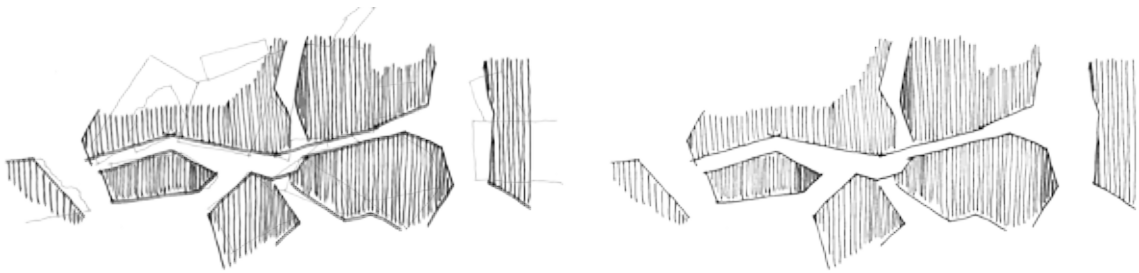





Massing and Void





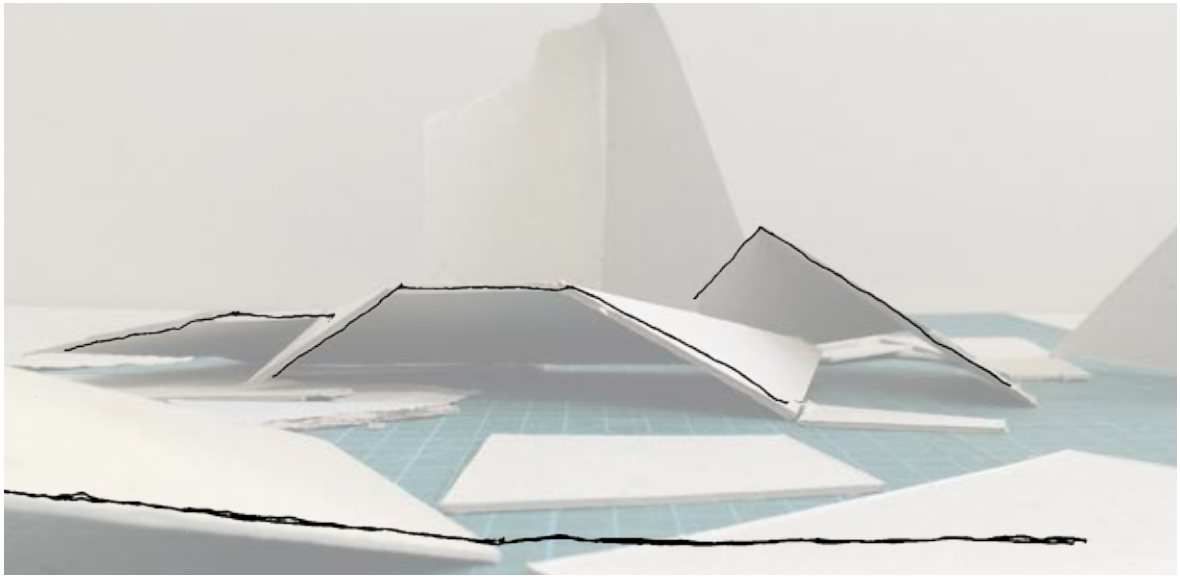
Texture and Scent





Left Fig 3.5 Photo Documentary of Fragmentation
Above Fig 3.6 Photo Documentary of Wood Carving and Burning

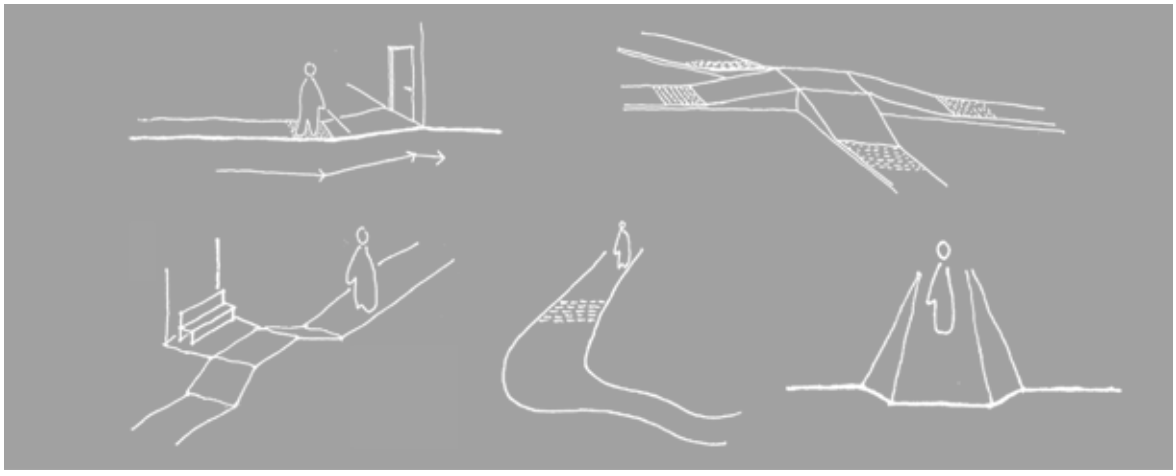
Sense of Touch



Natural Light

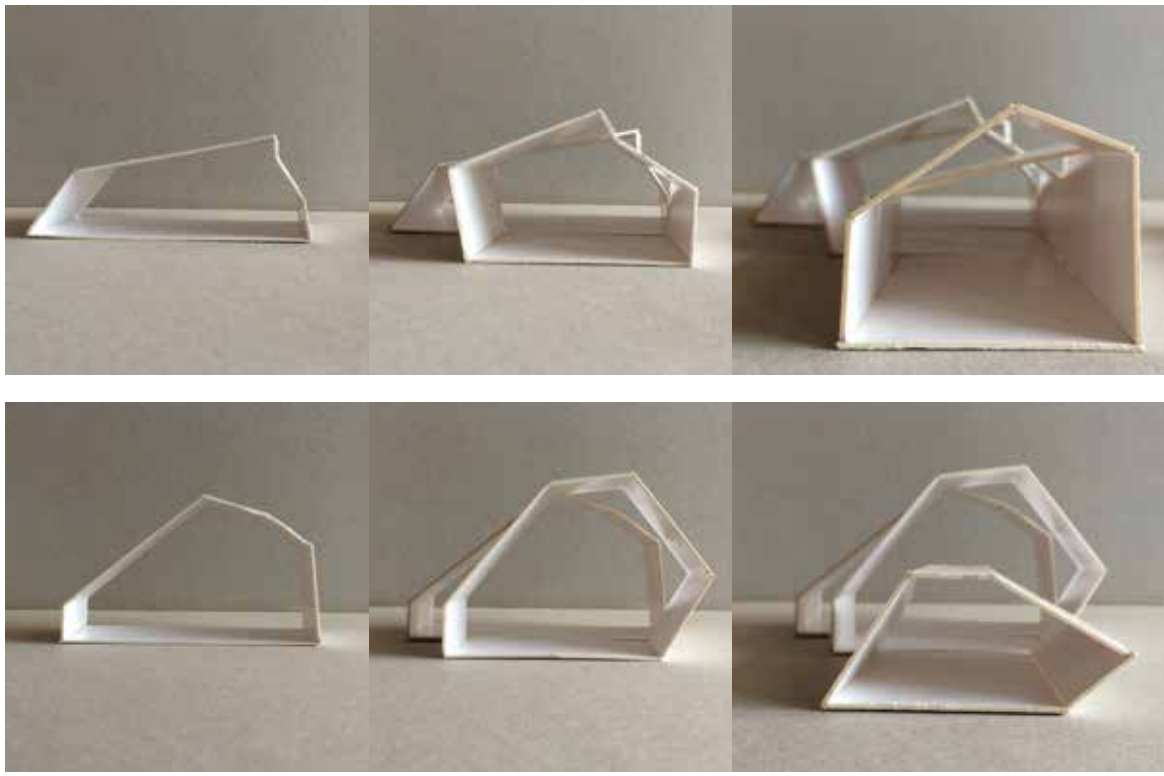


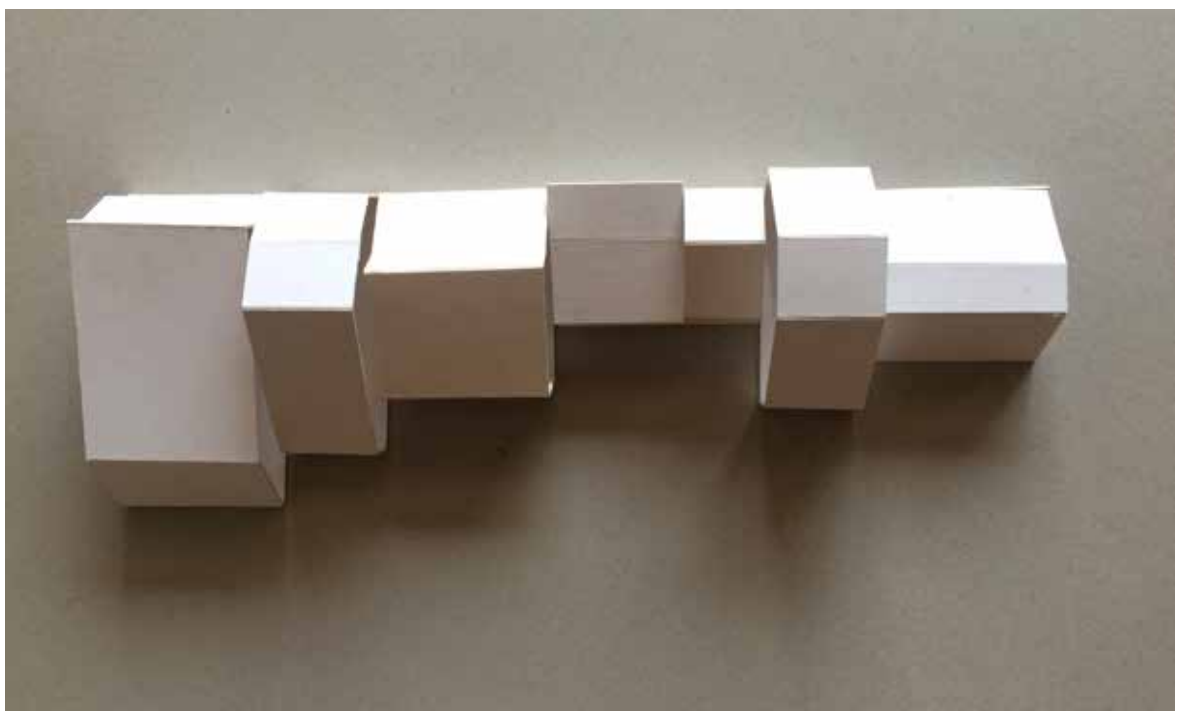
Level Differences



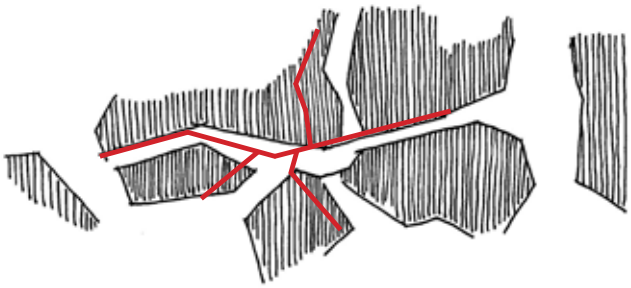
Interior Volume



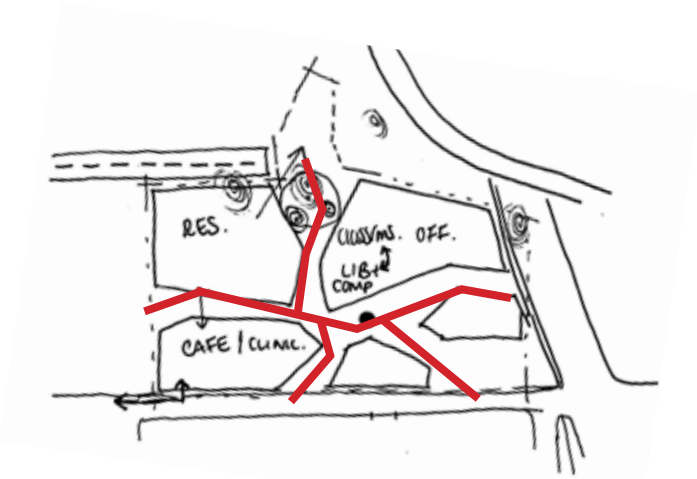




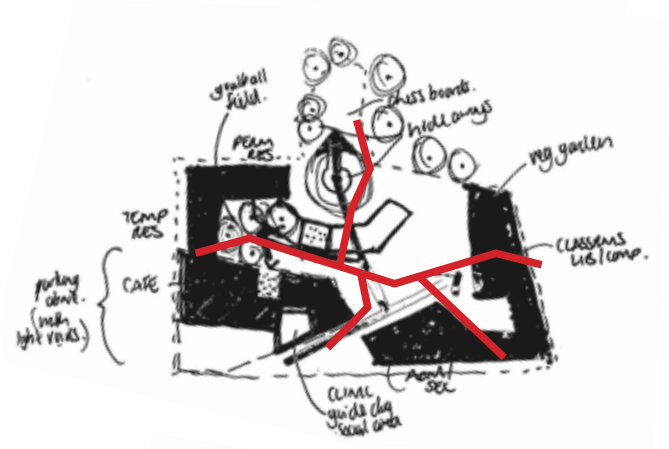
Top Fig 3.7 Photo Documentary of Interior Volumes



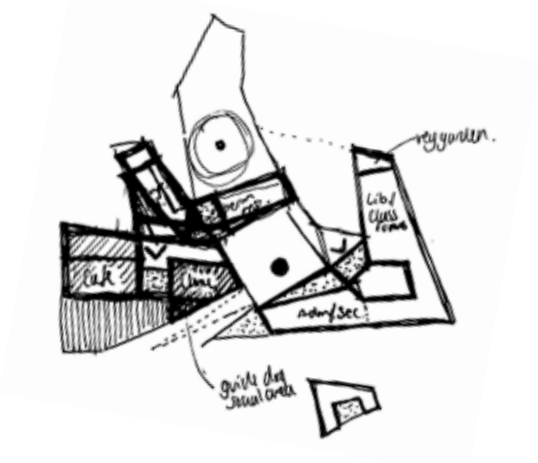
The massing diagram from the conceptual design model explorations indicated the possibility of forms and circulation.



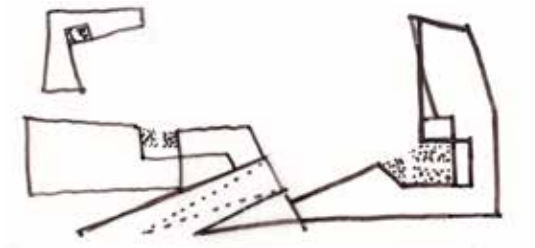
This massing diagram was then mirrored and superimposed onto the site in an attempt to achieve a conceptual diagram of the once fragmented pieces of the site. It indicated a clear north-south circulation route perpendicular to the east-west circulation route. The east-west route contained the old filtration tower as a focal point.

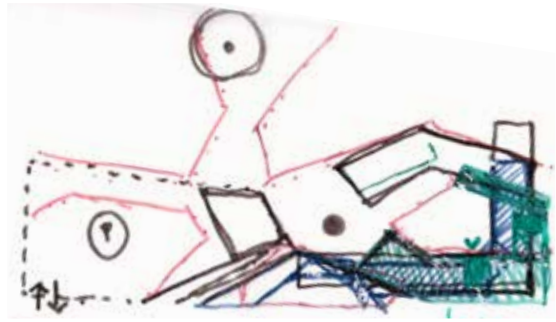


The circulation route was kept in place while the angles were taken to form masses along the perimeter. This decision was to create a large private interior courtyard for the visually impaired people.

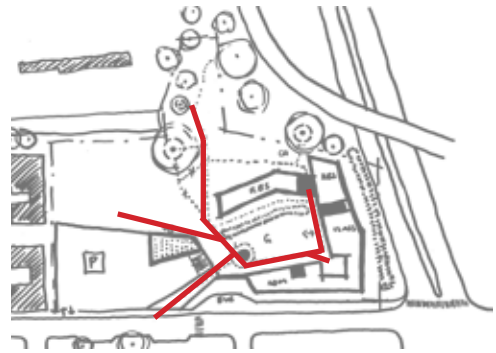


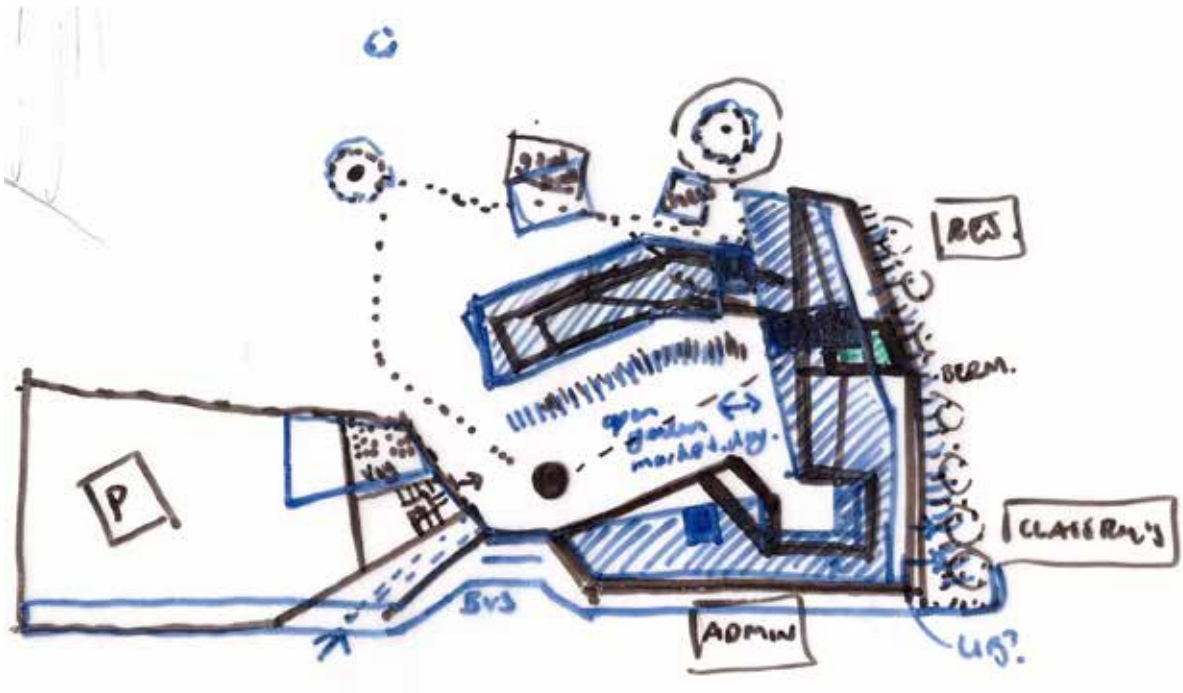
As the centre serves the visually impaired, the main entrance takes on the form of a pedestrian ramp from street level towards the focal point of the old filtration tower.

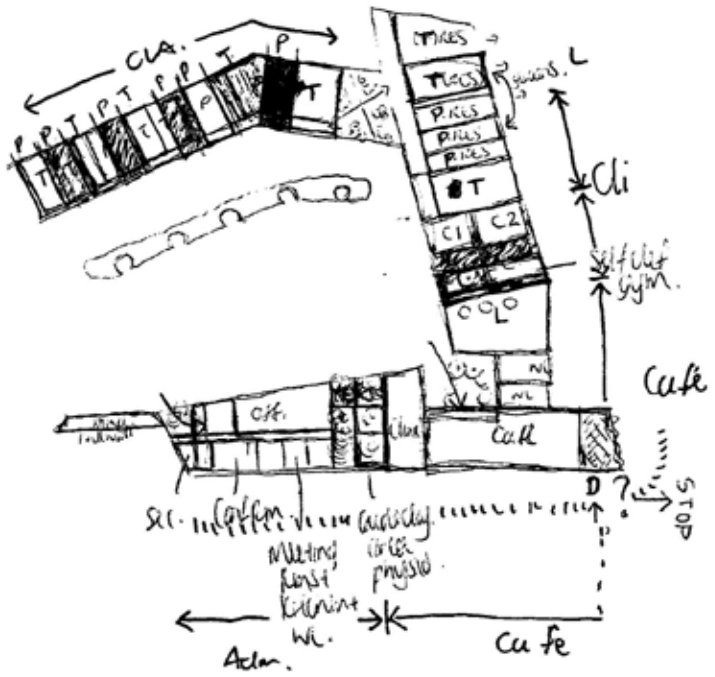




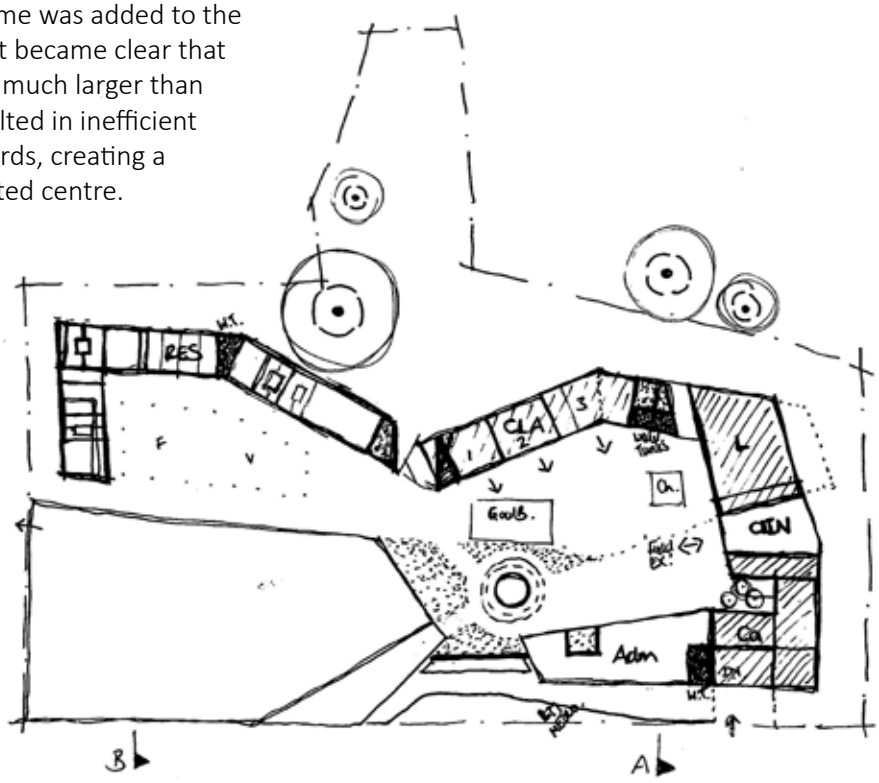
The massing of the forms were altered in an attempt to maintain the original circulation route however, the route was adjusted slightly. This was due to the need for a simple orthogonal circulation for the visually impaired.

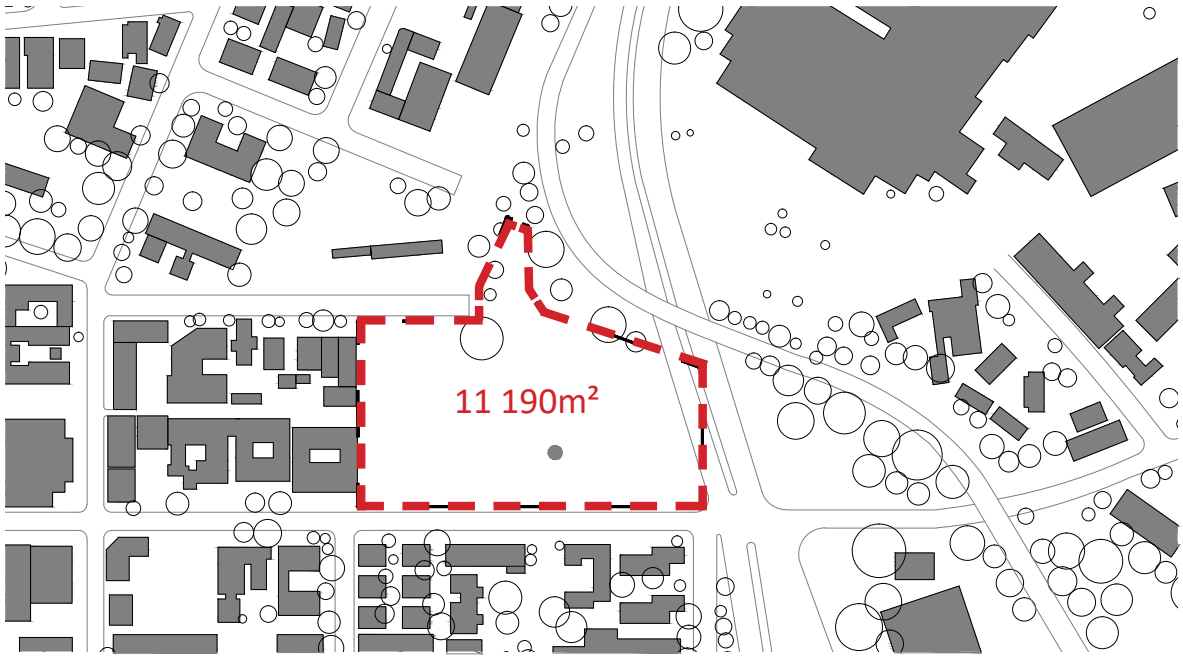




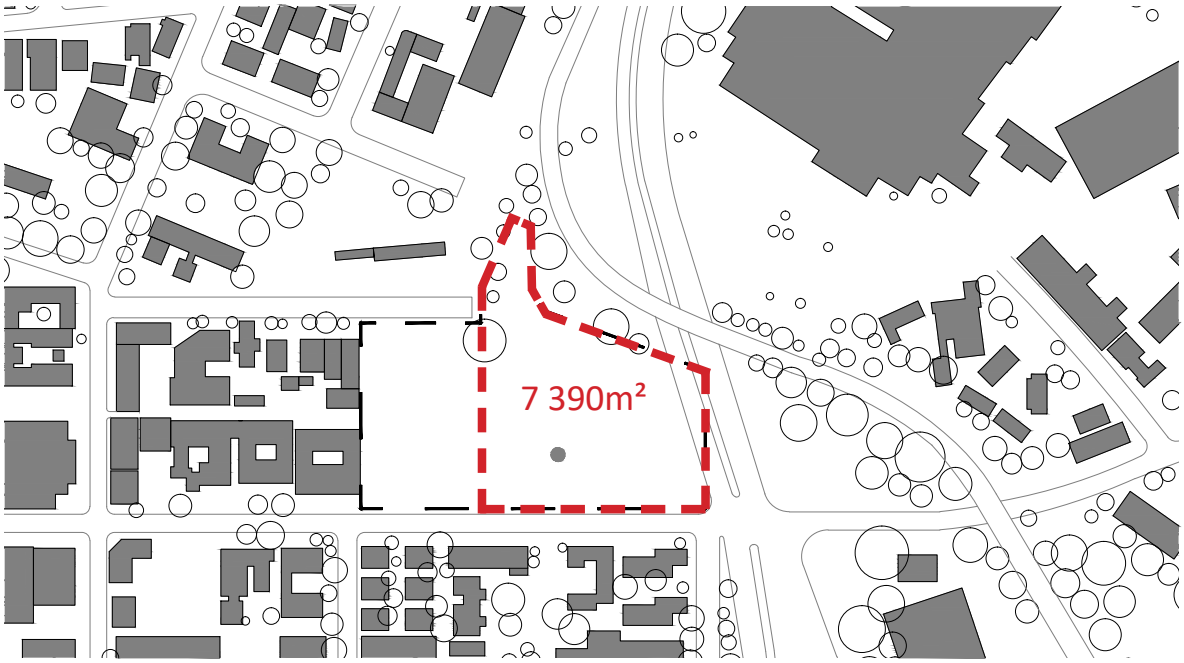


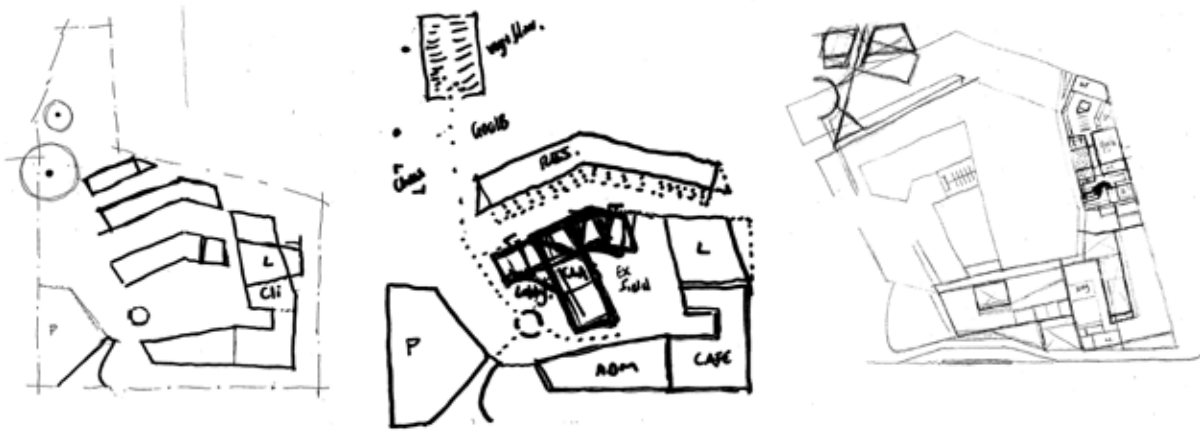
Once the programme was added to the massing diagram, it became clear that the entire site was much larger than anticipated. It resulted in inefficient large open courtyards, creating a seemingly segregated centre.

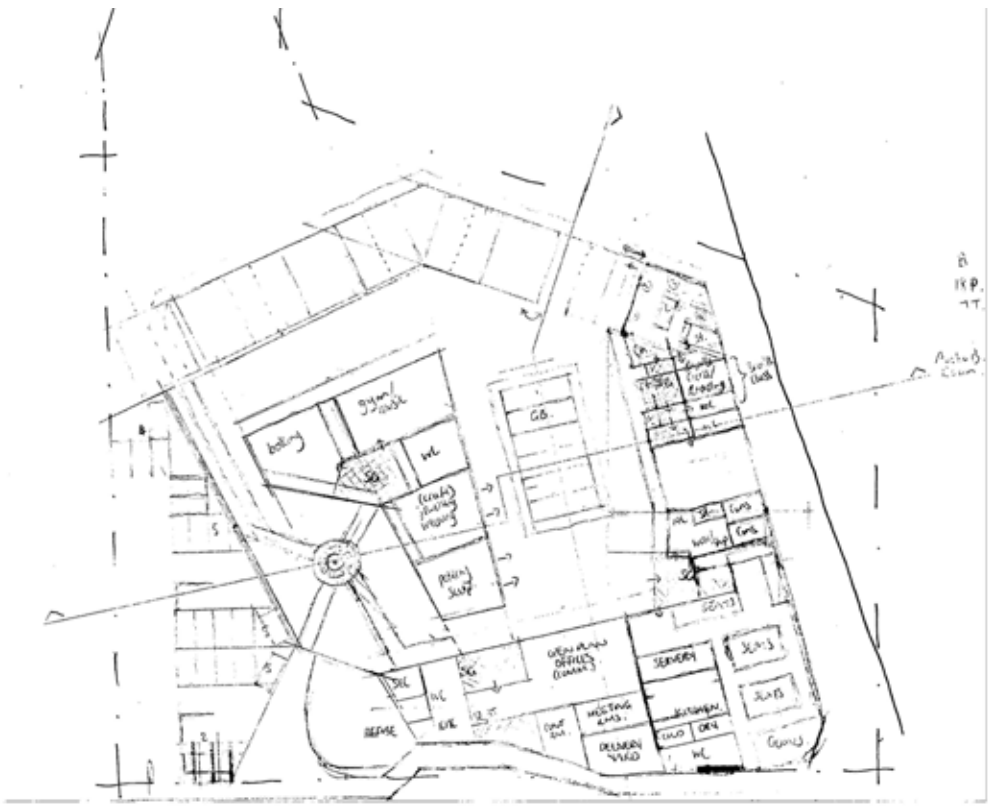




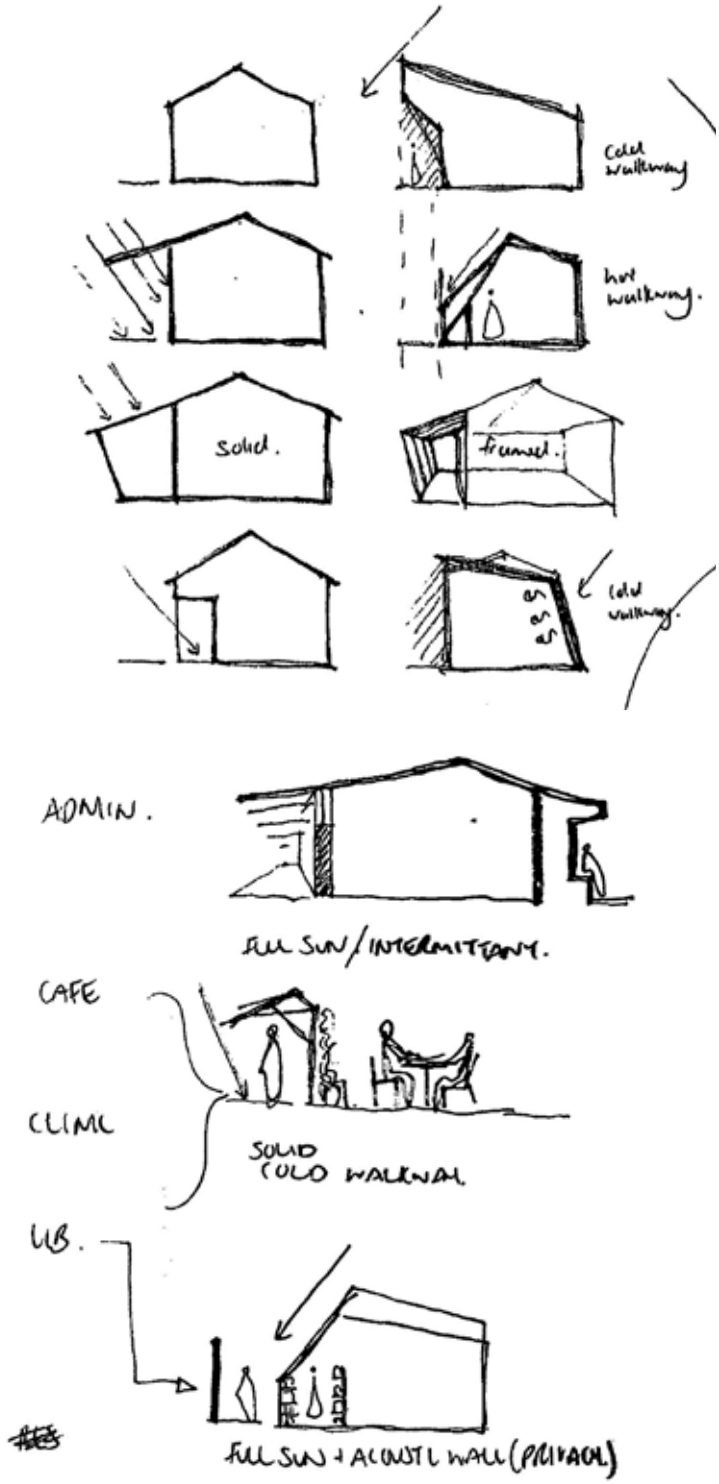
The discovery of the small proposed programme led to the option of the sub-division of the site as this would most likely occur in reality.



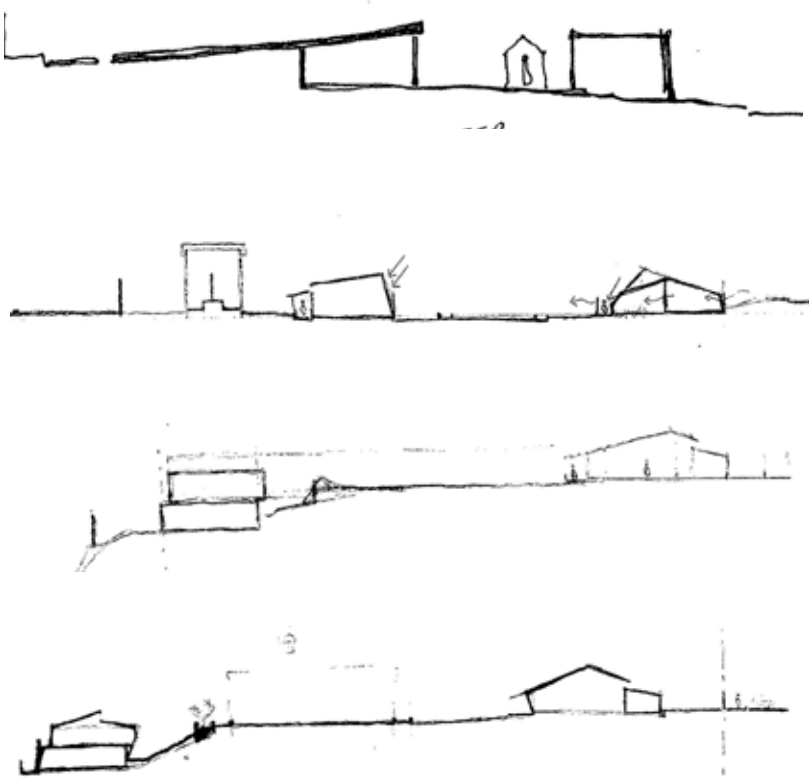


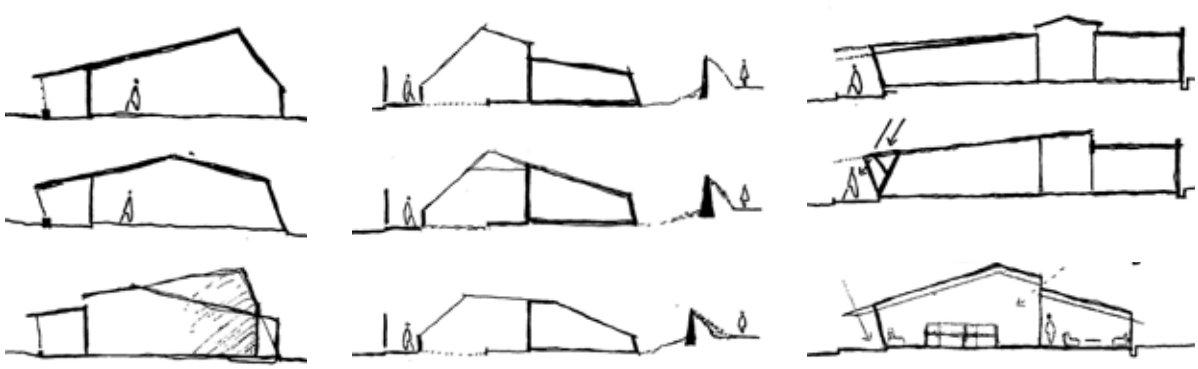


Various massing forms were tested on the sub-divided site option. The proposed programme was put in place while maintaining the focal point of the old filtration tower and the adjusted circulation path.

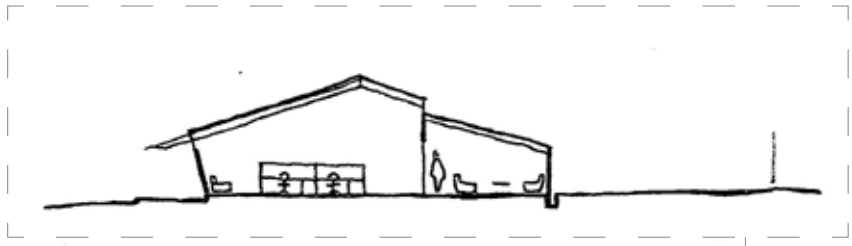


At an early conceptual stage, the thermoception of spaces was considered in the development of the sections. The sense of sound was also considered with regard to the interior volume of the various spaces.

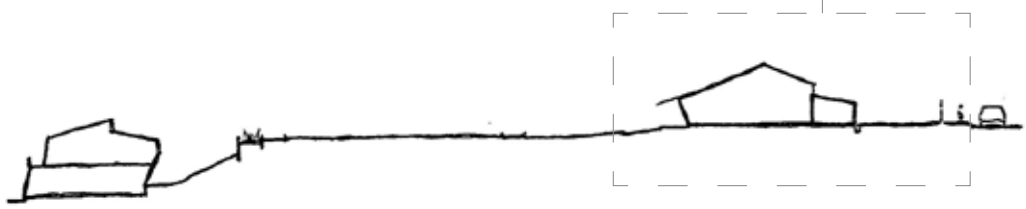




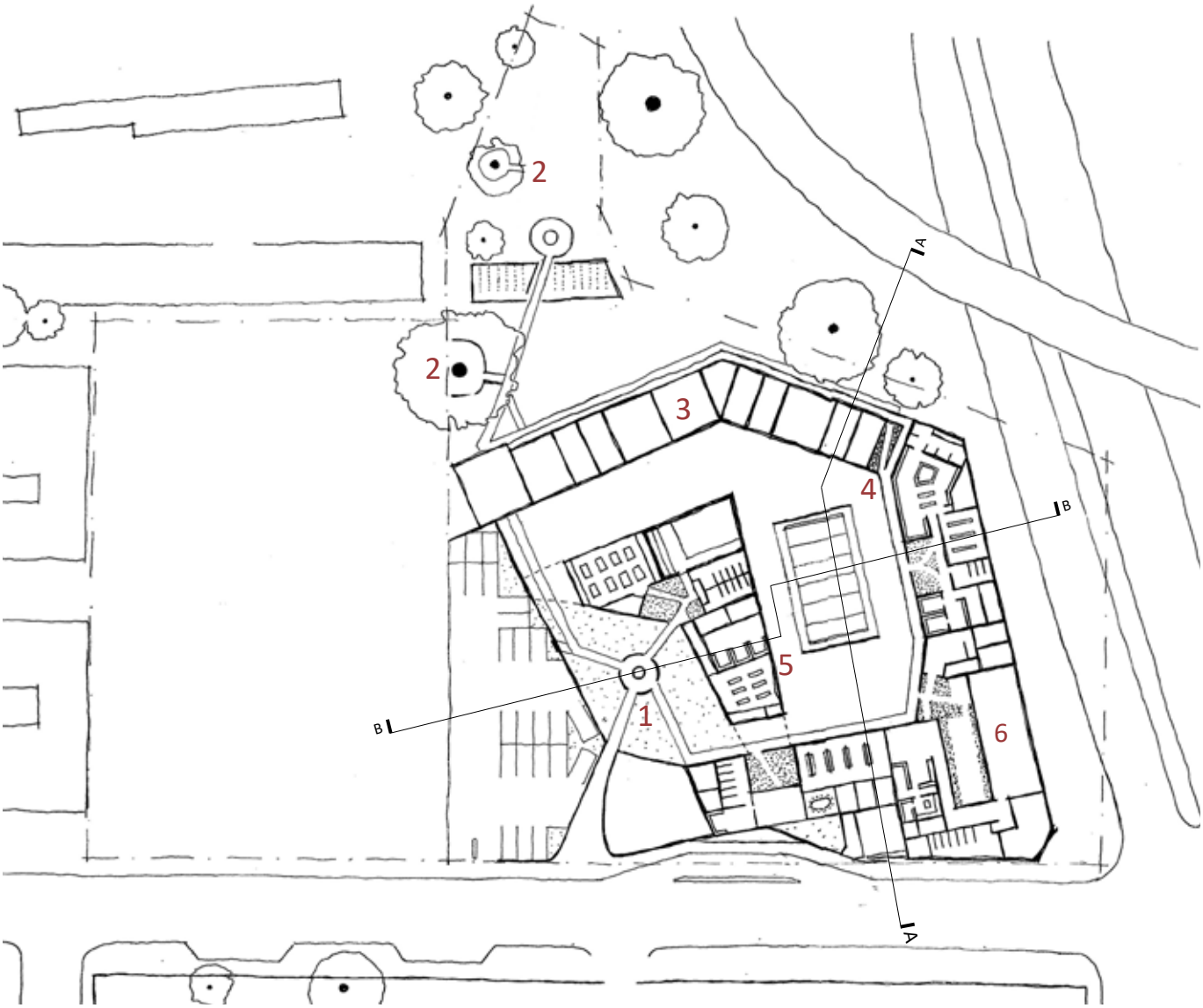
Each function of the centre was to receive a different architectural application as the orientation differed. The walkway of the common circulation was to be immersed in natural light while the entrances to the various functions would be dressed in contrast- complete shadow.



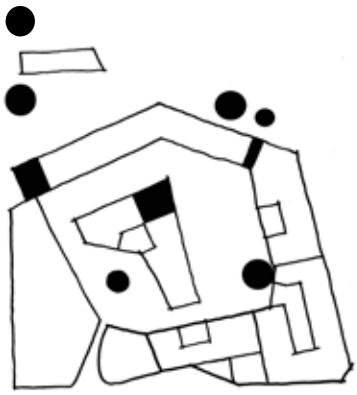
Admin Building



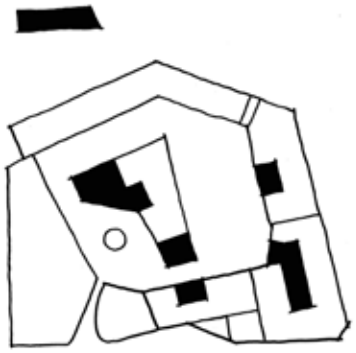




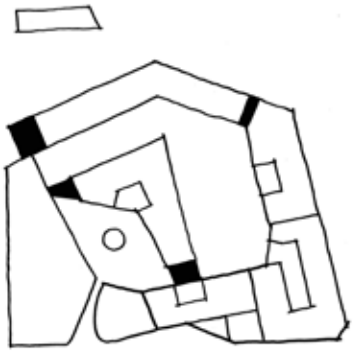
Conceptual Plan



Sound Landmarks

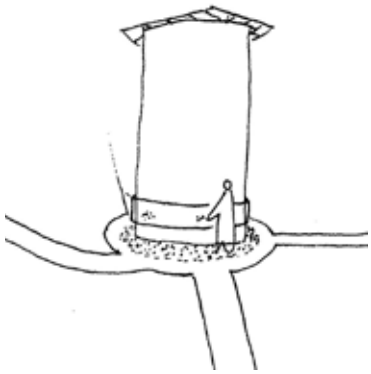


Scent Landmarks

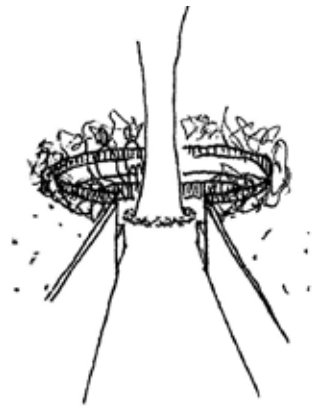


Touch Landmarks

Legend



1. Old Filtration Tower

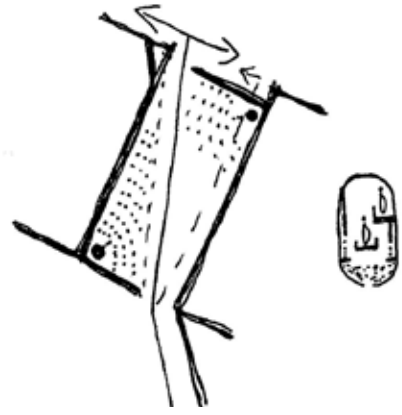


2. Hide-Away /
Contemplation Spaces

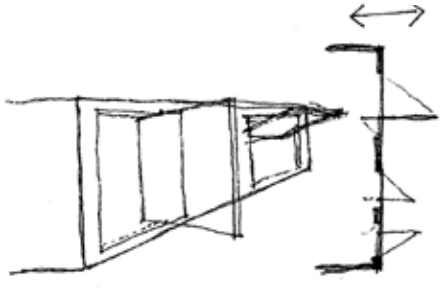


Permanent Residents Temporary Residents

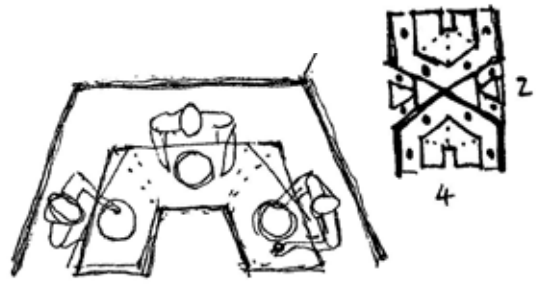
3. Residential Layout



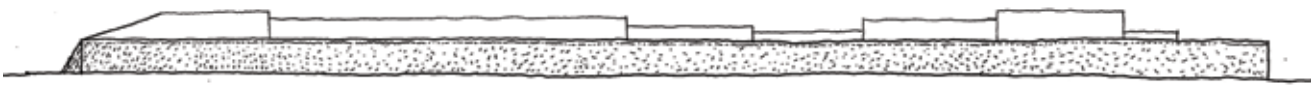
4. Sound Passage



5. Interactive facade
during events

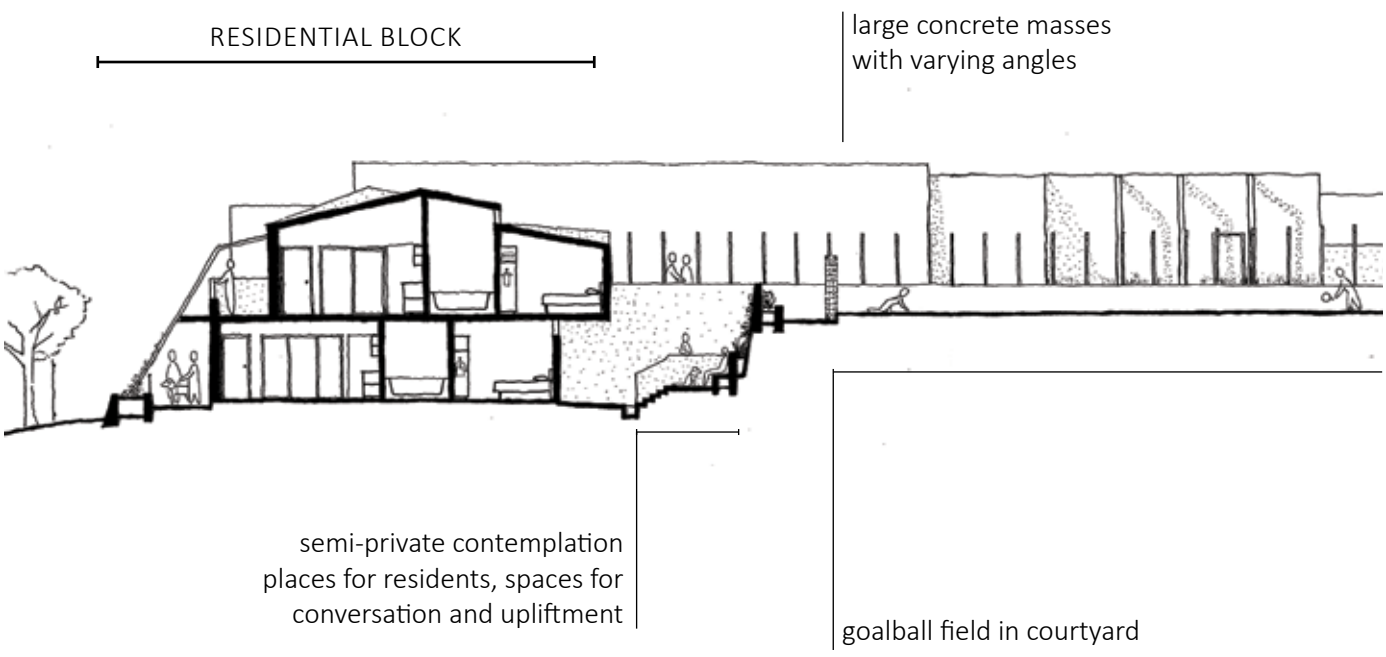


6. Cafe Seating Layout

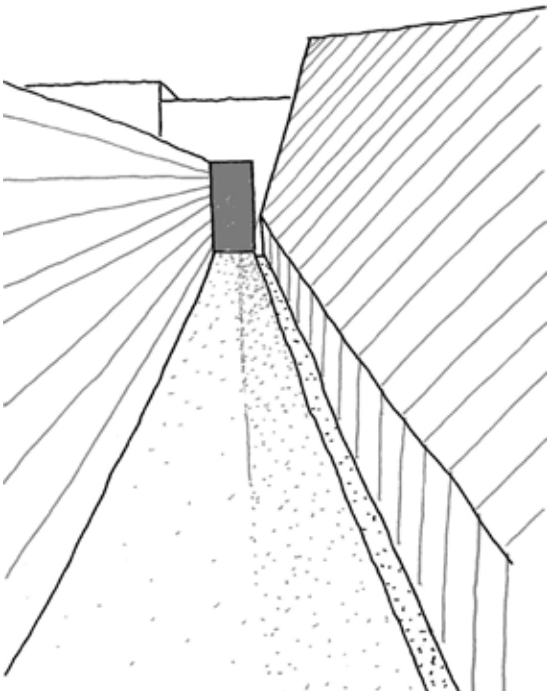


Barry Hertzog Street Elevation

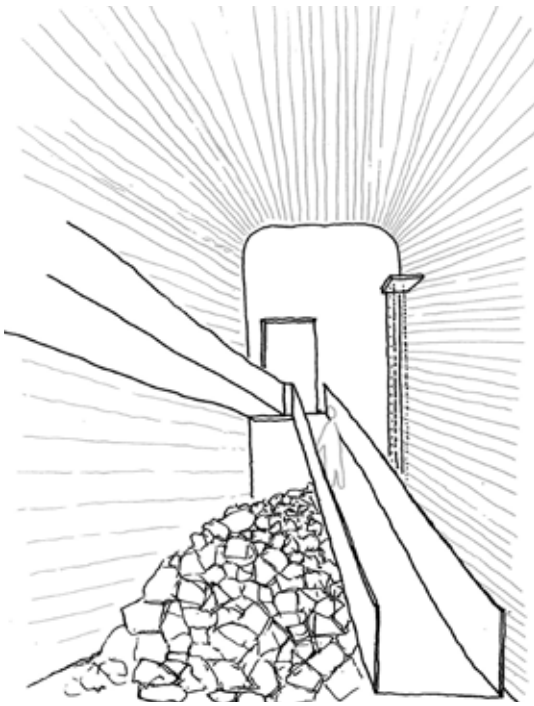
The street elevation is intended to serve the sighted people as well as provide privacy and security for the visually impaired within the centre. A berm wall was introduced as a boundary wall in order to provide a landscaped scenery to the public. Above the landscape, the roofs appear as large boulder-like masses tilted at varying angles.



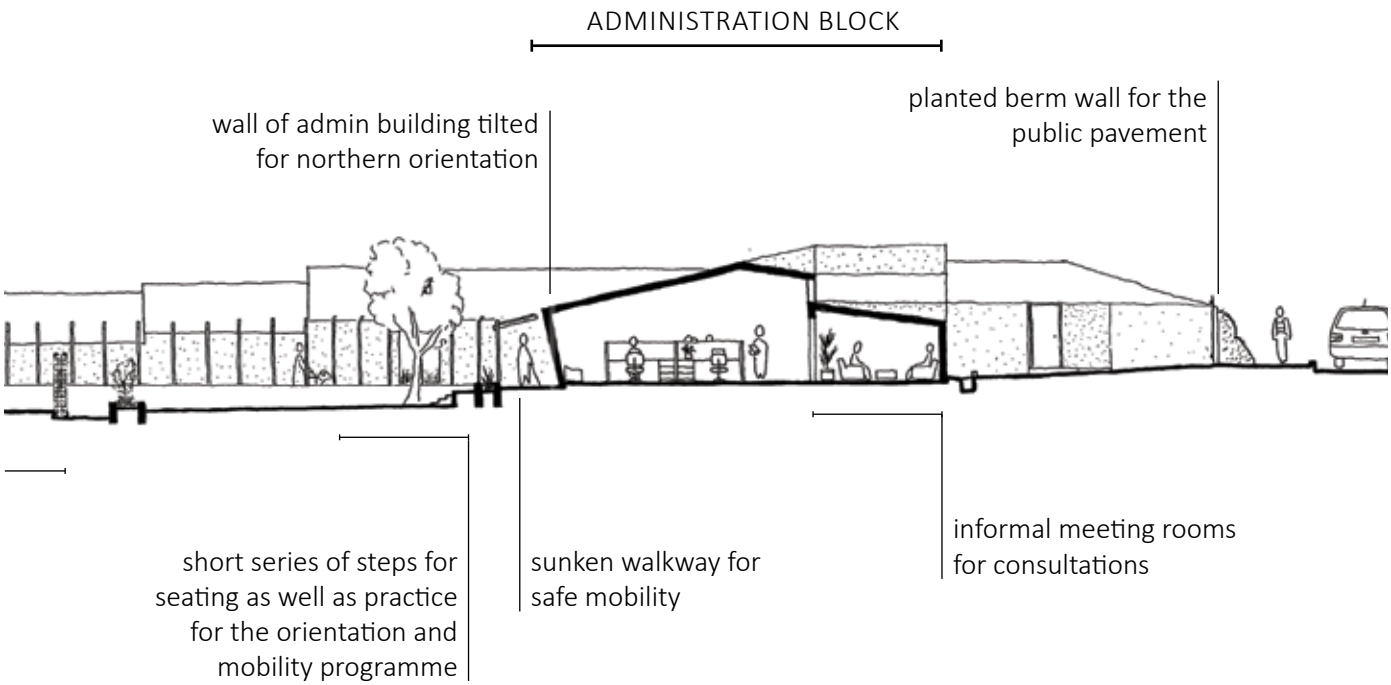
Section A

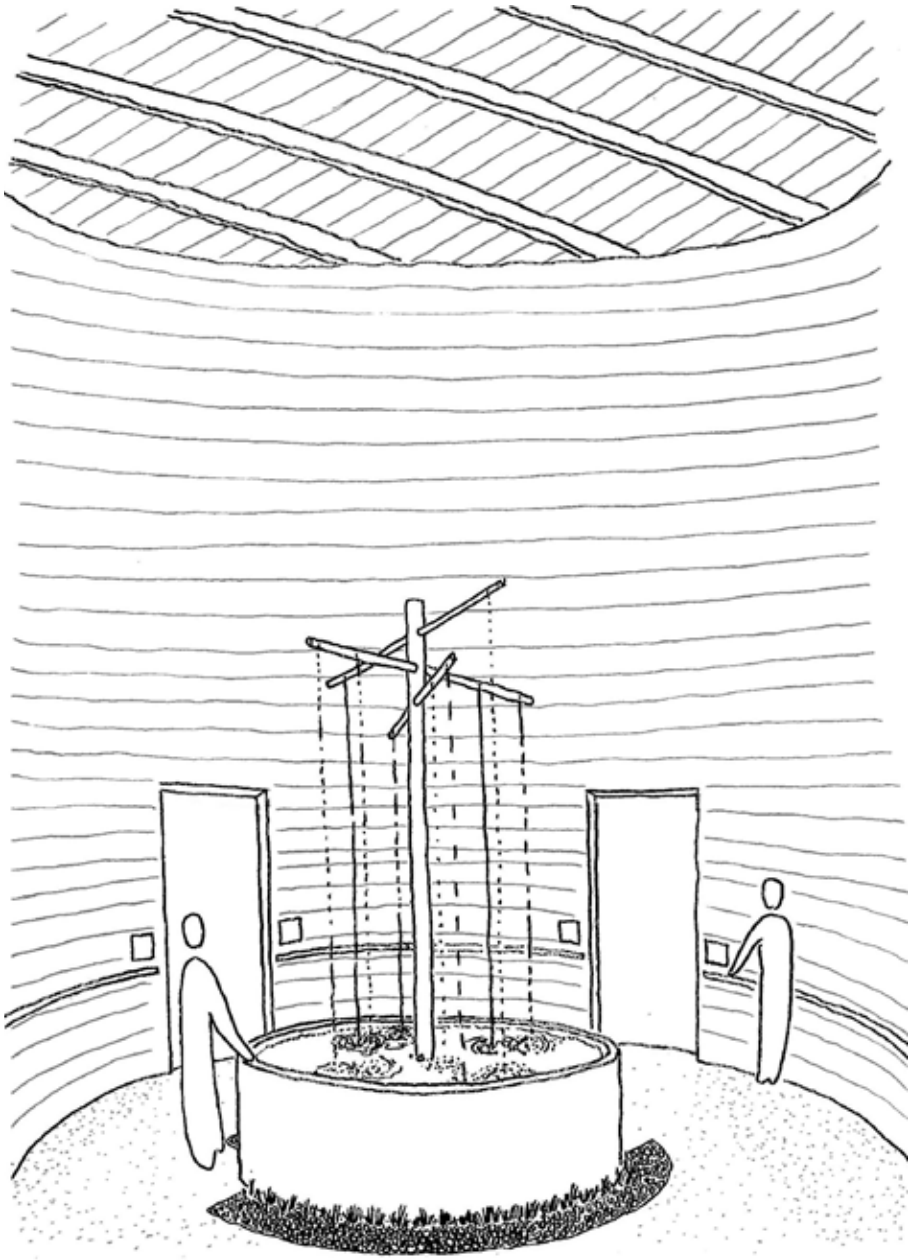


external walkway



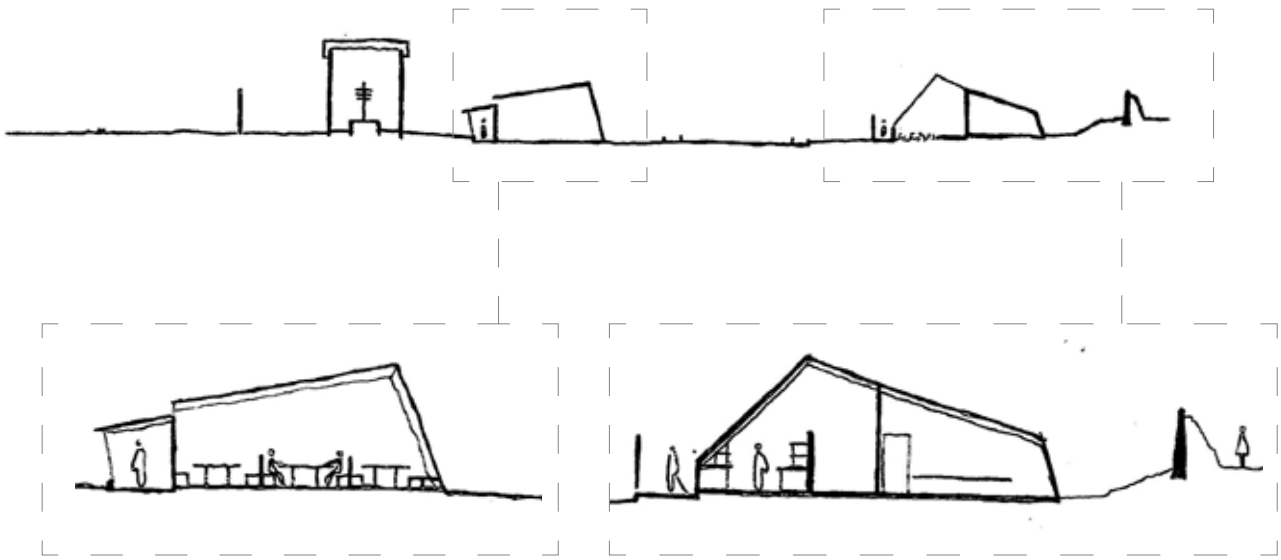
sound passage





Navigation Tower as a Sound Landmark

The old filtration tower is to be converted into a sound landmark that is reached upon arrival to the site. Inside the tower is a circular water fountain which creates a loud enough sound to attract visually impaired people to its location. Several openings in the tower will lead the occupants to the desired destinations as stated on either side of the openings thus making this landmark a navigation tower.



Classrooms

Library



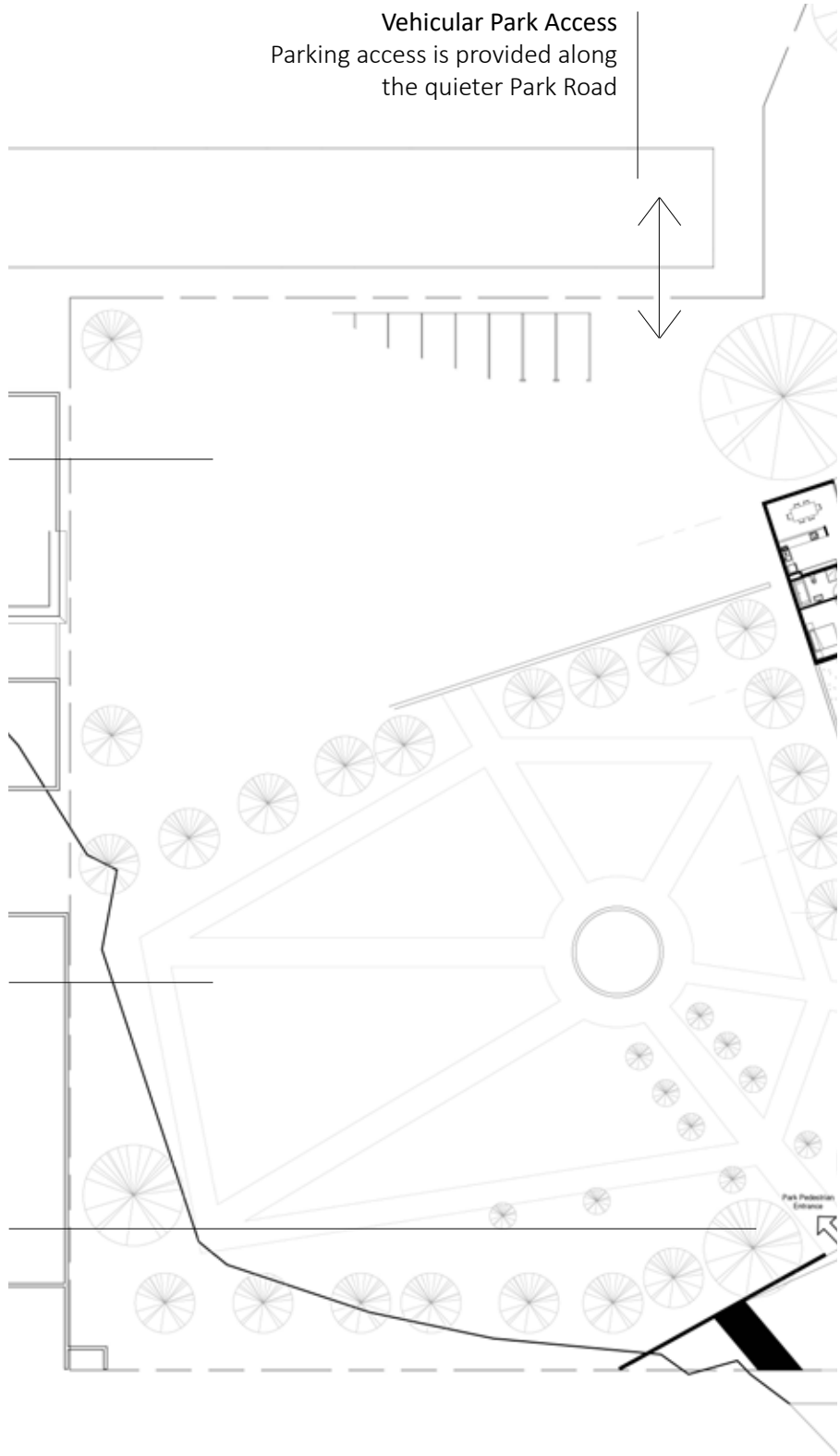


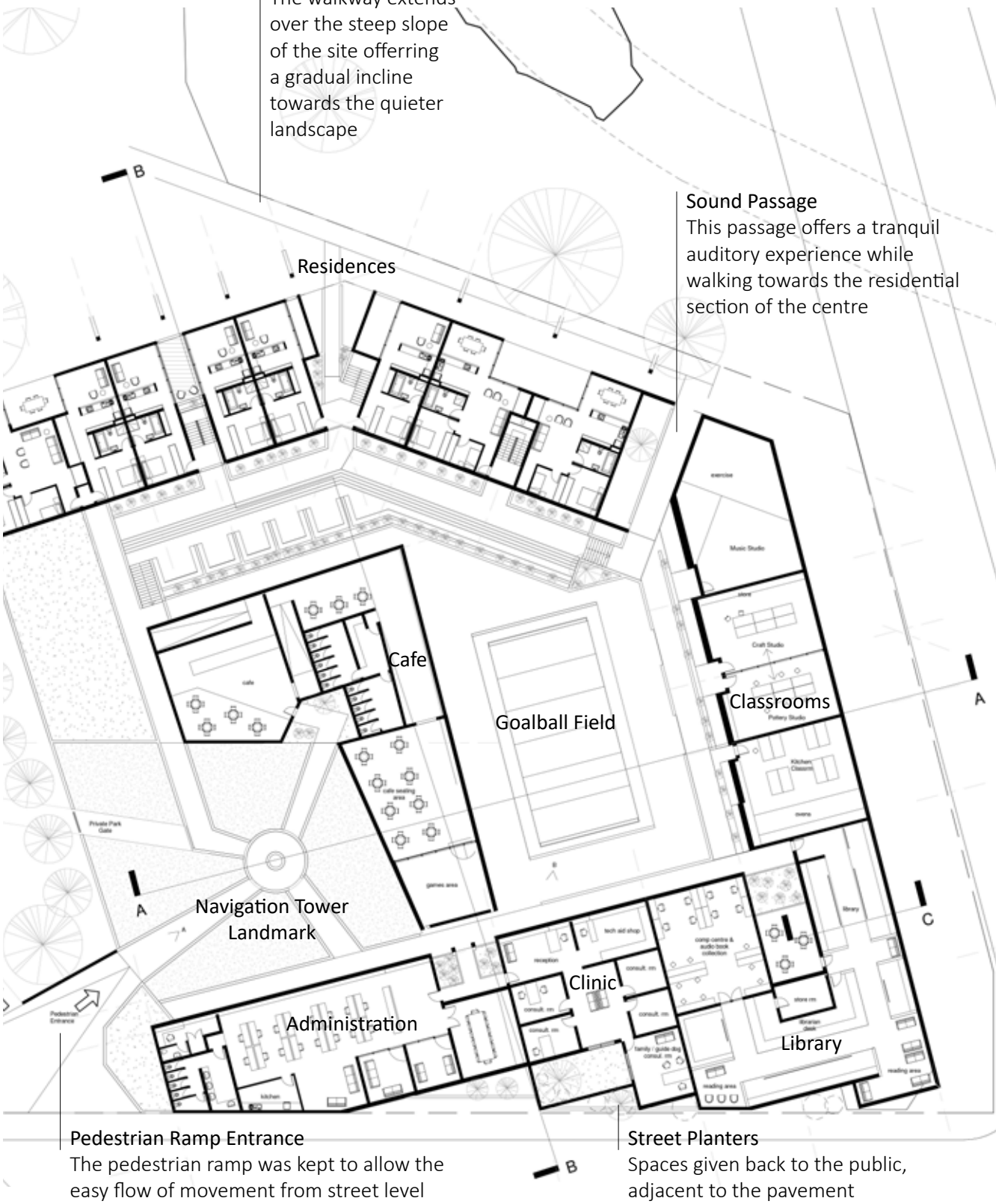
design development

The subdivided site proposal remained an issue as the entire site was not taken into consideration architecturally. Though the proposed programme may be small in comparison to the site, the remaining portion needs to be designed for. This remaining portion of the site will form the urban design of the proposal.

Green open space within urban environments are so rare and beneficial for the city Therefore wherever possible, green open space should be encouraged and maintained for the well-being of the users in the surrounding areas. The remaining portion of the site is to be transformed into a public park that caters for the employees in the commercial areas, the residents of the suburban areas as well as the visually impaired users in the centre.

Left Fig 3.8: Conceptual Massing Model


Vehicular Park Access
Parking access is provided along the quieter Park Road
Parking
Public parking for the centre's employees and park visitors
Visually Impaired-Friendly Park
Features sunken walkways for safe mobility, radiating walkways from a focal point, landmark focal point for easy navigation, and private access to the park
Pedestrian Park Access
Employees in the surrounding commercial areas will be able to access the park through the pedestrian gate along the ramp


Garden Walkway
The walkway extends over the steep slope of the site offerring a gradual incline towards the quieter landscape
Residences
Sound Passage
This passage offers a tranquil auditory experience while walking towards the residential section of the centre
Cafe
Goalball Field
Classrooms
Navigation Tower
Landmark
Clinic
Administration
Library
Pedestrian Ramp Entrance
The pedestrian ramp was kept to allow the easy flow of movement from street level to the centre's navigation tower
Street Planters
Spaces given back to the public, adjacent to the pavement
A
B
C

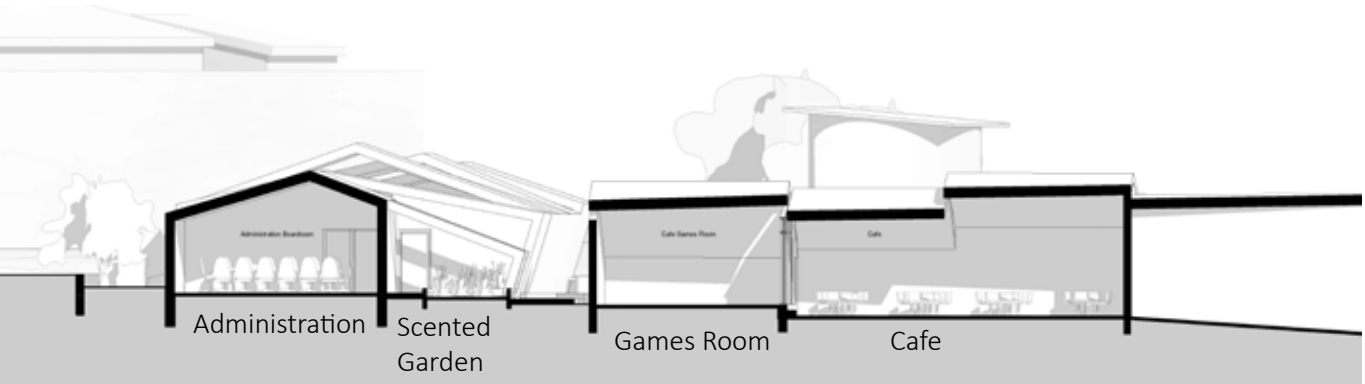
roof extends to cover part of the courtyard so as to avoid a cold unappealing space

wind flowing through perforated concrete skin of the circulation acts as a means of orientation to locate one's residential unit

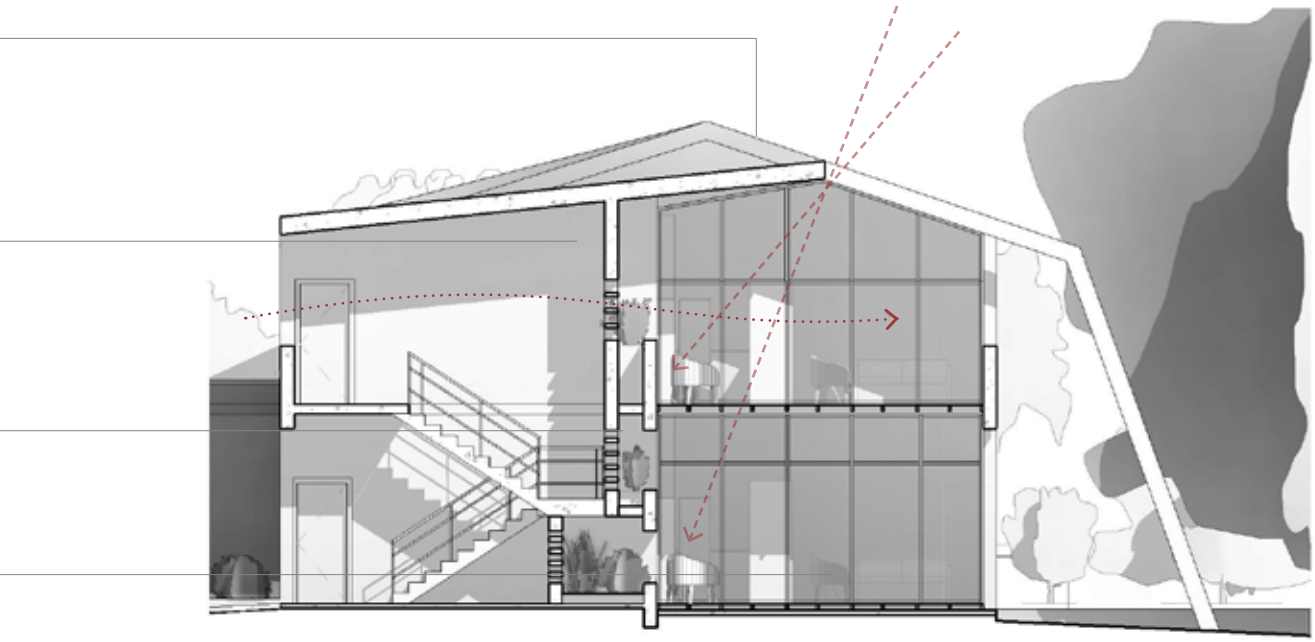
planters placed on various levels to act as sound privacy barriers for the private courtyards as well as to improve the quality of the surrounds

private courtyards are shared intimate spaces between 2 units. They serve to provide a private safe private space for people to support one another during difficult times in the recovery process

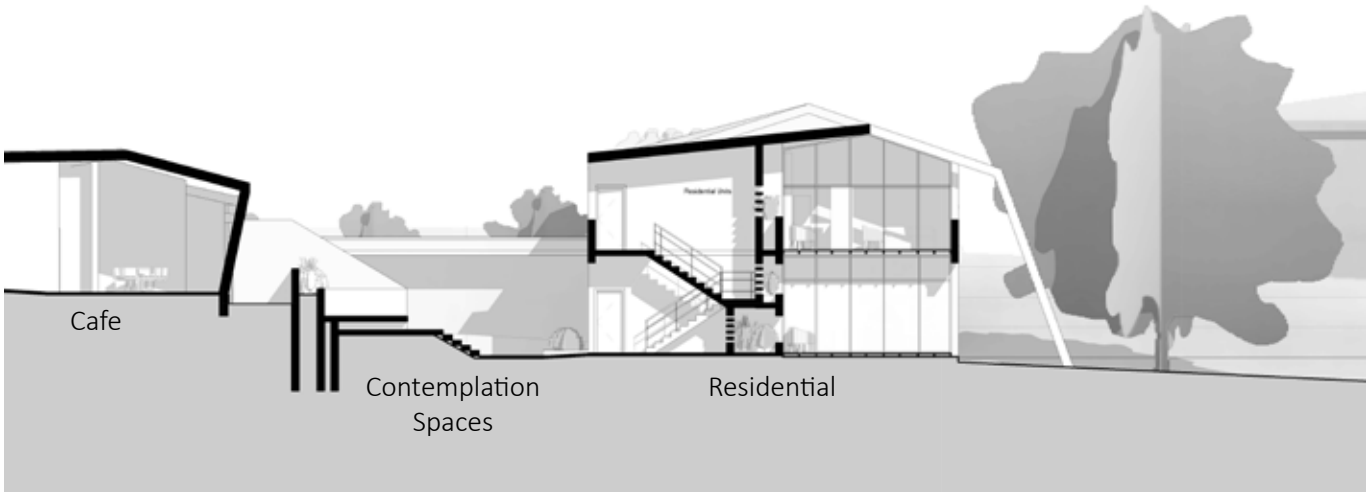
courtyards are finished with suspended timber decking to enable one to know when the courtyard is in use

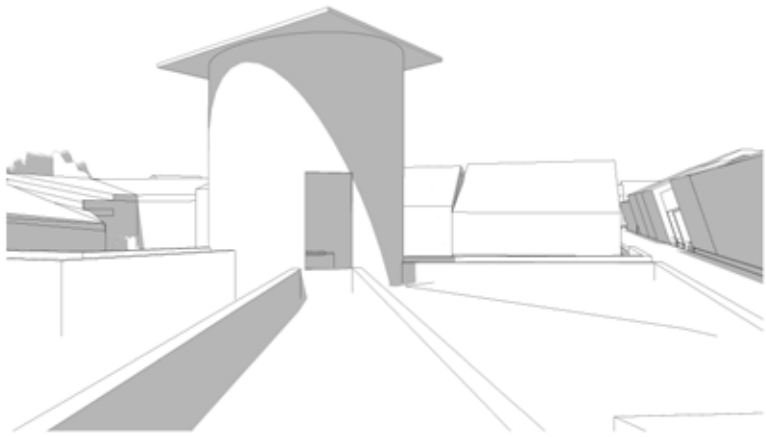


North-South Section

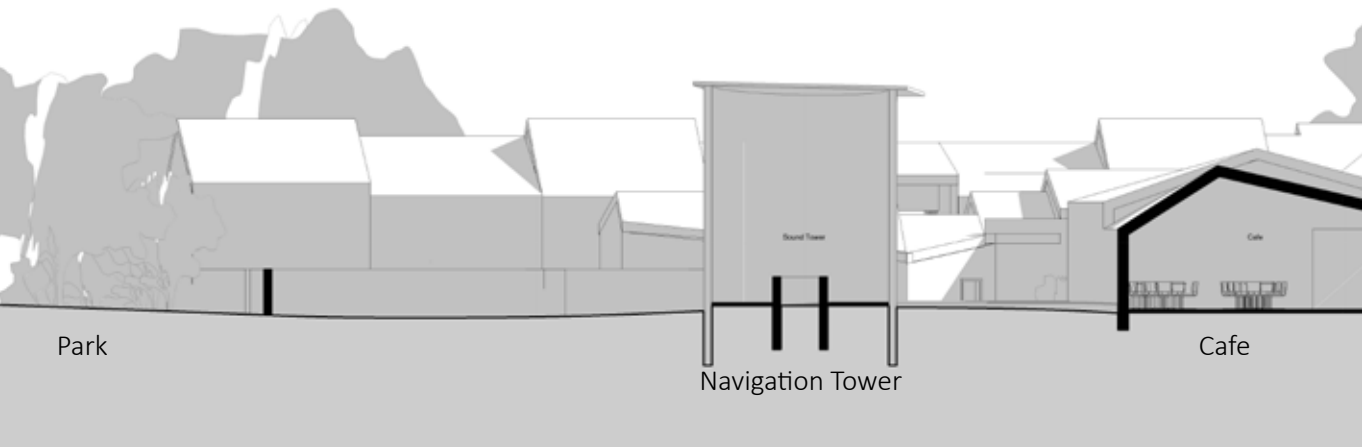


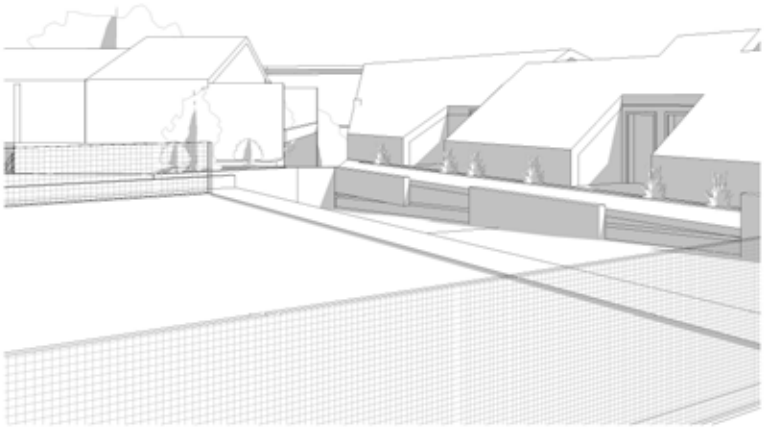
Residential Circulation Section



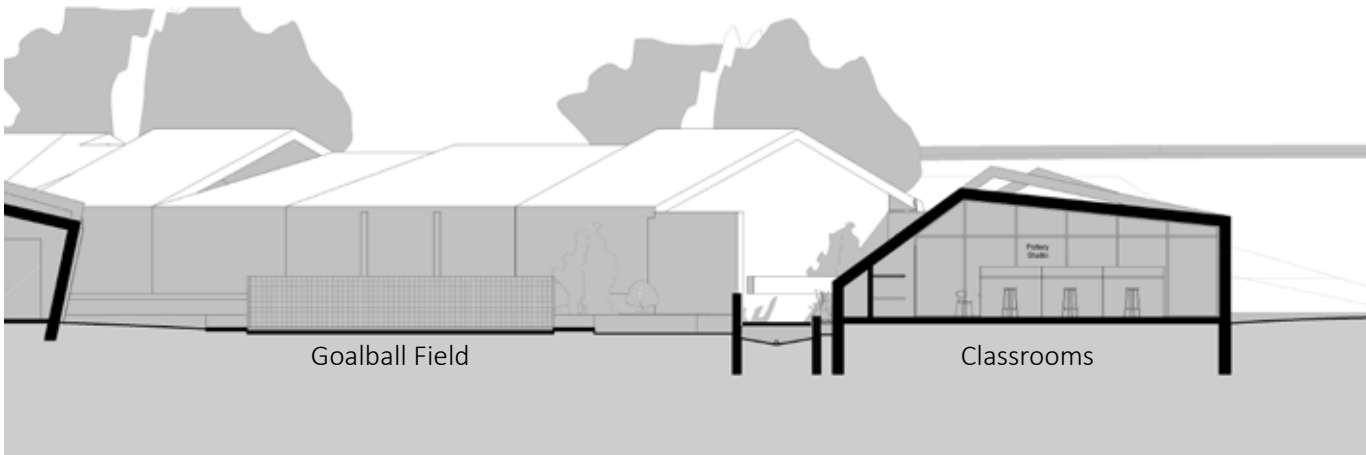


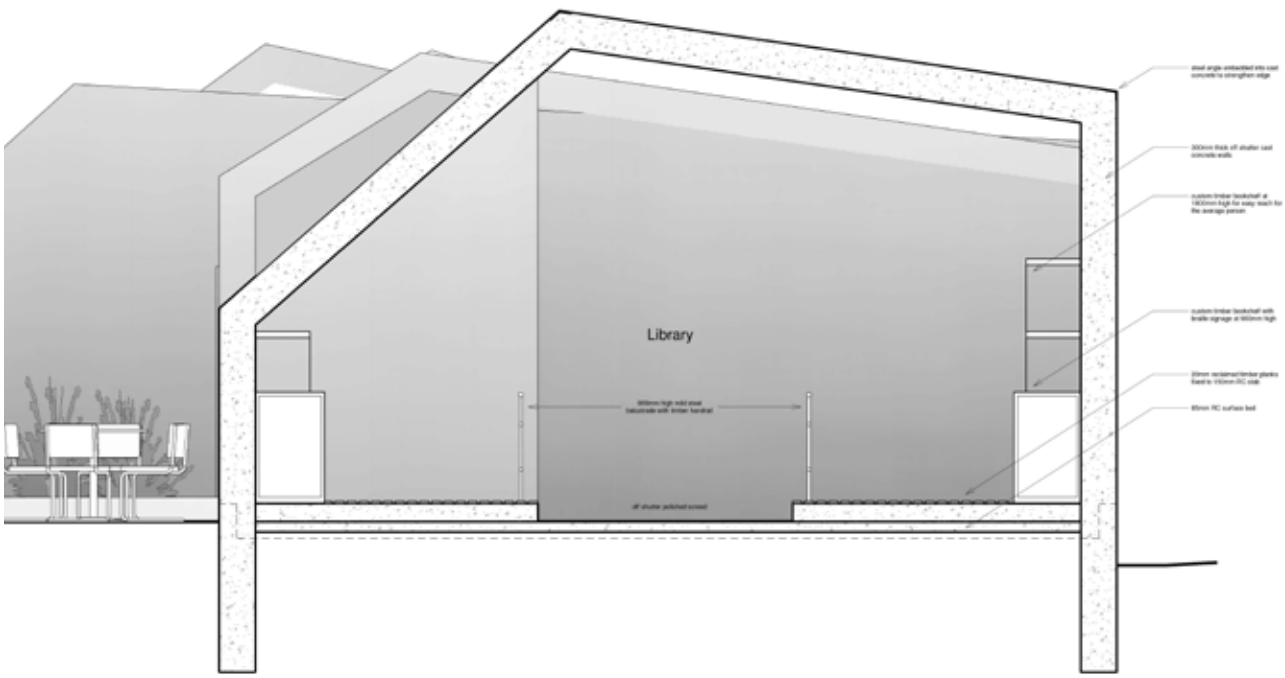
Entrance to the navigation tower along a sunken pathway with short walls on either side to guide the visually impaired into the tower. Landscaping is placed on either side of the walkway.





View over the Goalball court towards the classrooms which have distinctly marked entrances from the shadow that naturally occurs due to the massing. This enables the partially impaired to recognize the contrasting difference between entrances and walls.




Library

The conceptual development of the proposal thus far raises concerns with regard to materiality. The use of cast concrete is seen as inefficient for just a single storey low rise building. While this statement remains true, it is still important to note that the cast concrete is the most malleable construction material that one is able to control the result of the texture.

In conclusion, cast concrete will remain the focus of the building proposal where it is necessary. In addition, a new material(s) must be introduced to work in collaboration with the cast concrete.

The new design intention in terms of materiality is as follows: cast concrete is still to be the focal point in terms of materiality. The secondary material(s) therefore has to recede back visually and not attract attention.

The cast concrete is to be placed along all necessary locations which is at hand height across the entire centre in order to assist the users. The remaining portion of the building is to be filled with the secondary material(s).

The following materials are to be considered:

Slate
This material appears too decorative therefore attracting more attention.





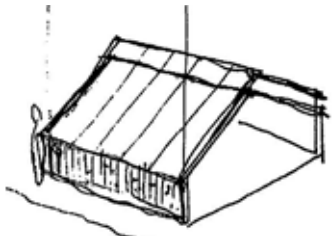
Shingles
It may be too decorative similarly to shingles. A thinner option with less shadow line will be considered so as to decrease the amount of visual noise.





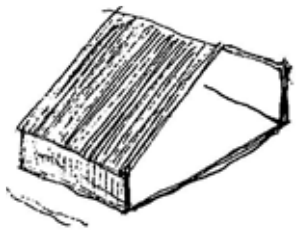
Copper
A costly material therefore inefficient.





Metal sheeting
A variety of profiles is available. The typical s-profile creates too much attention, another profile should be considered.





Green roof
This may stand out more than the concrete. It also implies frequent maintenance which could impose difficulties for the users of the recovery centre.



Top to bottom images Fig 3.9- 3.13





Alternative: Asphalt shingle
This is a fairly inexpensive roofing material consisting of cardboard with an asphalt waterproof layer.
It has a large life span and is a cheaper alternative to the common roofing materials. However, it can decay with adverse weather changes therefore maintenance is required. It is not an environmentally friendly product.
Roofing angle required: >180°

Alternative: Zinc sheeting
This provides the least amount of visual noise however, the standing seam does attract some attention. There is no maintenance required on this material and it is environmentally friendly.





Clockwise from top left Fig 3.14- 3.17

2012

Graux & Baeyens Architecten

Commercial Office Building

Offices
Residences
Parking lot



Material Focus: Concrete & Zinc Sheeting
The architects made use of materiality in order to differentiate between the offices and the residential block.

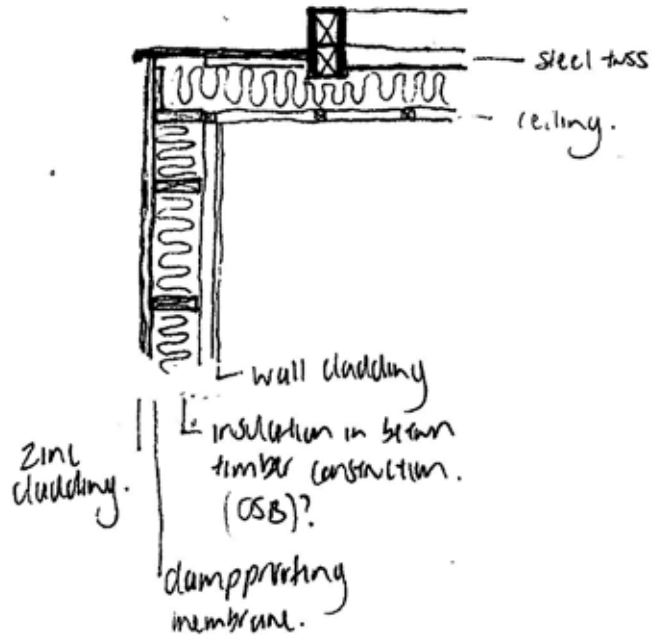
The office blocks consist of concrete panels and a vertical rhythm of timber panels. In contrast to the offices, the residential block is clad in dark grey zinc sheeting which also relates to the vertical rhythm of the timber panels of the offices.

The timber panels are used to provide a sense of privacy while still allowing maximum daylighting to flow into the office interior.



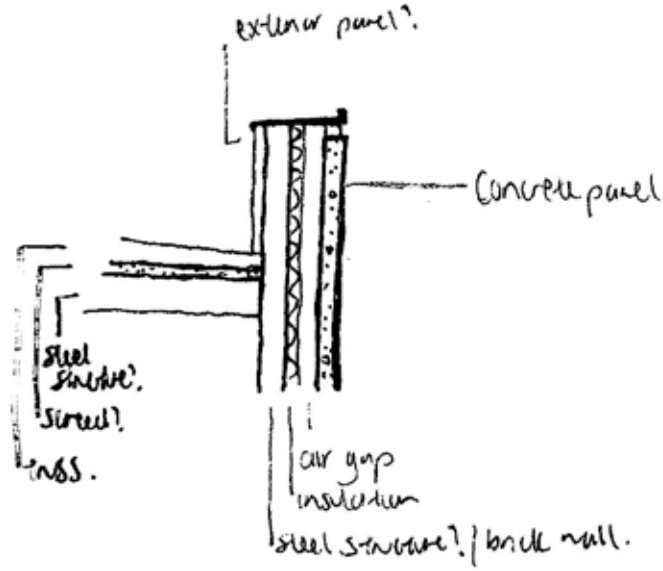
All photographic images Fig 3.18- Fig 3.21





Top of Zinc Sheeting Section
NTS





Top of Concrete Panel Section
NTS

All sketches above Fig 3.22, 3.23

2014

Tadao Ando Architect & Associates

Art Foundation House & Community Art Centre

Artist Residences
Shared Study Rooms
Exhibition Space
Sculpture Garden
Recreational Areas

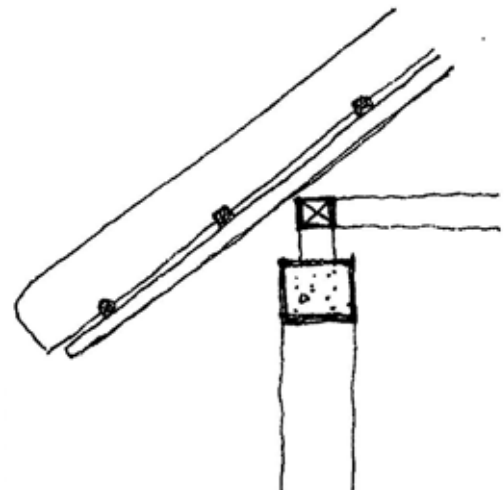


Material Focus: Concrete & Thatch (timber construction)
The bare concrete texture is contrasted against the warmth of the traditional 'Palapa' roof consisting of palm tree leaves. The interior views portray a tranquil dialogue between the strong geometric concrete and the intricately hand-crafted ceiling above eye-level.



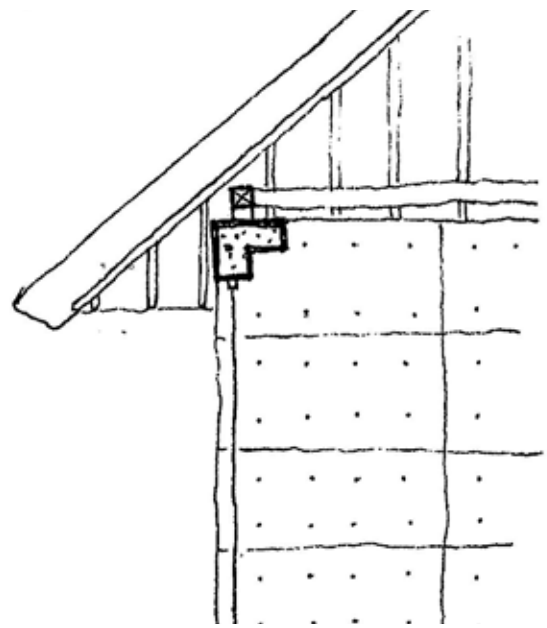






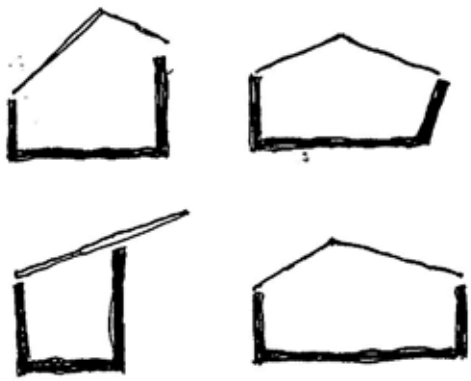
Material Junction
NTS





Material Junction
NTS

All photographic images Fig 3.24-3.28
All sketches above Fig 3.29- 3.30

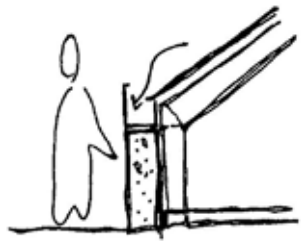


Zinc sheeting proves to be the most well-suited material secondary to the concrete for the centre. The graphite-grey colour will automatically recede and divert the attention to the textured concrete. It is a environmentally-friendly product with a long lifespan as well as maintenance free. These are especially advantageous for the centre.

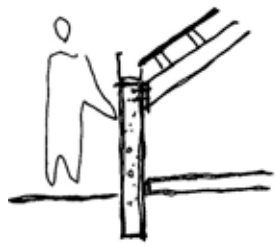
As a result, one needs to consider the junction of the 2 elements as previously shown in the material precedent, Office Solvas. For the centre, however, it is not about seperating the functions by means of visual distinction. The design intention is to allow the textured concrete to dominate the facade and the zinc sheeting to act as a backdrop. The conceptual design process of the junction between these 2 elements were as follows:



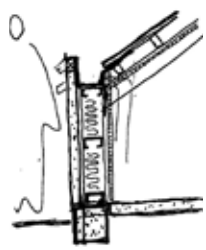
Concrete Wall + Steel Column Supports
Stormwater issue flowing onto walkway



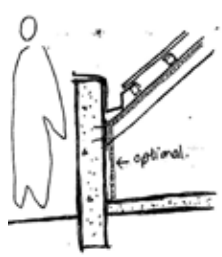
Concrete Wall + Steel Column Supports
Stormwater gutter introduced to contain water
Envelope becomes rather thick



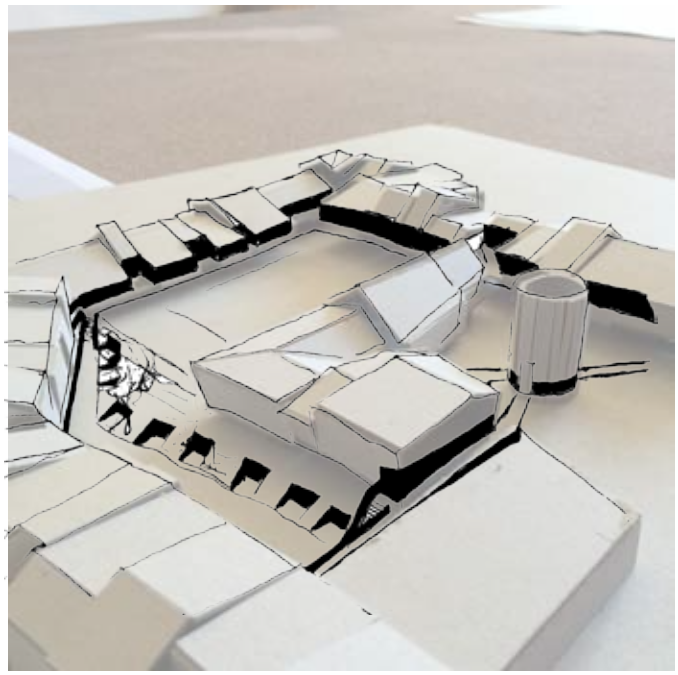
Concrete Wall + Steel Frame Supports
Steel roof structure anchored to concrete wall
Facade still 'framed and topped' with a large steel gutter therefore attracting attention away from concrete wall

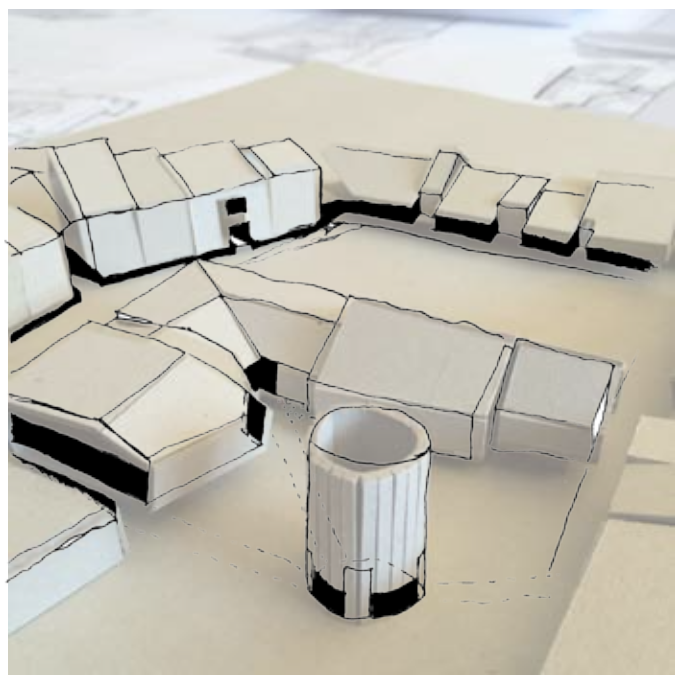


Option 1: Concrete Panel + Steel Structure
Thin envelope achieved
Concrete dominant facade as steel element is minimized and hidden as a thin edge trim
Precast concrete panel will allow for textures to be cast with maximum accuracy. Re-casts of panels are possible should damage occur

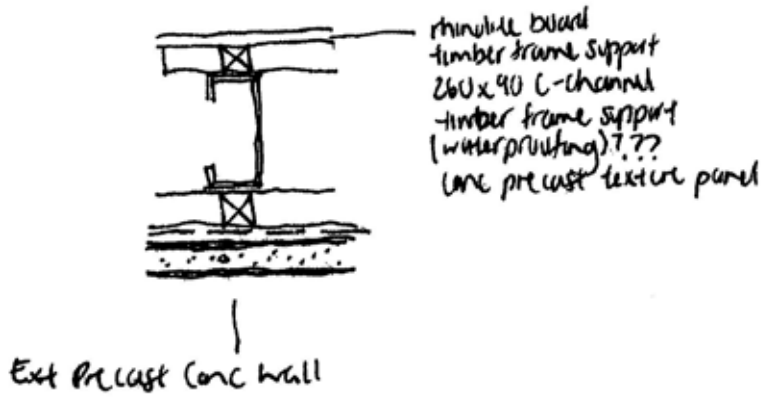


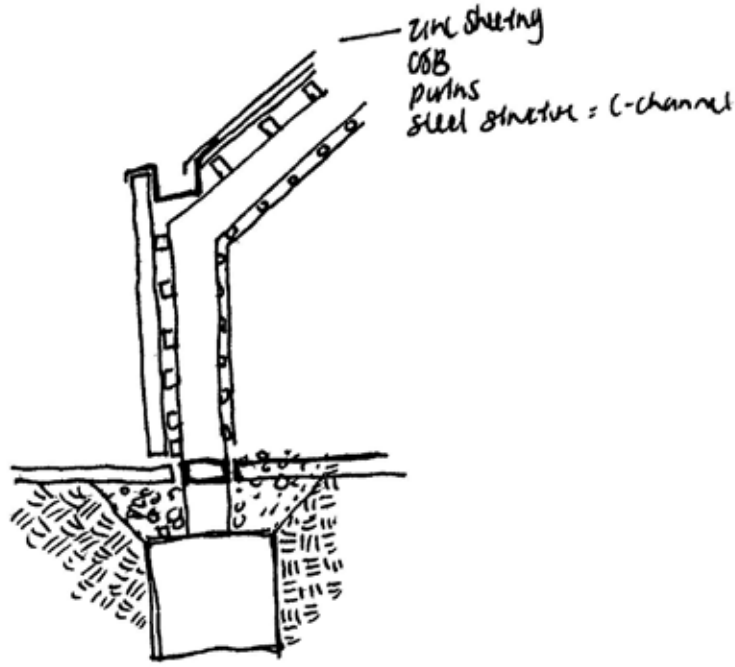
Option 2: Concrete Wall + Steel Beam Anchored to Wall
Steel roof structure could cause cracks and damage to the concrete wall in the long term
Thin envelope achieved however, insulation may thicken it
Concrete dominant facade- thin steel edging
Steel gutter is further away from sight





Sketches over massing model depicting
necessary areas of concrete wall





Typical material junction detail
Option 1: Concrete Panel + Steel Structure

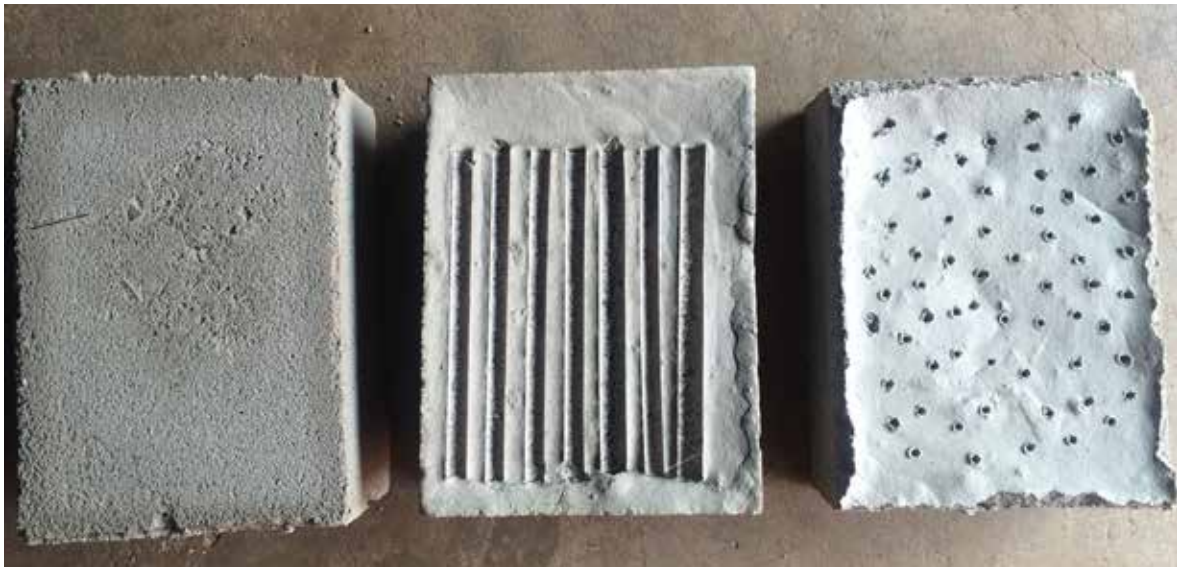
design development | precast concrete panels

Precast concrete panels are the most effective material to use for the centre as they are easy to manufacture with the desired texture. Panels can be easily replaced if damage does occur and many casts can be performed before achieving the correct texture to suit the centre.

A simple concrete experimentation of various textures was conducted. These textures could possibly be implemented into the concrete panels as a tactile guide within the centre.







Smooth Thin Ribbed Prickly

Above Fig 3.31 Photo Documentary of Concrete Cast 1

The prickly cast was not initially intended. Its original texture was meant to be off-shutter timber texture. However complications occurred and the timber cast did not set properly before removing the mould. As a result a prickly texture was applied to the opposite side so as to not waste the cast.

The second cast involved more natural textures such as the use of grass and stone. The wide ribbed texture was an improvement on the thin ribbed texture as the thin ribs had sharp edges. The wide ribs feel more comfortable as the width allows for fingers to be placed within.

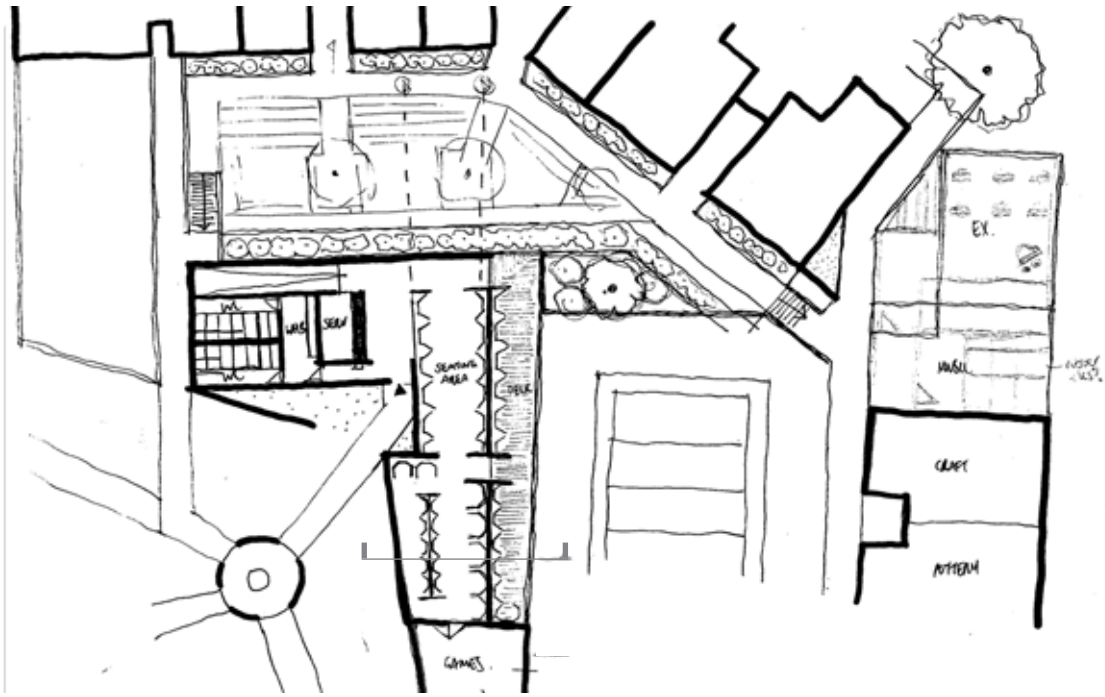


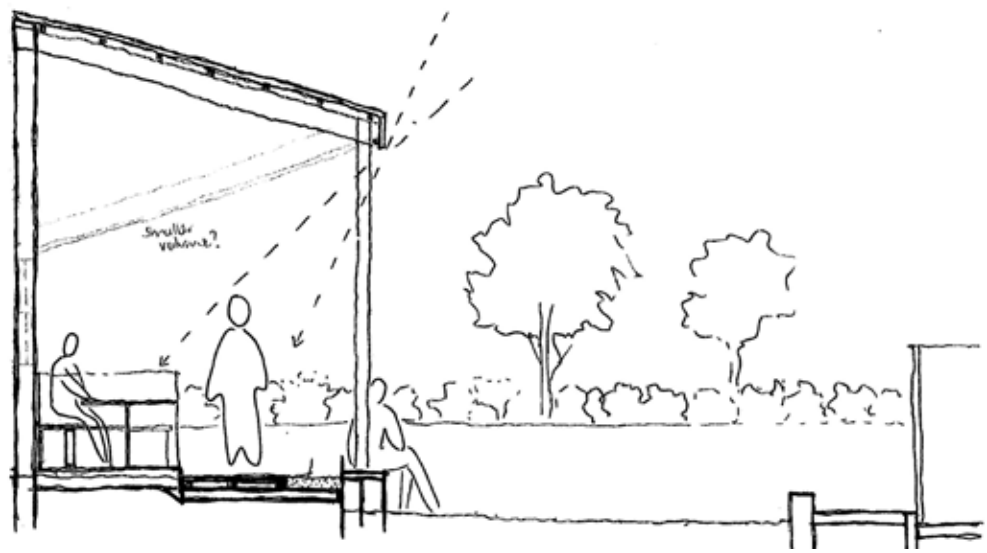




Wide Ribbed Grass Stone

Above Fig 3.32 Photo Documentary of Concrete Cast 2





interior seating area

exterior seating area

suspended timber walkway

gravel as warning texture

concrete wall as seating

soft ground

Goalball field

The sketch above indicates a rather simple construction method of a timber platform with a covered roof above therefore, it was adapted to relate more to the angular form of the rest if the centre.

The behavior of sound was researched into determining the envelope of the wall that seperates the interior and exterior of the cafe. The sounds of the goalball activity should be subtly introduced into the cafe.

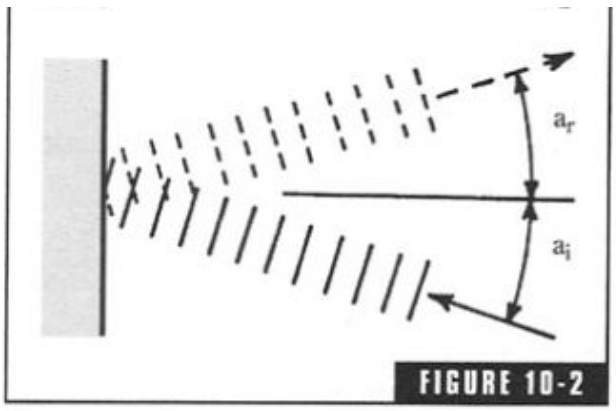


FIGURE 10-2

The angle of incidence, a_i, is equal to the angle of reflection, a_r.

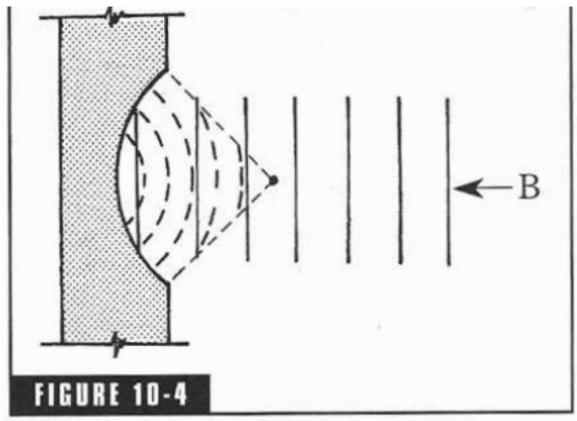
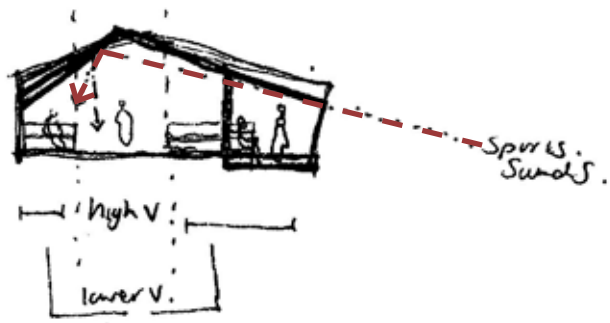
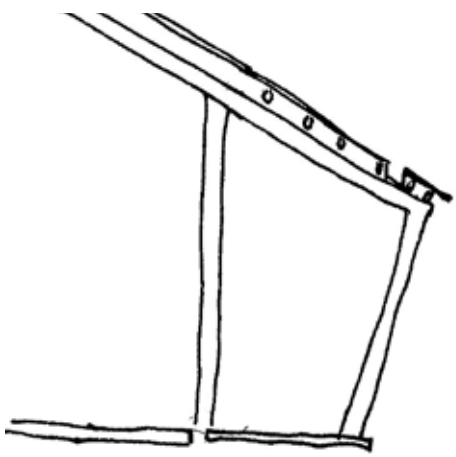
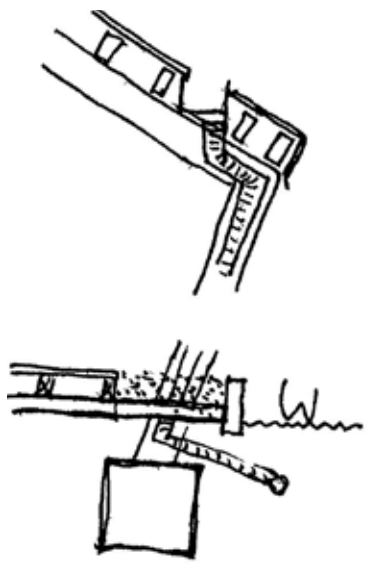


FIGURE 10-4

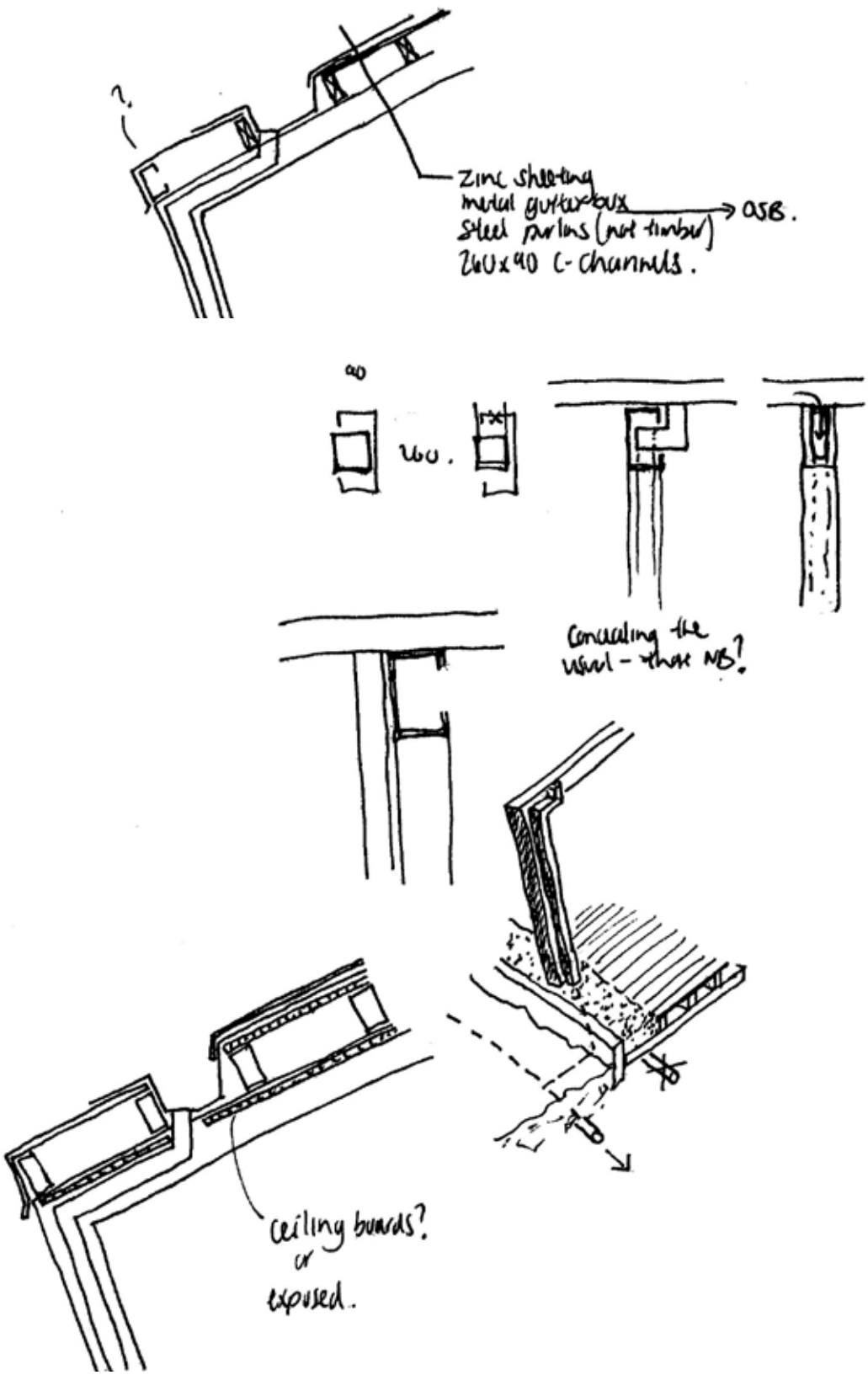
Plane sound waves impinging on a concave irregularity tend to be focussed if the size of the irregularity is large compared to the wavelength of the sound.



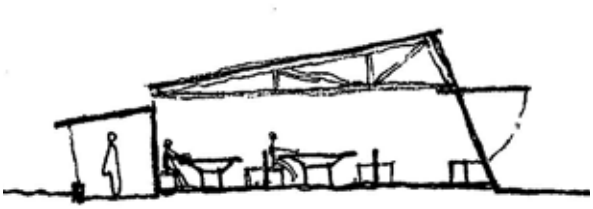


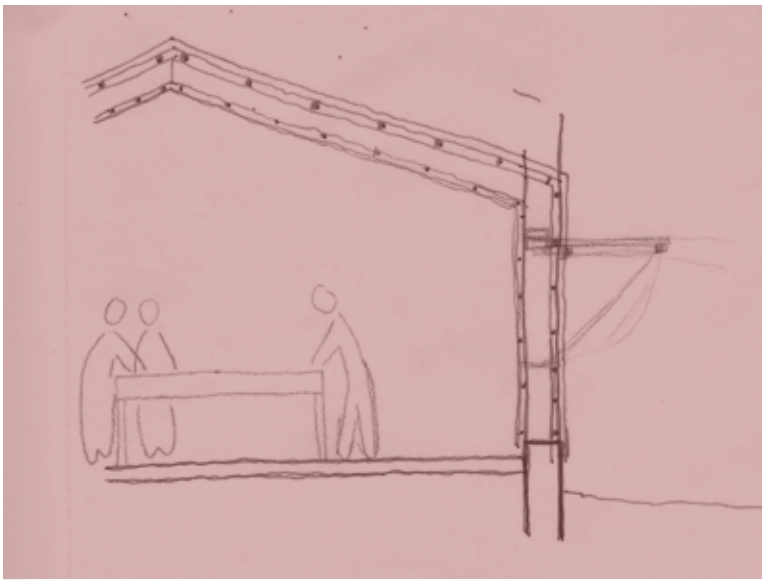


Above Fig 3.33 Sound Behavior Illustrations

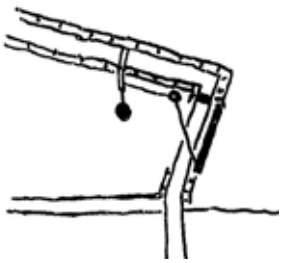

?
zinc sheeting
metal gutter box
steel purlins (not timber)
260x90 C-channels.
OSB.
90
260.
Concealing the
wood - thick NB?
ceiling boards?
or
exposed.





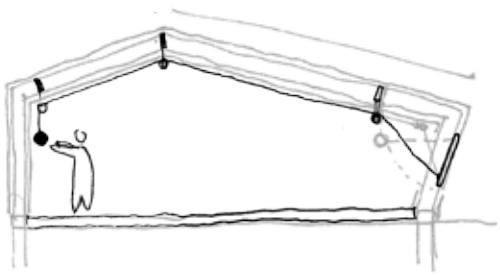


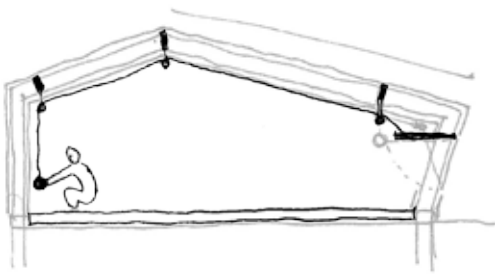
Pivoting panels are introduced to the games room where the interior space can be opened up easily to bring in the natural environment.





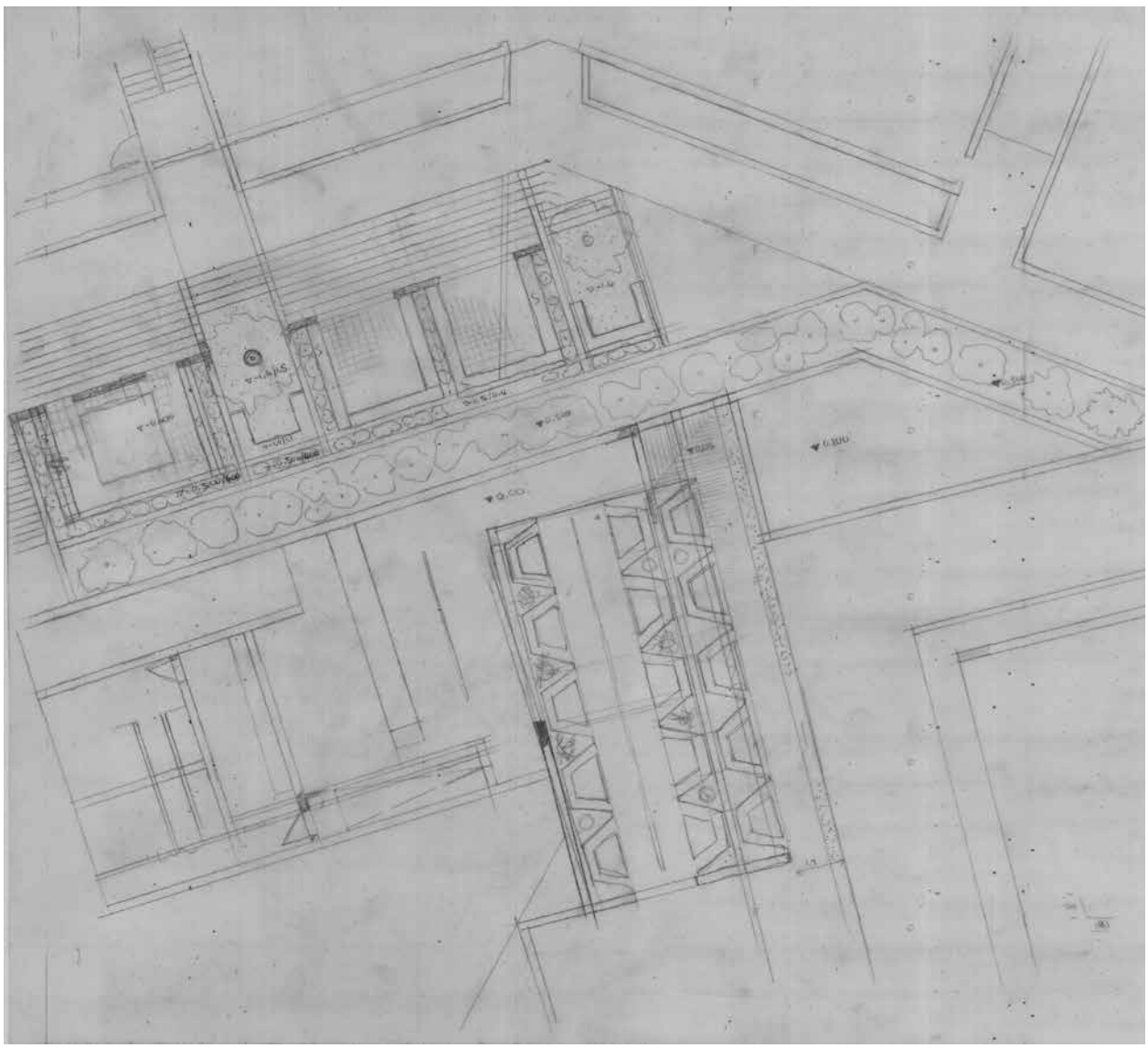
Circular pin joints suspended from the ceiling can be used to allow for ease of opening and closing the panel. The weight at the end however, disrupts the interior circulation.





design development | ‘hide-away’ spaces

As mentioned previously in the design brief , there is a need to create informal therapeutic spaces in addition to the formal spaces. The informal therapeutic spaces are labelled as ‘hide aways’. One of these ‘hide-aways’ are located along the residential circulation spine facing Northwards.



These spaces are split into 2 types- one is a larger more public area that provides seating space for many people as well as an enlarged chess board. The other is a much smaller space with seating for a maximum of 3 people. This smaller space is at a lower level to the first to provide another layer of privacy.

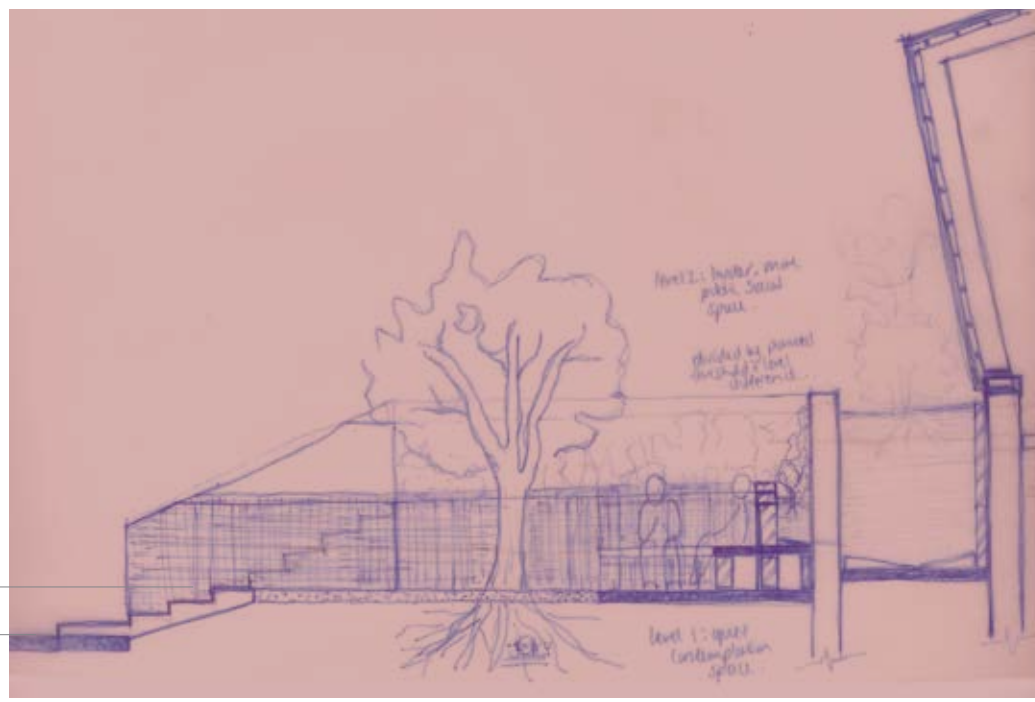
Large Hide-Away

Walkway

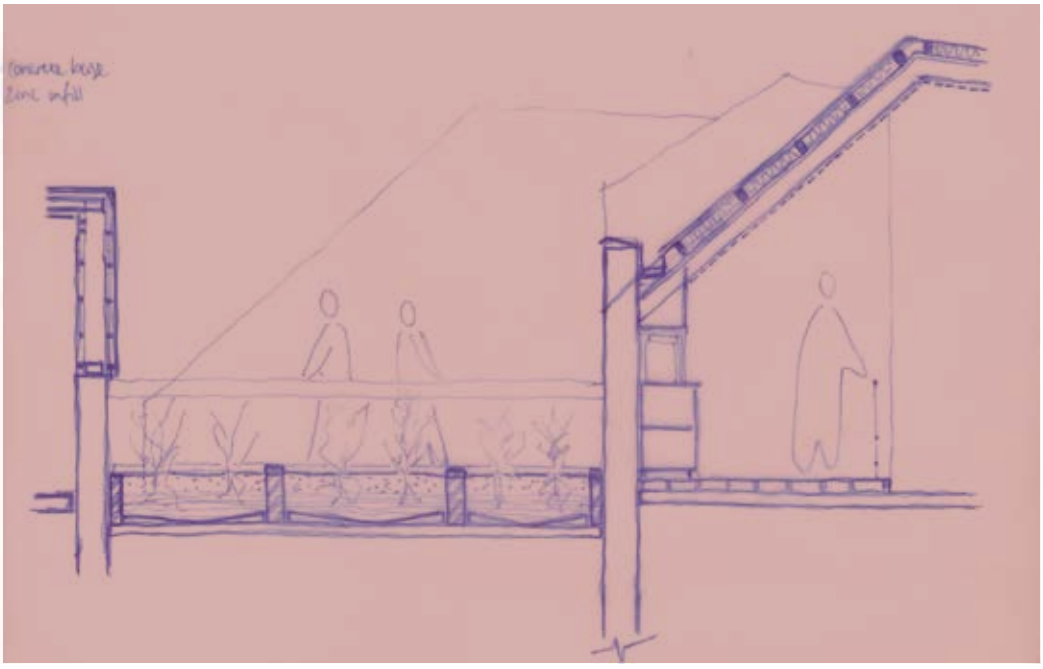


Small Hide-Away

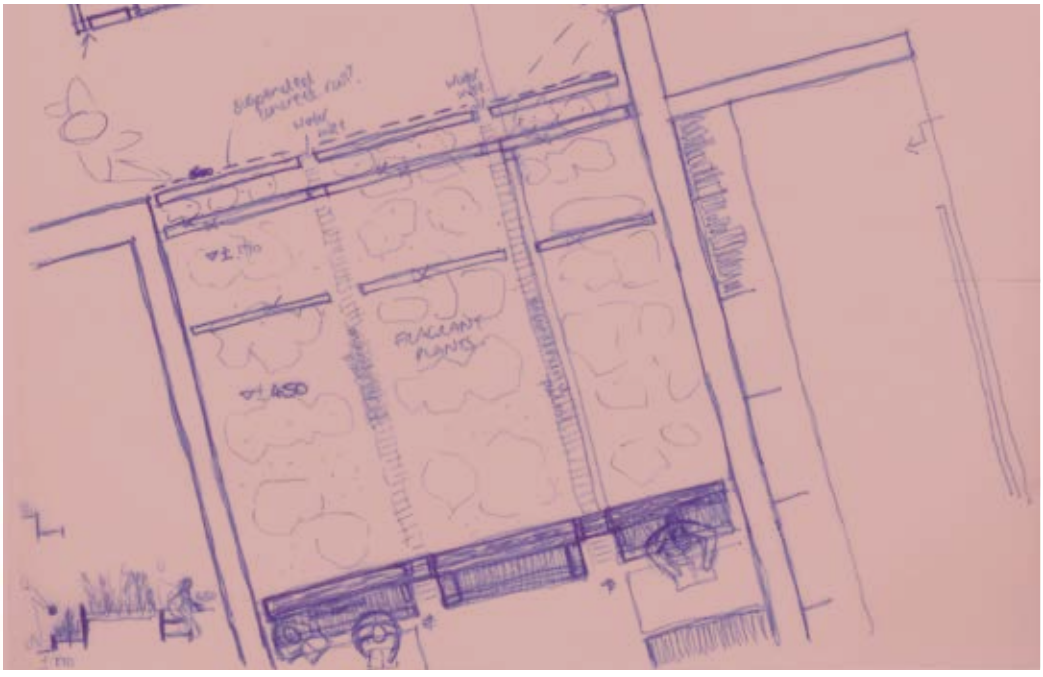
Walkway



The library scented garden is to be raised above the natural ground level in order to act as a privacy filter between the public walkway and the quiet outdoor reading area.



Section of Library Scented Garden



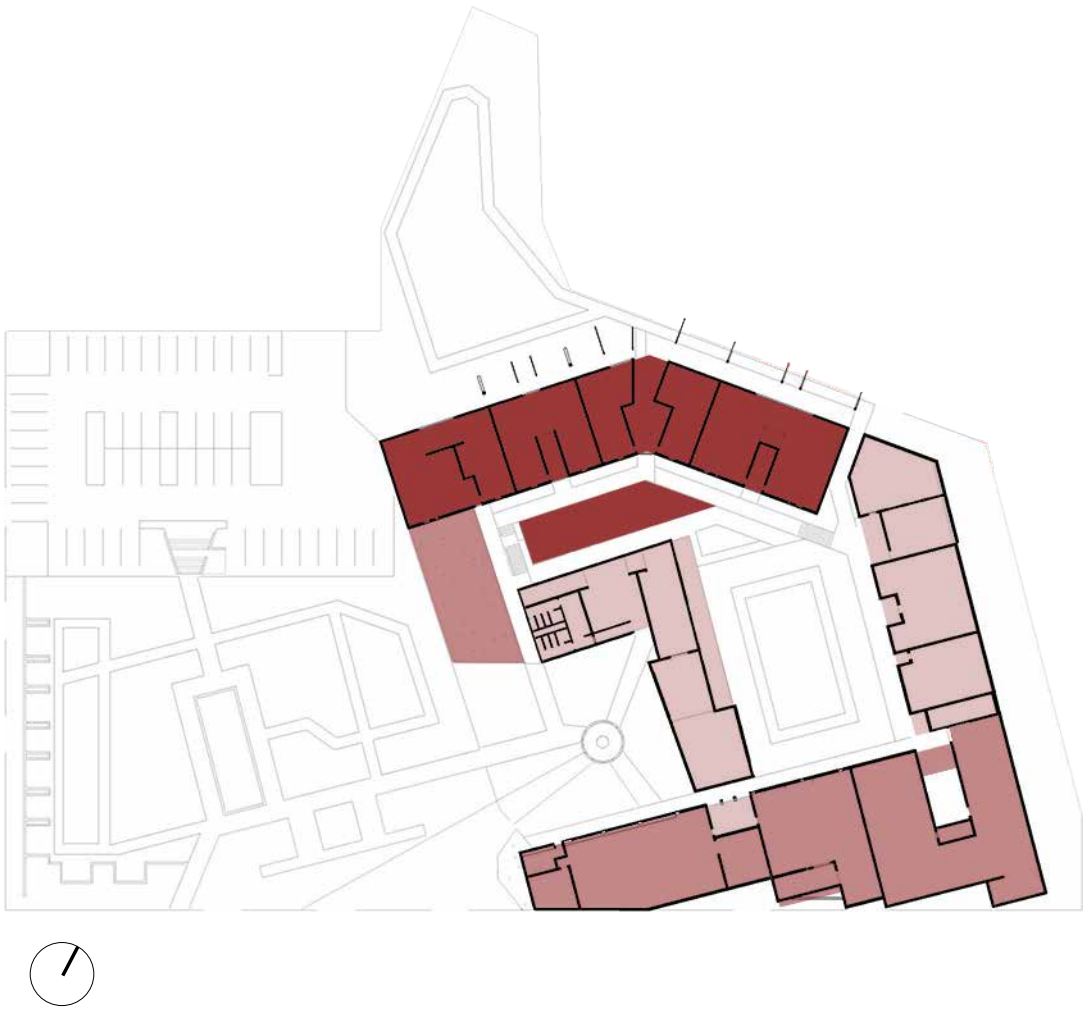
Plan of Library Scented Garden

Right Fig 3.34 Context Model





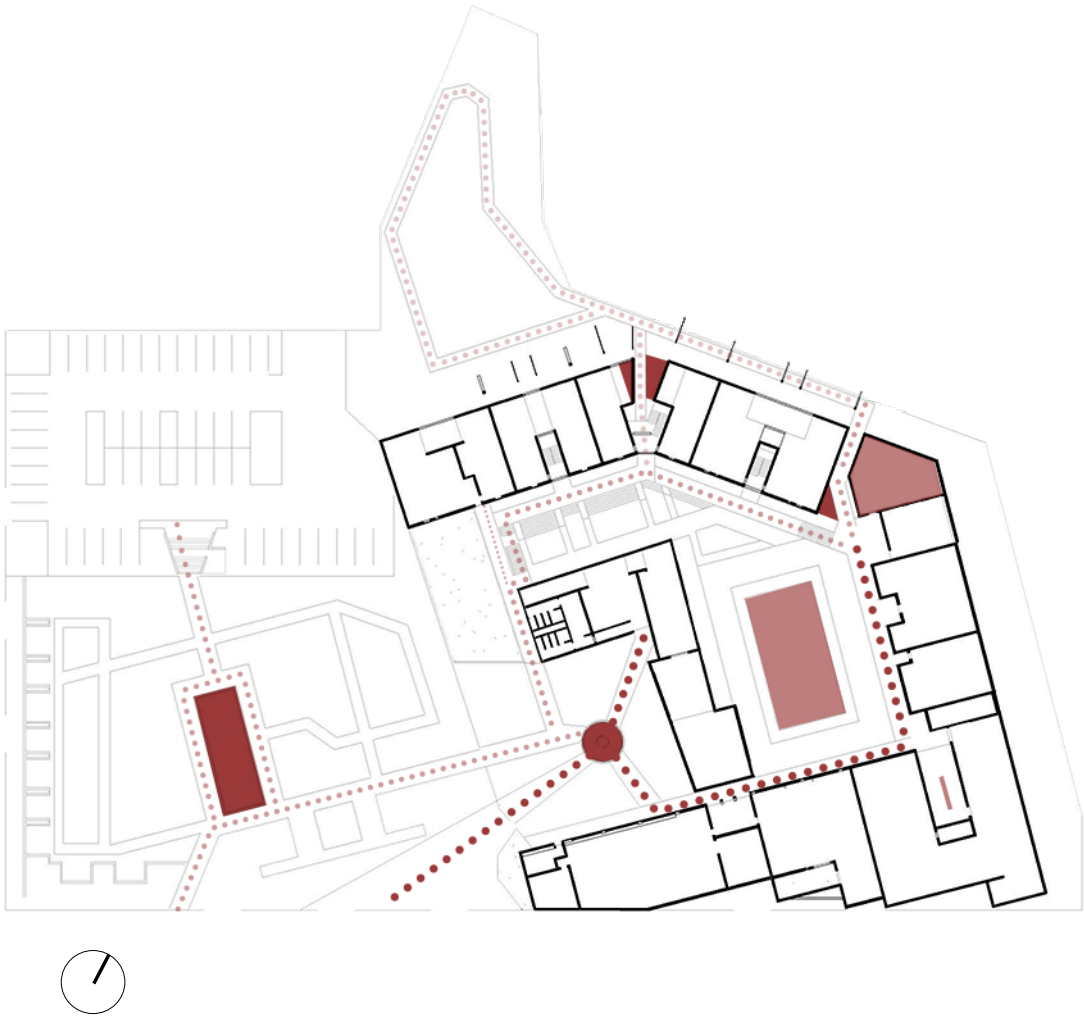
centre for the visually impaired



Private — Public

Formal Programme						
	Residential	Admin	Clinic	Library	Classrooms	Cafeteria

Informal Programme				
Hide away spaces	Vegetable Garden	Sensory Landmarks Park & Parking	Chess boards Goalball Field Showdown Table	



Circulation within the centre has been kept as orthogonal as possible for the ease of movement for the visually impaired. Where movement is not orthogonal, the textured walls will guide the person along.

Public movement is kept to the South nearby the public functions, whereas the private movement is kept to the north by the private functions.

Public Movement

Semi-public to Private Movement

Primary Sound Landmarks: fixed and in constant operation.

Secondary Sound Landmarks: not in constant operation, eg. the music room and the goalball field.

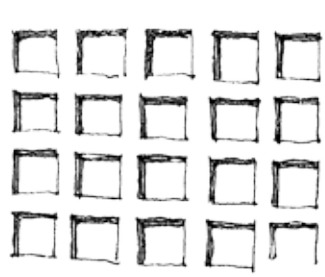


Textures within the centre are cast on the concrete precast panels. The textures vary from stone, waffle, timber grain, wide and thin ribbed and prickly. These textures will be cast into the panels at hand height for visually impaired people to identify with different areas.

In addition, the highlighted areas in the above diagram indicates a change in level which announces the entrance to an area. This change in level is in a form of a ramp so as to ensure safe mobility.



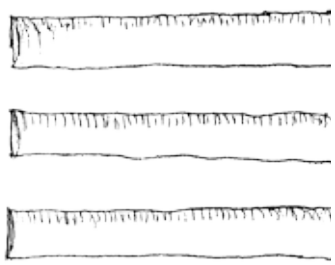
Stone
(Residences)



Waffle
(Cafe)



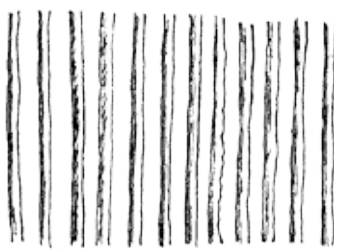
Timber Grain
(Administration)



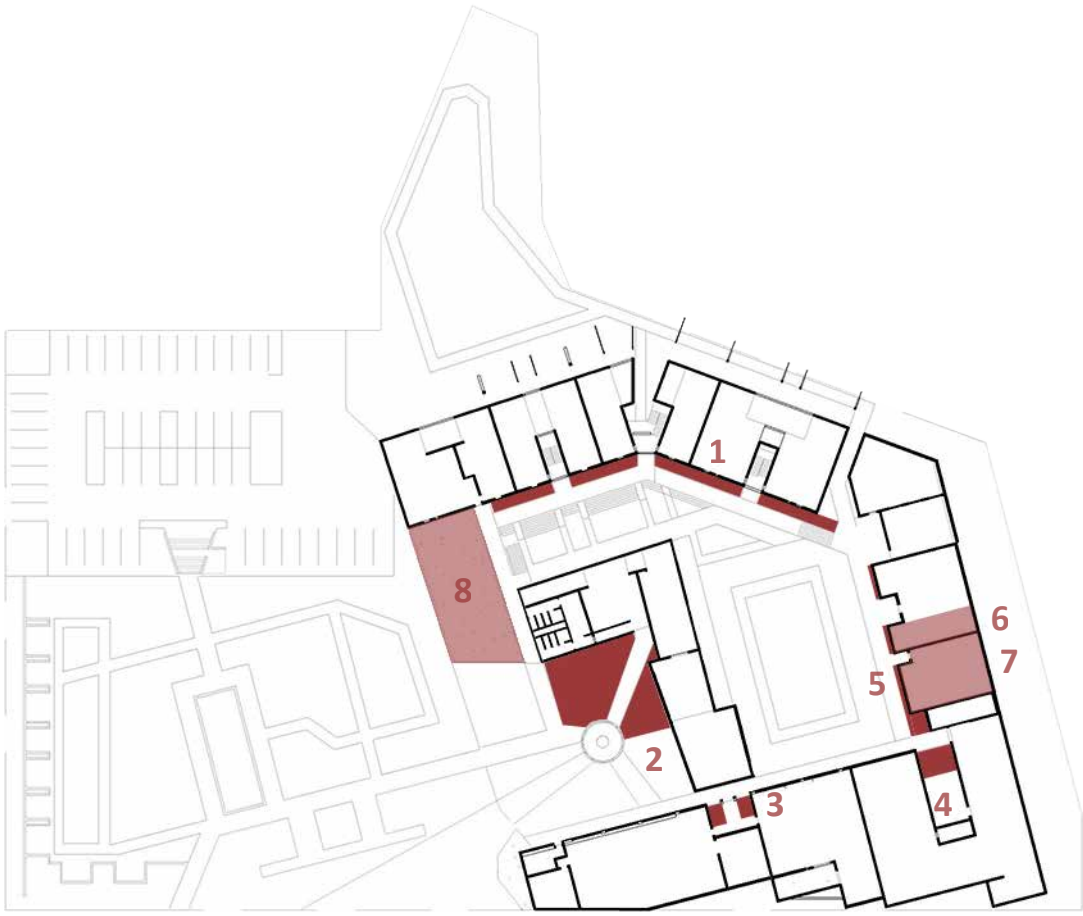
Wide Ribbed
(Library)



Prickly
(Ablutions)



Thin Ribbed
(Classrooms)



The primary scented gardens are used to indicate the approximate location of various areas within the centre. Further research into a fragrant plant that withstands shade was needed for the residential area. The plant chosen was ‘Kahori Dianthus’ which is robust in various conditions. It blooms for majority of the year.

The secondary scented landmarks are places such as the vegetable garden, the kitchen classrooms and the pottery class.

Primary Scented Landmarks

Residences- Kahori Dianthus
Classrooms- Rosemary
Library- Lavender
Administration- Mint
Cafe- Ginger Rosemary

Secondary Scented Landmarks



1 Kahori Dianthus
(Residences)



2 Ginger Rosemary
(Cafe)



3 Mint
(Administration)



4 Lavender
(Library)



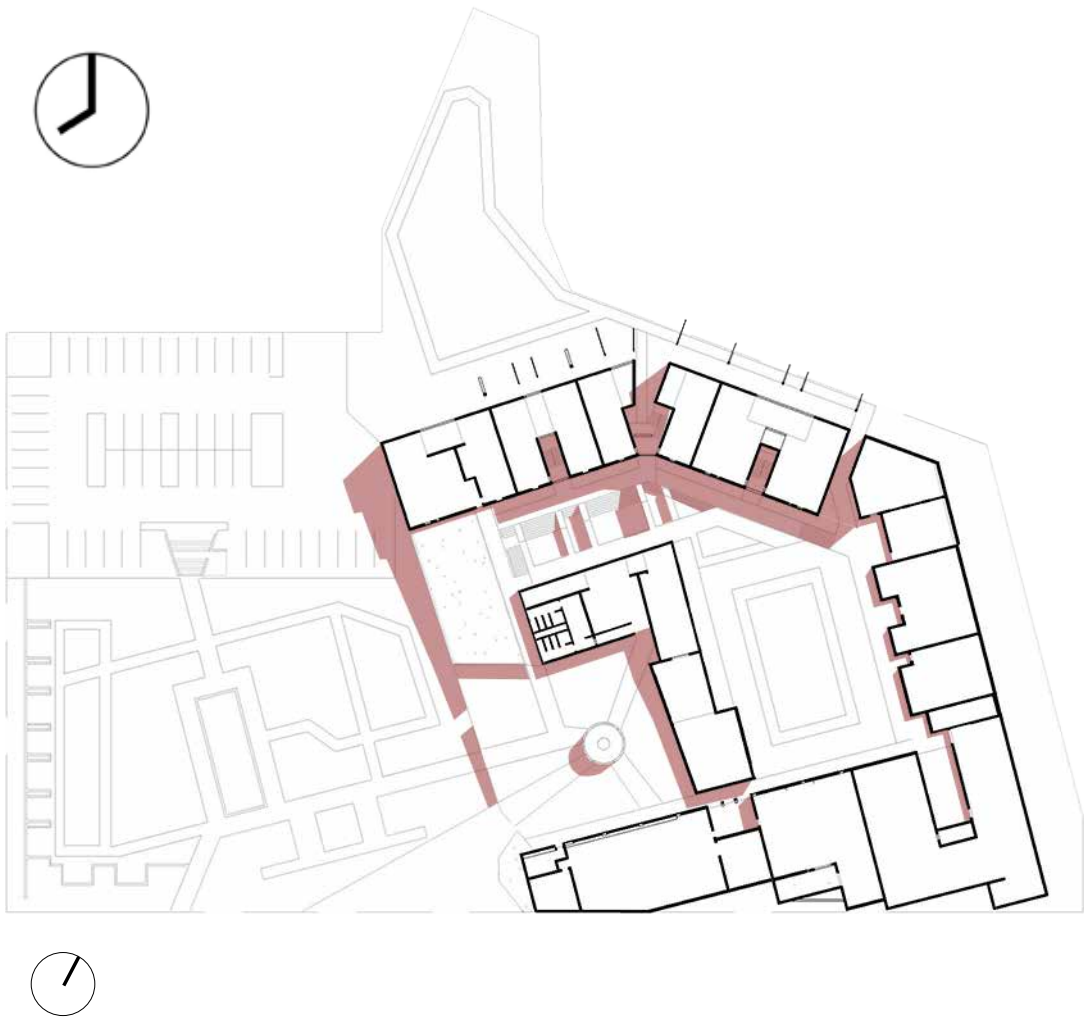
5 Heliotrope
(Classrooms)

Secondary Scented Landmarks

6 Pottery Classroom

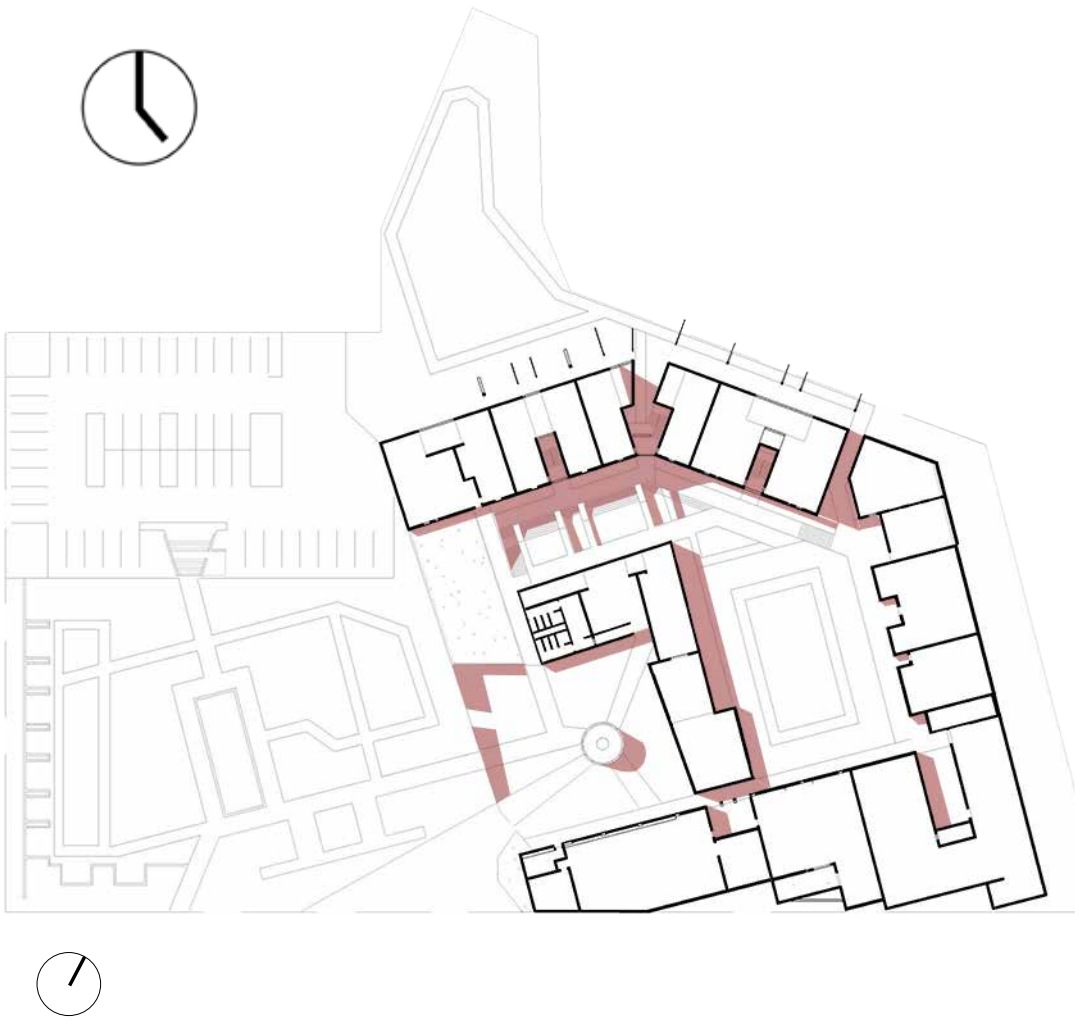
7 Food from Kitchen Class

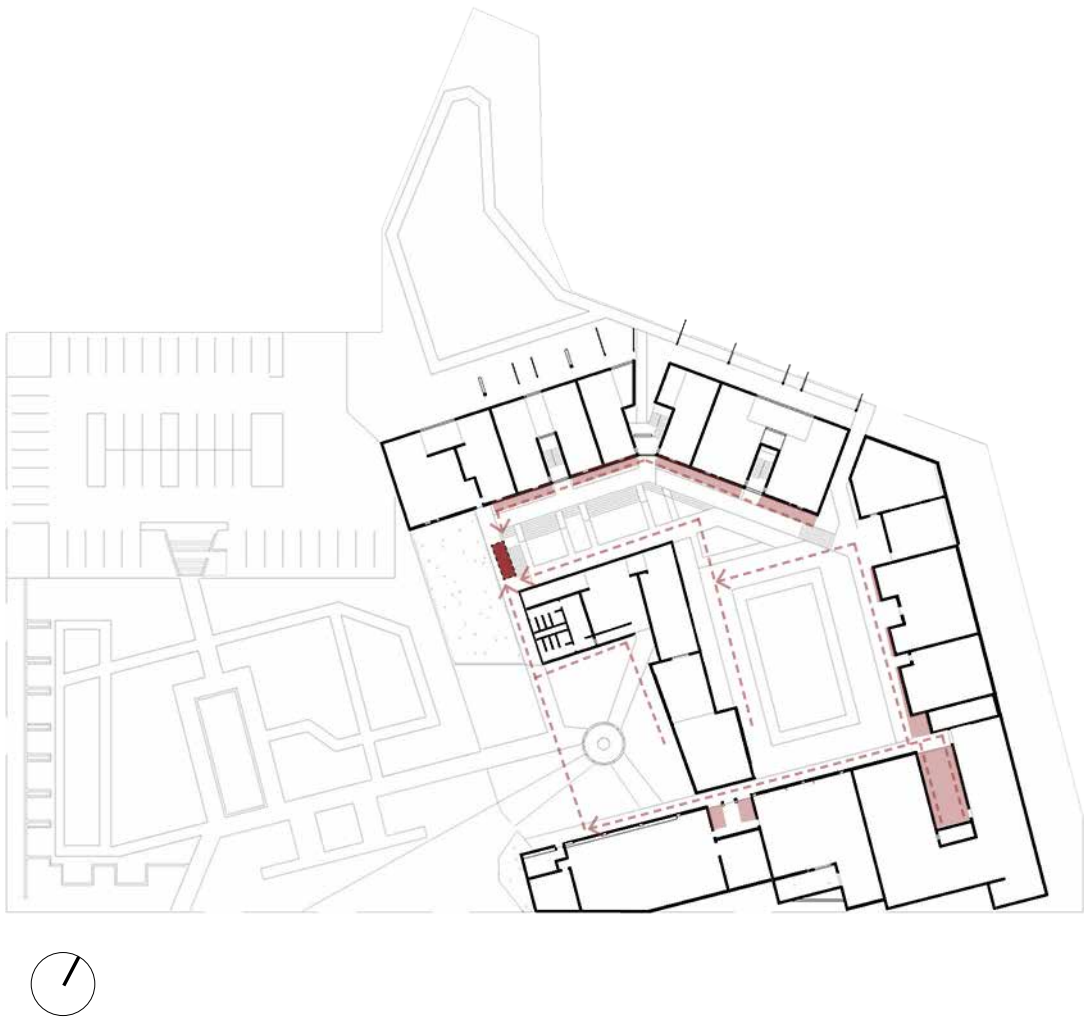
8 Vegetable Garden



This thermoception mapping takes into account the shadows and light produced by the building. The majority of the walkways are always well-lit in sunlight from morning to afternoon due to the form of the building. In contrast, the entrances to the various functions are usually receded back to be in shadow. This contrast is intended to help with partially impaired people.

The only walkway that is in constant shade is the residential path however, air is allowed to travel through the perforated skin of the circulation block to essentially create a wind tunnel. This wind tunnel is intended to assist the visually impaired to identify the location of the vertical circulation.

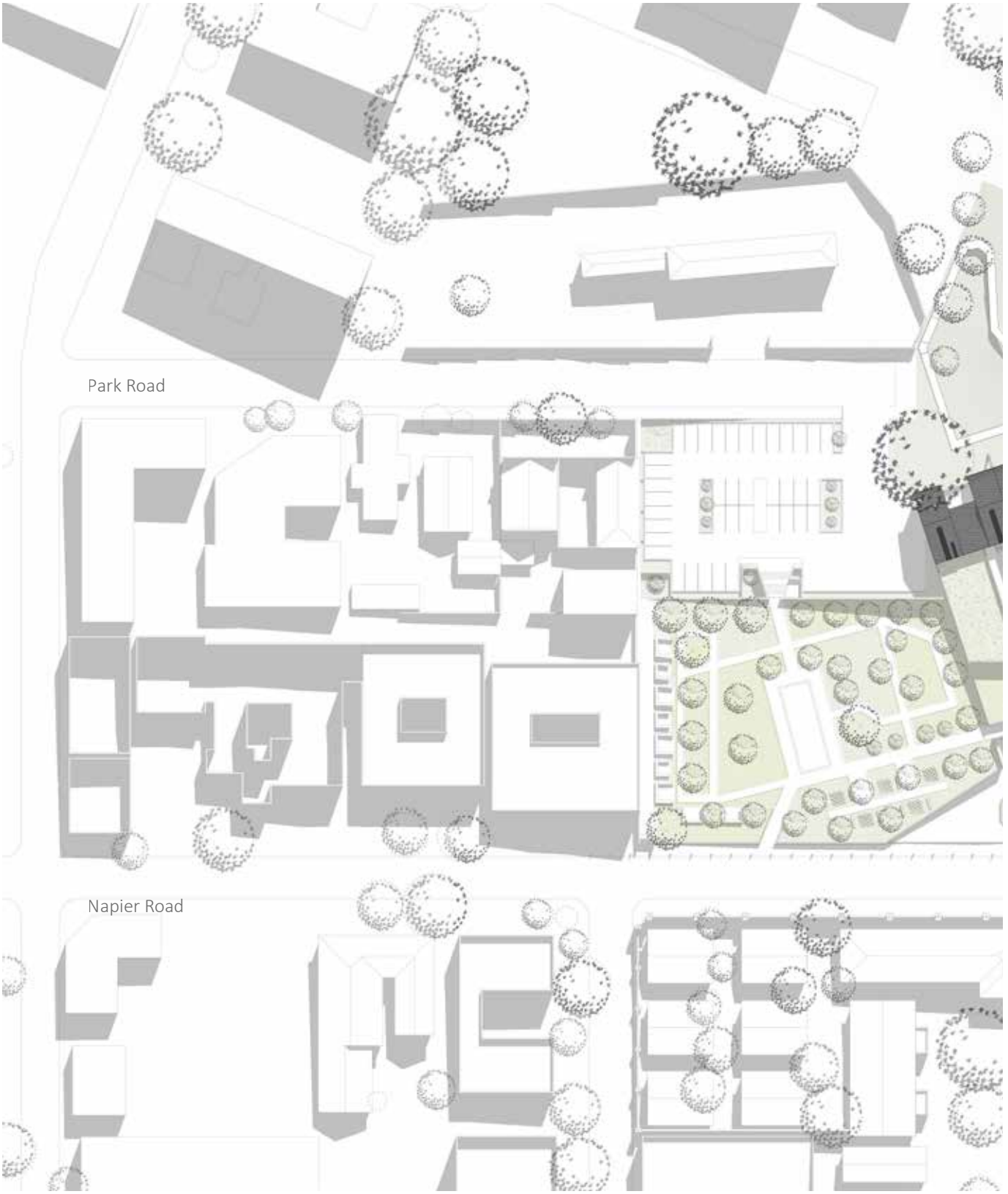




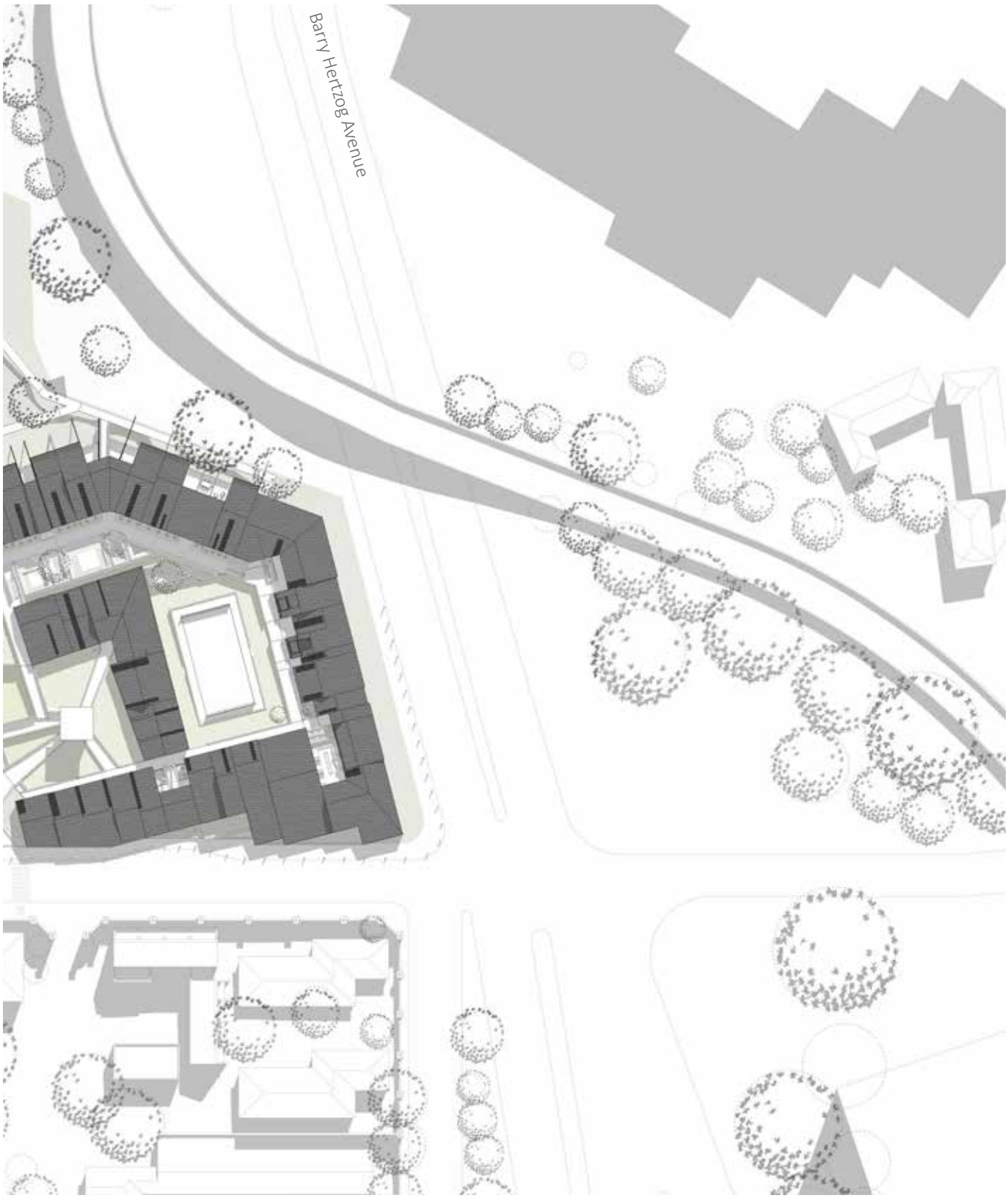
Rainwater and greywater harvesting is to be implemented for the use of irrigation purposes only. Rainwater and greywater is gravity-fed to a filter and a storage tank thereafter, the irrigation water is pumped to the required landscaping. The soft landscaping is indicated in the diagram as these areas act as rain gardens that absorb stormwater run off from the walkways.

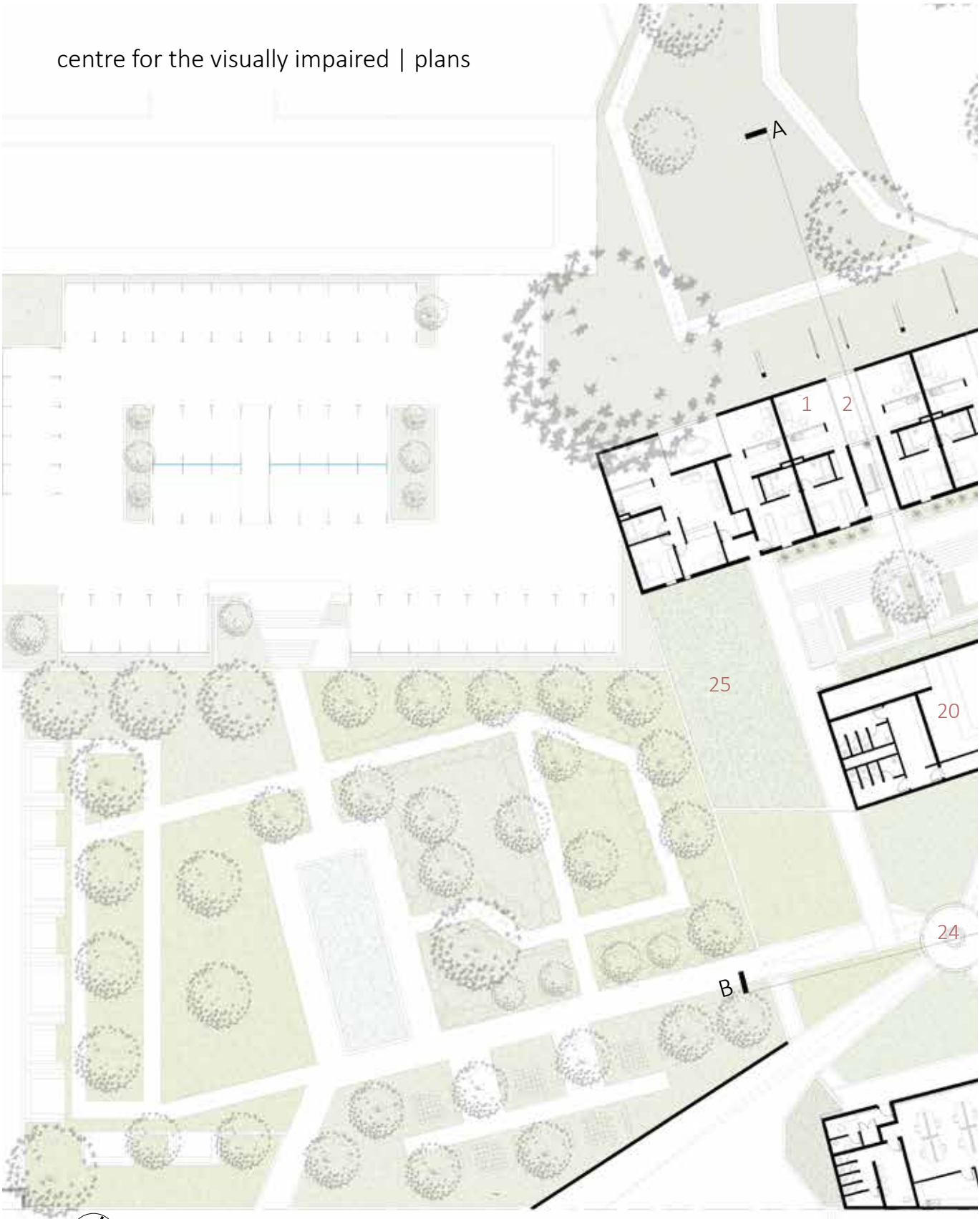
Rainwater Harvesting Pipes

Soft Landscaping: act as rain gardens to collect stormwater runoff and direct it to the storage tank



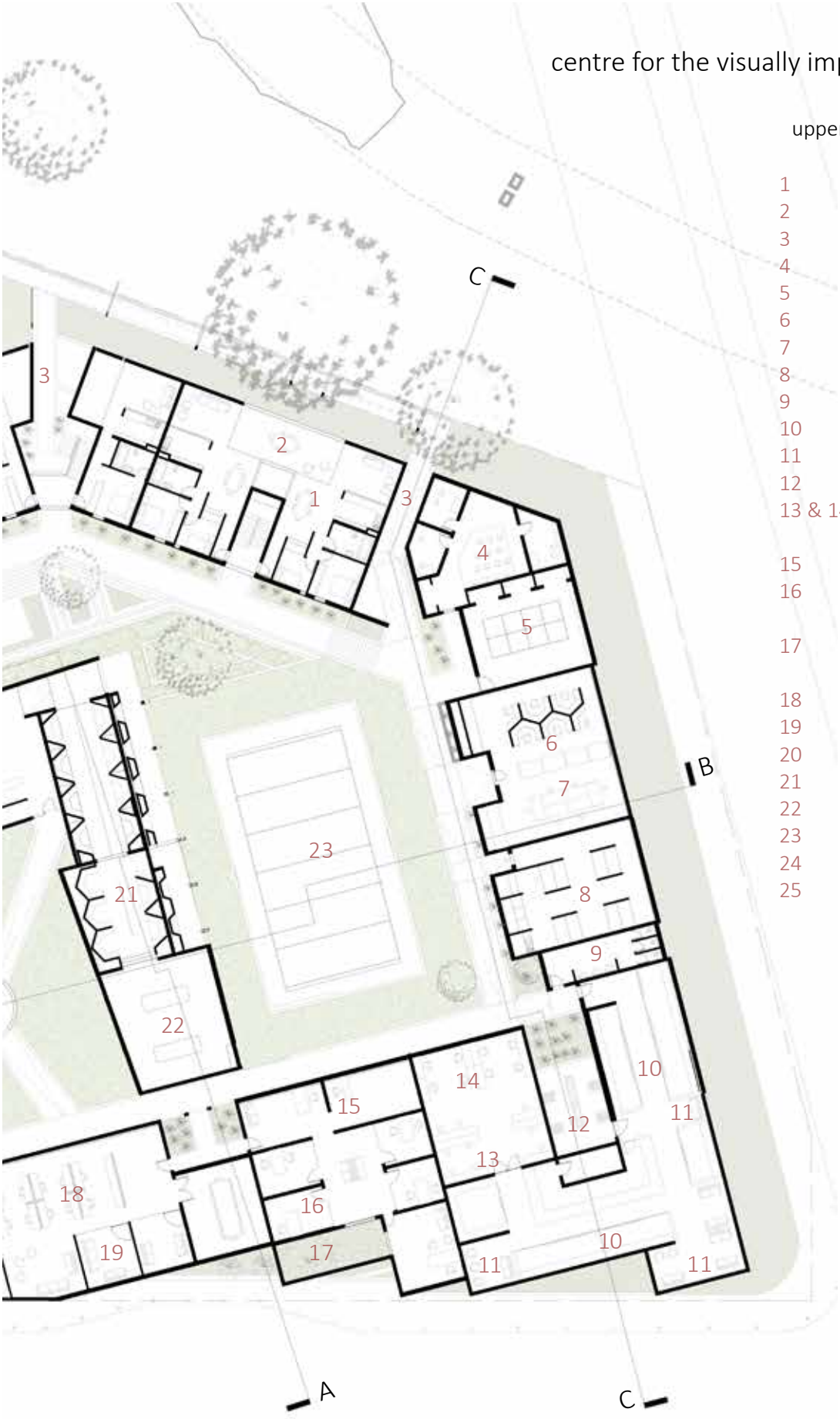
site plan


Barry Hertzog Avenue



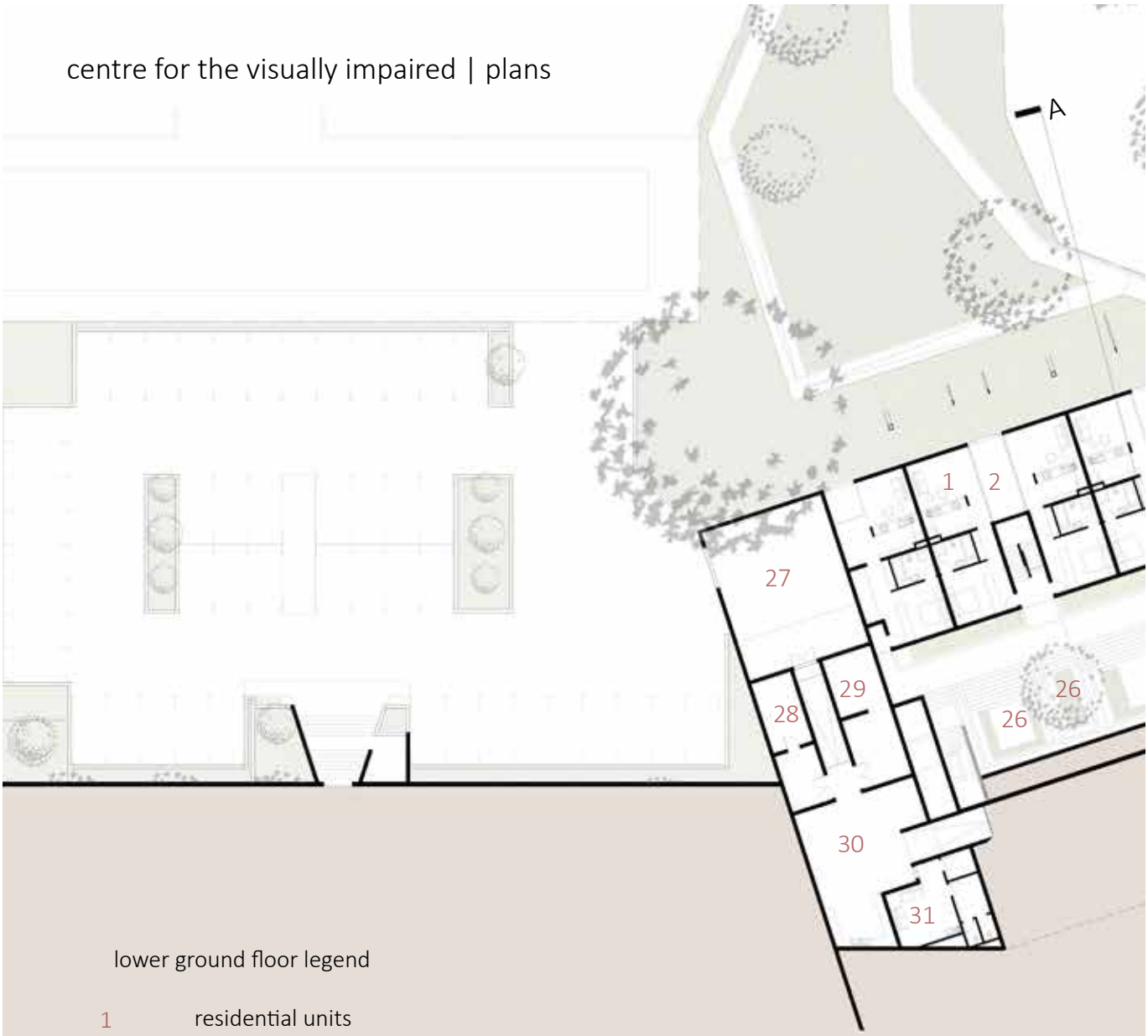
upper ground floor

10



upper ground floor legend

1	residential units
2	shared courtyards
3	sound passage
4	music classroom
5	exercise class
6	art & craft class
7	pottery studio
8	kitchen class
9	ablutions
10	library
11	reading areas
12	reading courtyard
13 & 14	audiobook & computer centre
15	technical aid shop
16	clinic consultation rooms
17	guide dog meeting area
18	administration
19	meeting rooms
20	cafe serving area
21	cafe seating area
22	games room
23	goalball field
24	navigation tower
25	vegetable garden



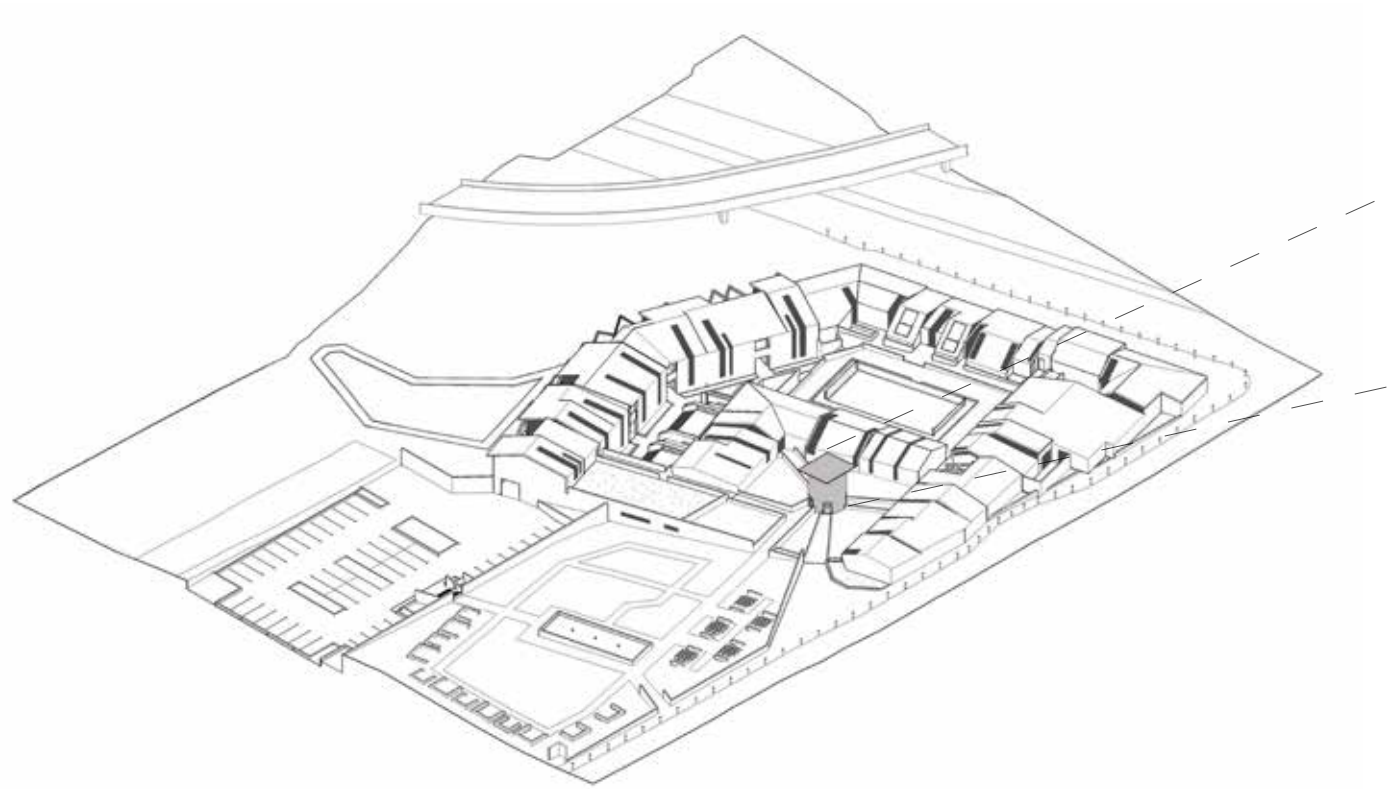
lower ground floor legend

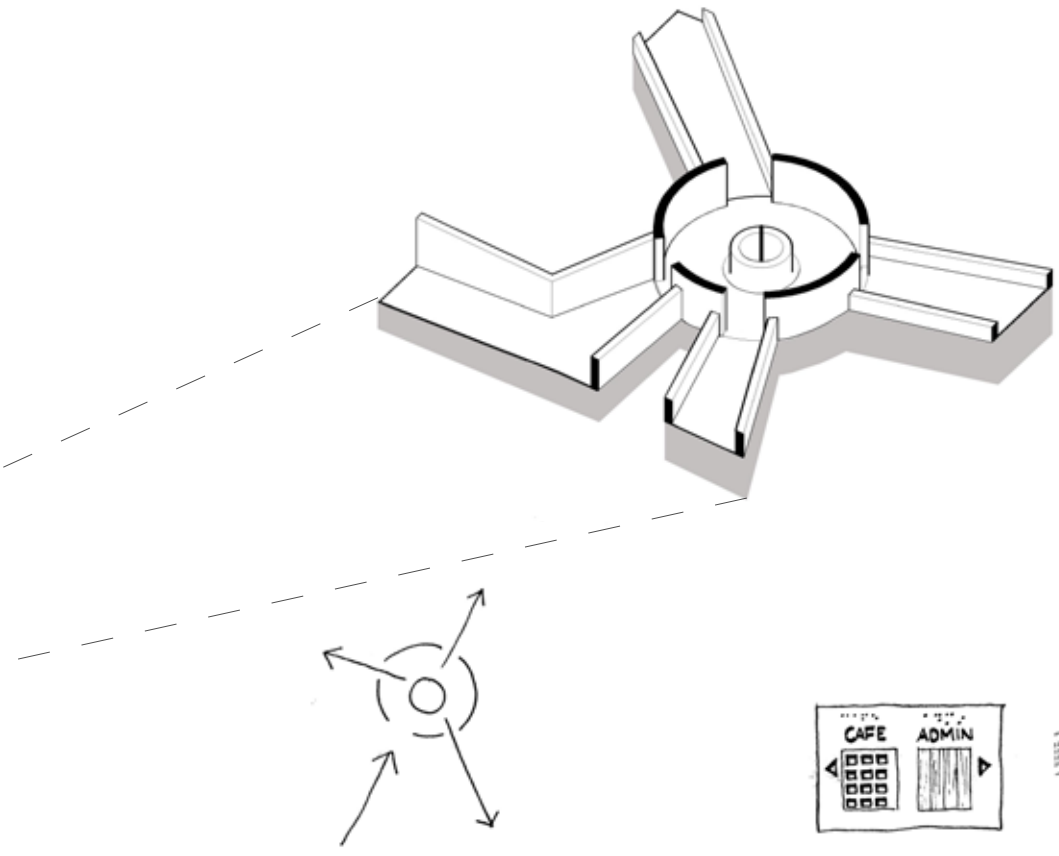
1	residential units
2	shared courtyards
26	hide-away spaces
27	delivery yard
28	cold & fresh store
29	equipment & dry store
30	kitchen
31	chef's room

lower ground floor

10


2
1
A





Directional Paths
One path leads a visitor to the tower where they can find their way to their desired destination by following the correct path.



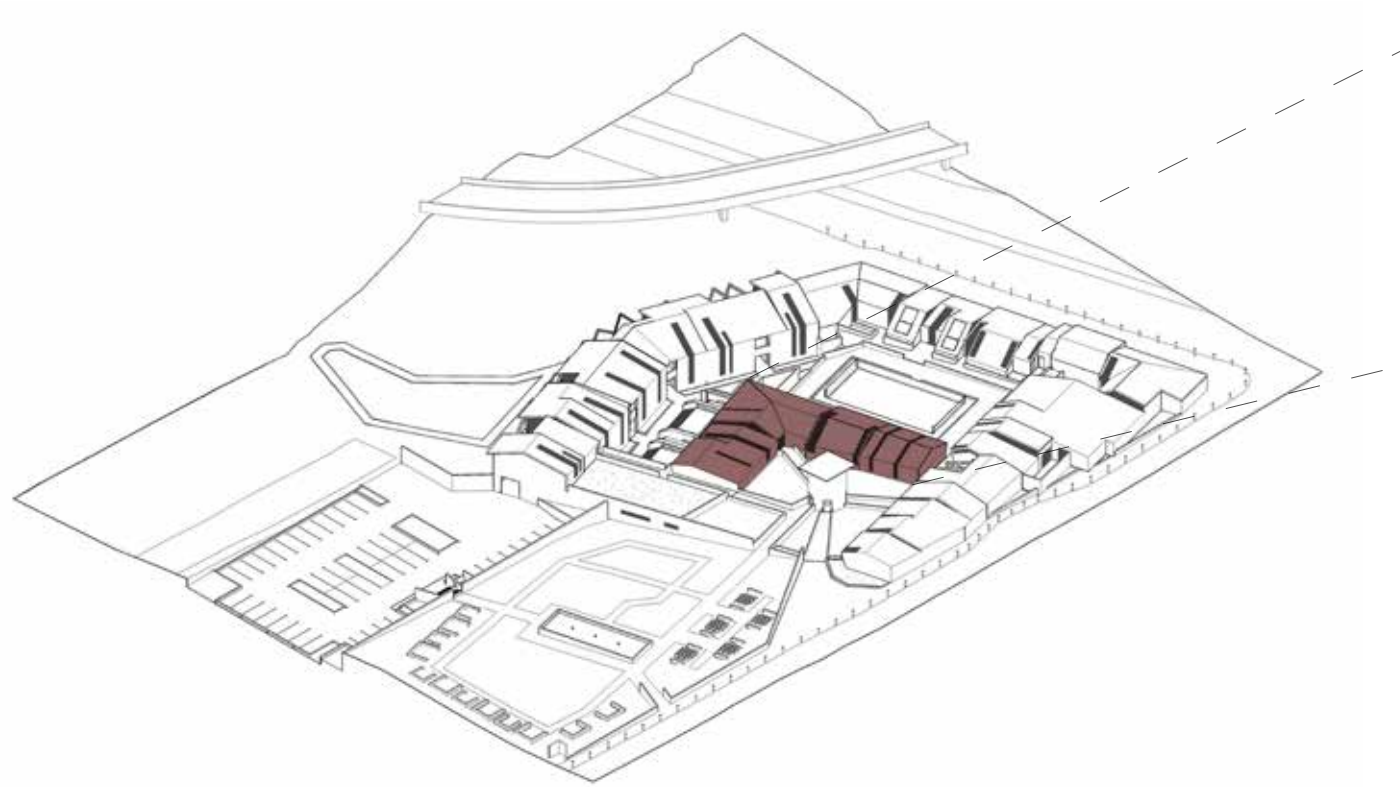
Tactile Texture for Navigation
Visitors identify the correct path by the unique tactile texture on the plaques. These are placed on either side of the opening to indicate which path to take. Braille and high relief lettering is also provided.

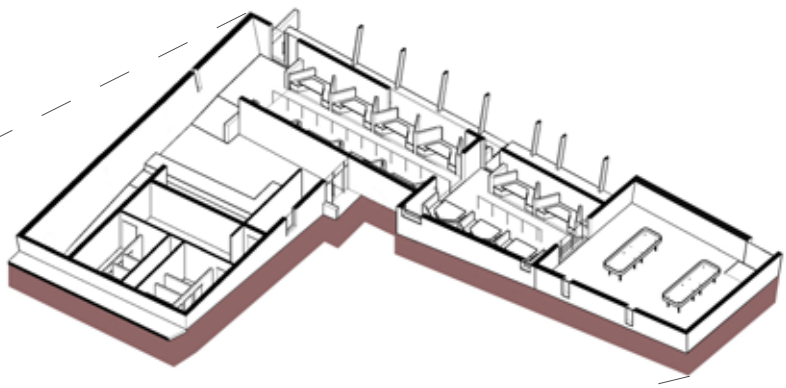


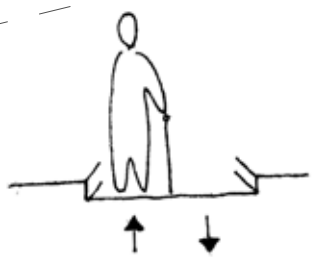
Orientation
In case of lost visitors, the tower has a water feature that creates noise in order to draw people to it and find their way again.



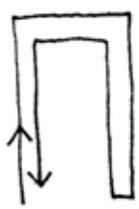
Boundaries
Gravel texture is used to indicate the floor's edges for safety. This is a common material used throughout the centre.



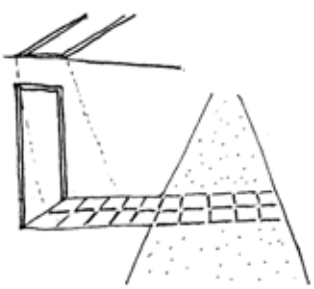




Stepped In Circulation
Walkways are stepped in, seperated from seating areas. Railing in the centre acts as a guide.

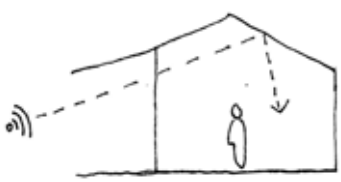


Circulation
Orthogonal looped circulation acts as a 2-way road to avoid collisions in a busy environment.

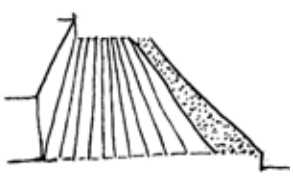


Floor Texture & Light
Difference in floor textures to indicate doorways. Rooflights above provide a contrast in light.

**Research in interviews revealed that most visually impaired can still distinguish between bright direct light and dark shadows.*



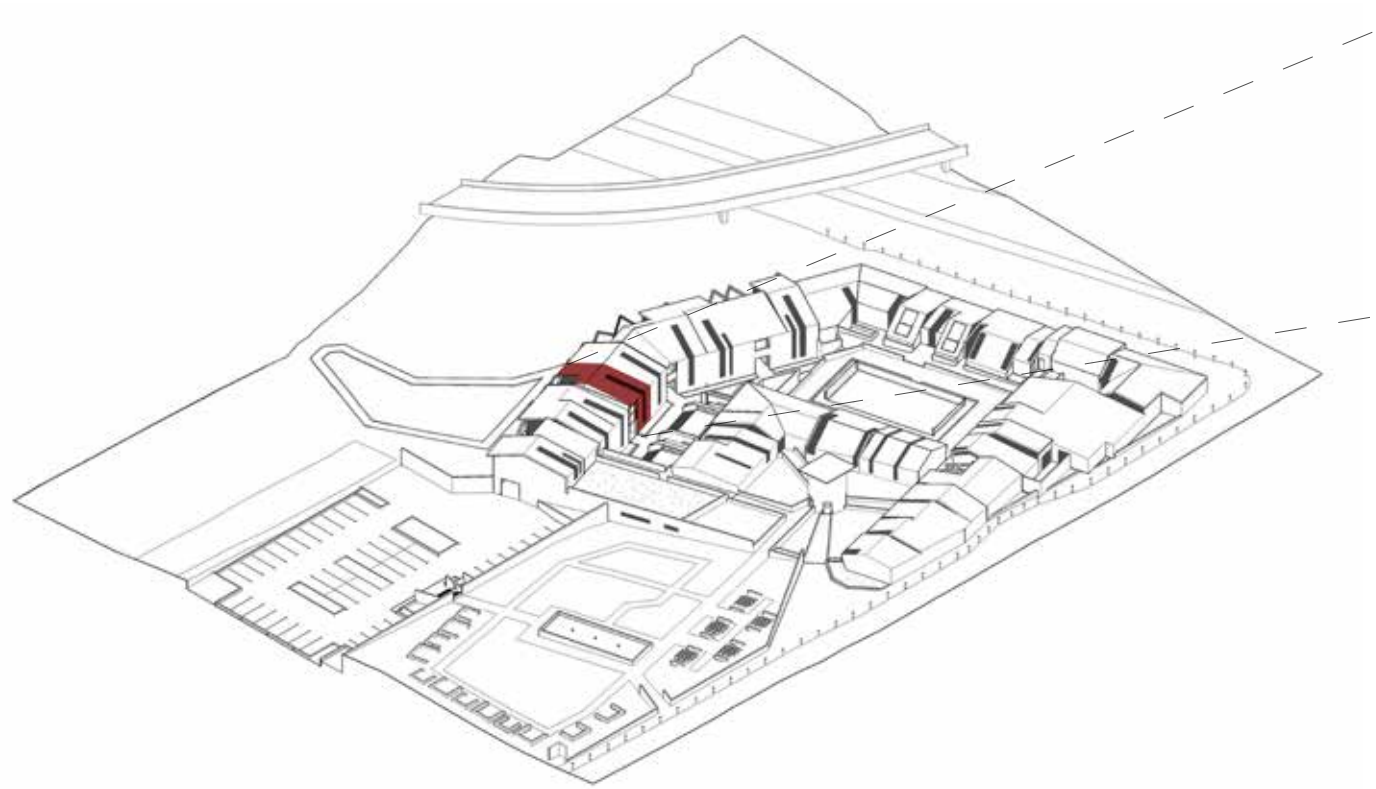
Sound
Sound waves travel through perforated wall to be reflected upon angled ceiling. This allows visually impaired to be aware of activities outside.

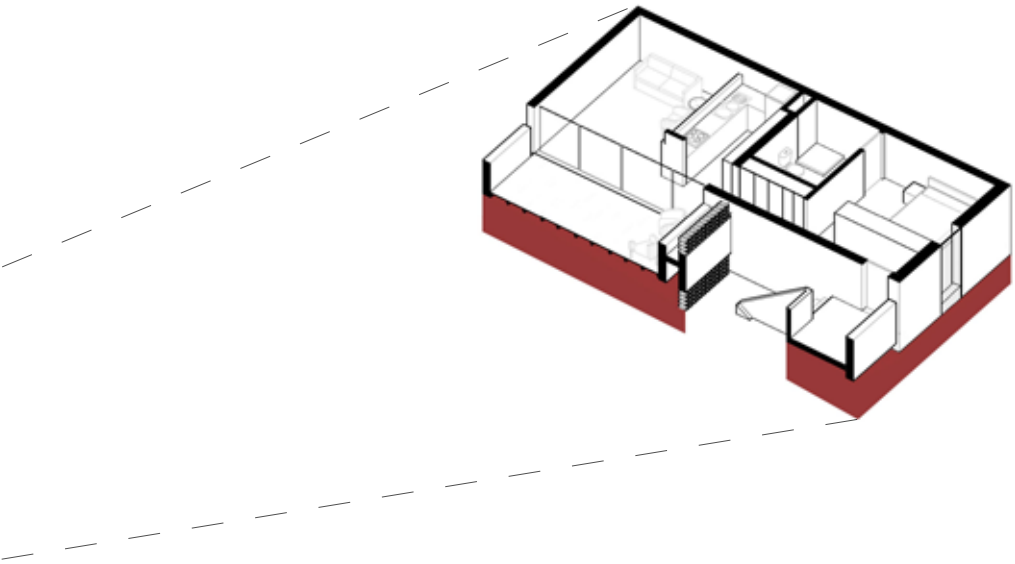


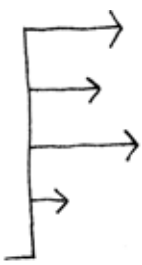
Sound
Suspended timber flooring is used for the outside deck to announce someone walking nearby. Gravel is used to indicate the floor edge.



Designated furniture
One edge = One seat for each person to know the extent of their own space.







Orthogonal Circulation
Units are planned around one main circulation route with rooms branching off on one side.

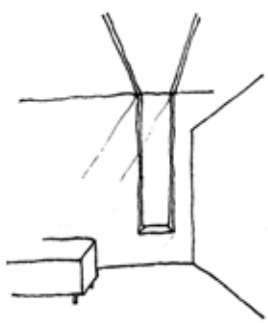


Privacy
Perforated walls and built in planters act as privacy barriers between shred courtyards and the public walkways.

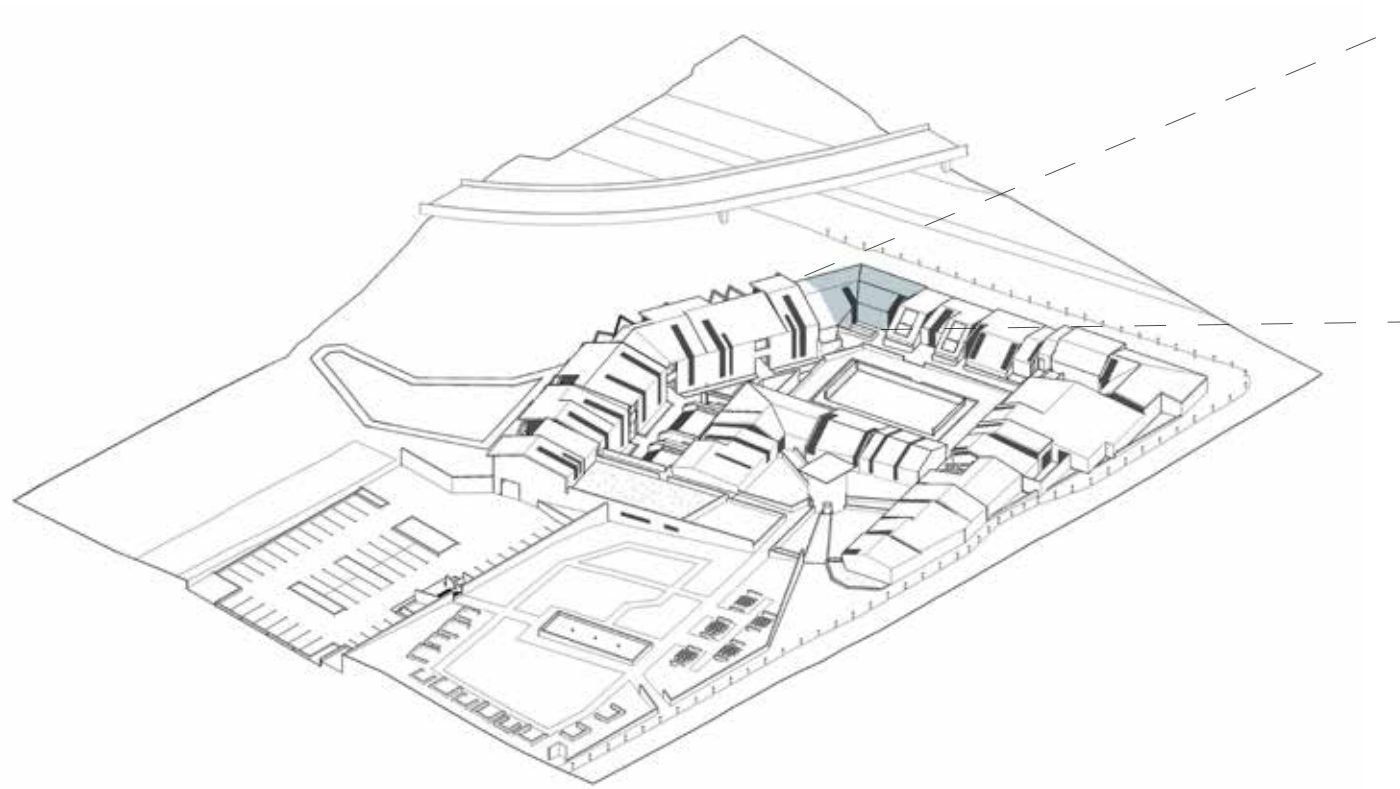
**Research conducted in interviews showed that smaller spaces are more efficient for visually impaired as it is easier to understand and memorize. Therefore the unit layout had to be simple and and systematic.*

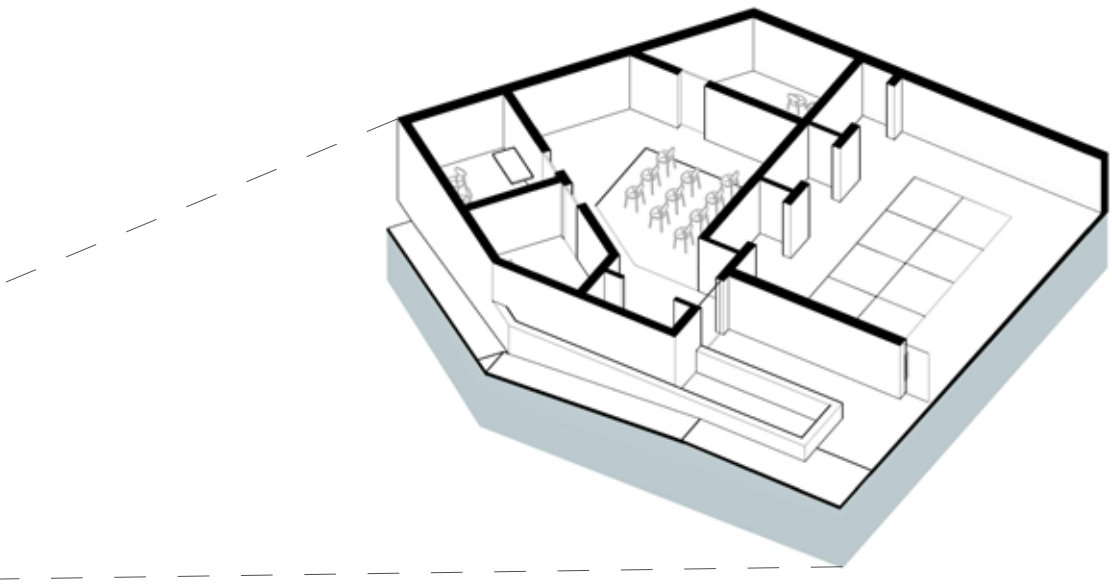


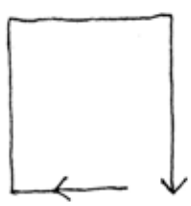
Shared Courtyards
Courtyards are finished with suspended timber flooring in order for residents to hear when someone is outside. Shared spaces allow for neighbours to support each other in traumatic times.



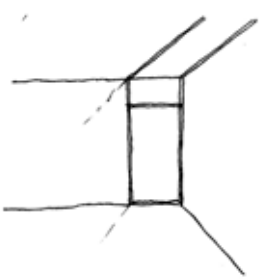
Light
Rooflights and windows provide a sharp contrast in light to indicate the main circulation in rooms.







Circulation
Orthogonal looped circulation acts as a 1-way road to avoid collisions.



Light
Rooflights and glass doorways provide a sharp contrast in light to indicate the entry points of the room.



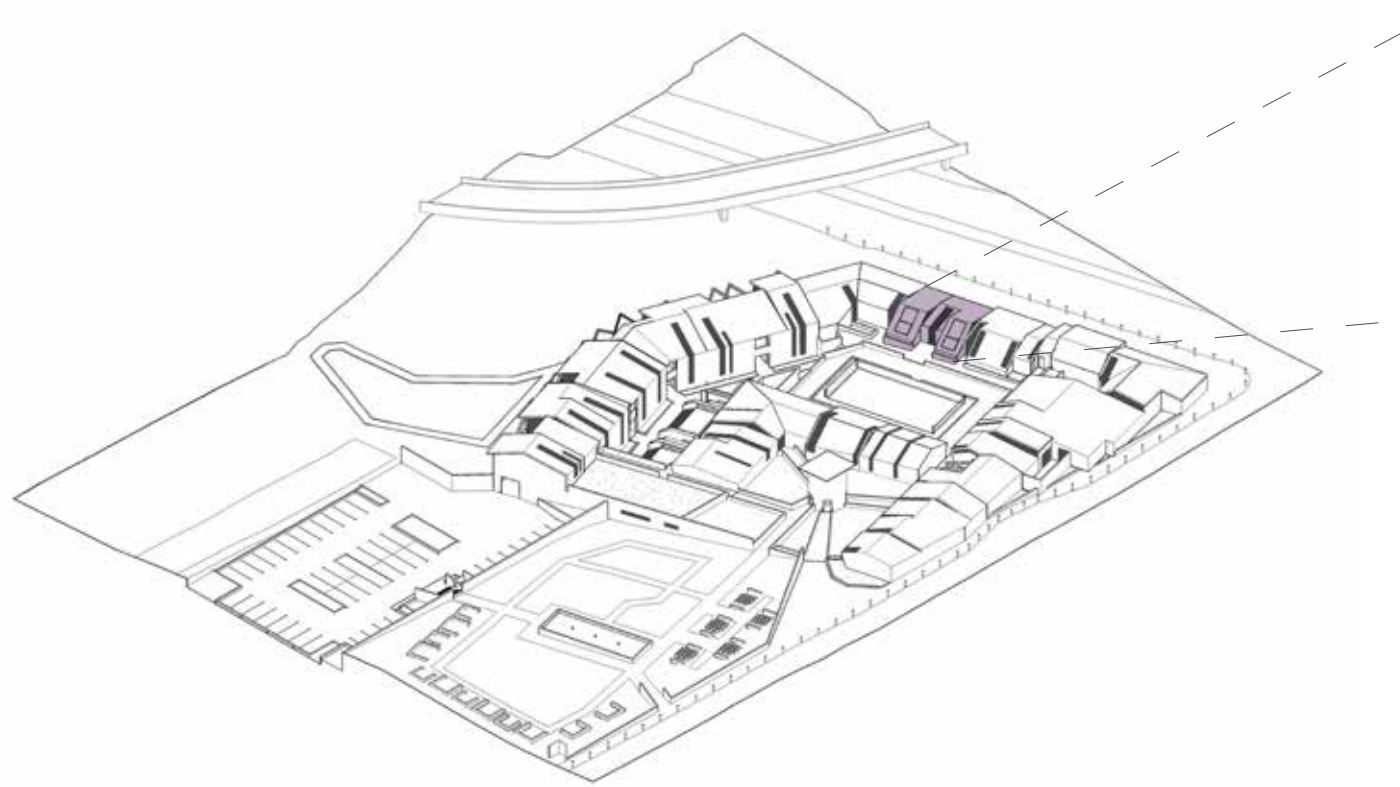
Acoustics
Small area with a large volume with acoustic panelling to absorb the music yet not feel claustrophobic.

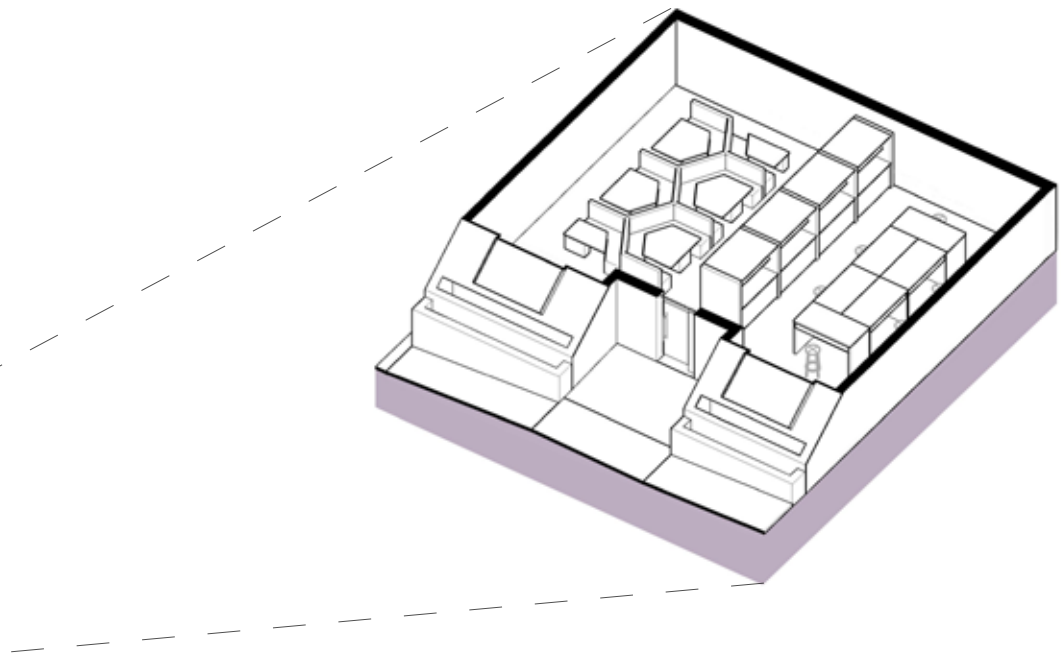


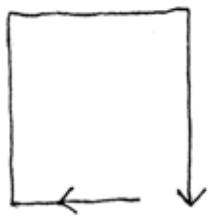
Floor Texture
Difference in floor texture indicates walkways from sitting area - Polished Concrete & Concrete Tile



Guiding Walls
Interior walls act as guides around the seating area.



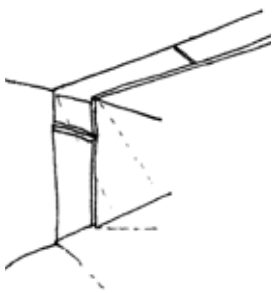




Circulation
Orthogonal looped circulation acts as a 1-way road to avoid collisions.



Sound
Sound waves travel through openings to be reflected upon angled ceiling. This allows visually impaired to be aware of activities outside.



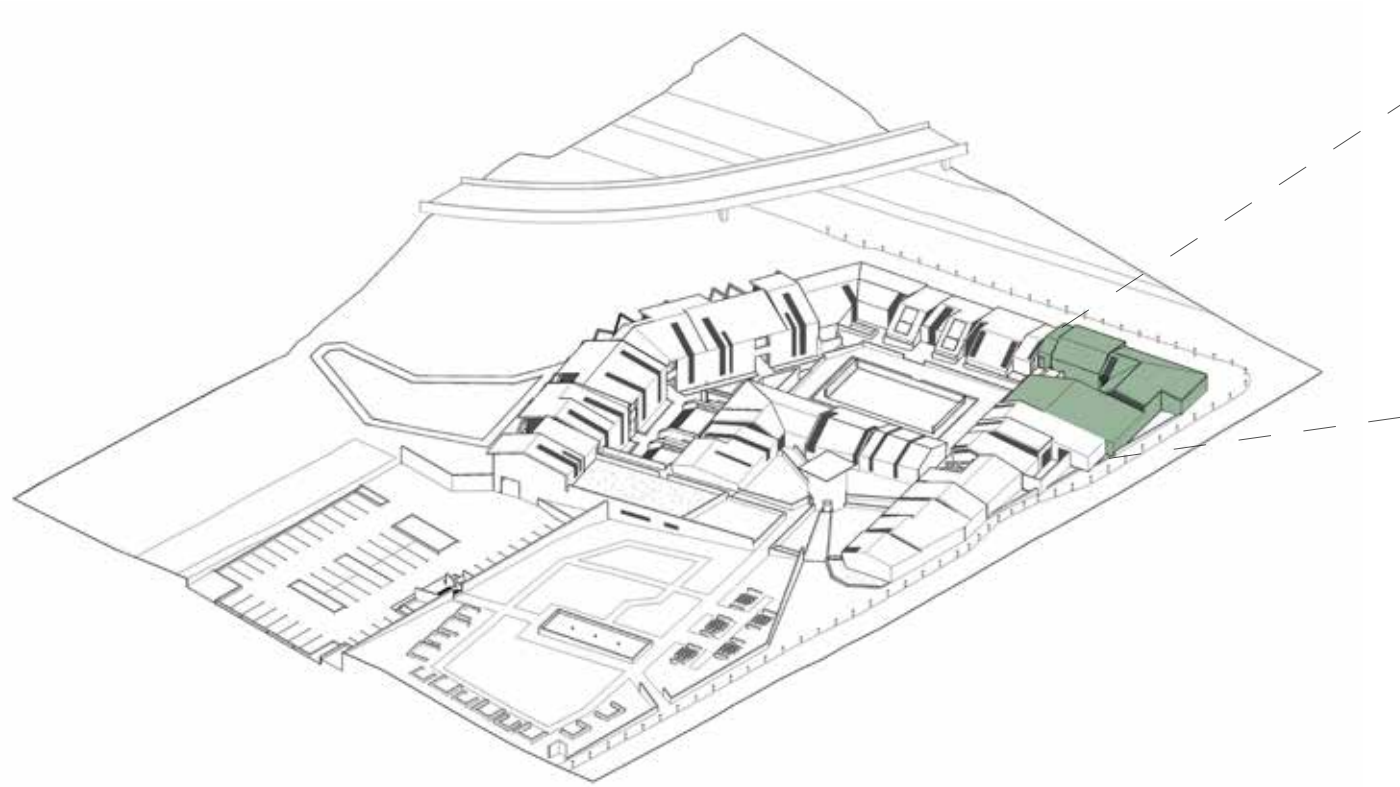
Light
Rooflights and glass doorways provide a sharp contrast in light to indicate the entry points of the room.

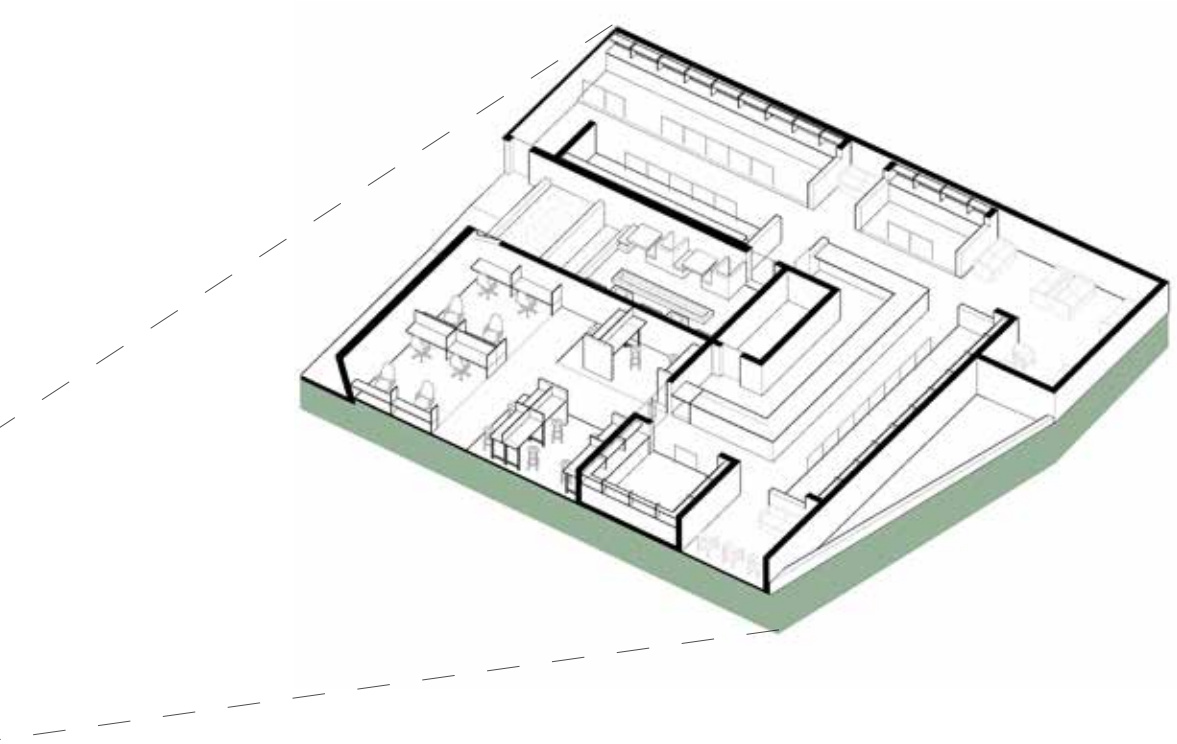


Designated furniture
One edge = One seat for each person to know the extent of their own space.



Furniture
Customised furniture with storage to be accessed easily and not be a disruption in the interior circulation.



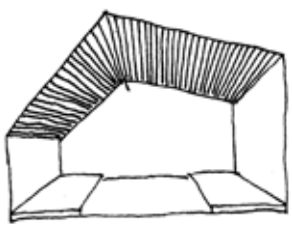




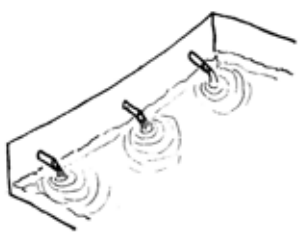
Stepped In Circulation
Walkways are stepped in, seperated from browsing areas. Railing on the edge acts as a guide for book browsers not to fall off the edge.



360° View
Centralised librarian desk to ensure all visually impaired visitors are assisted.



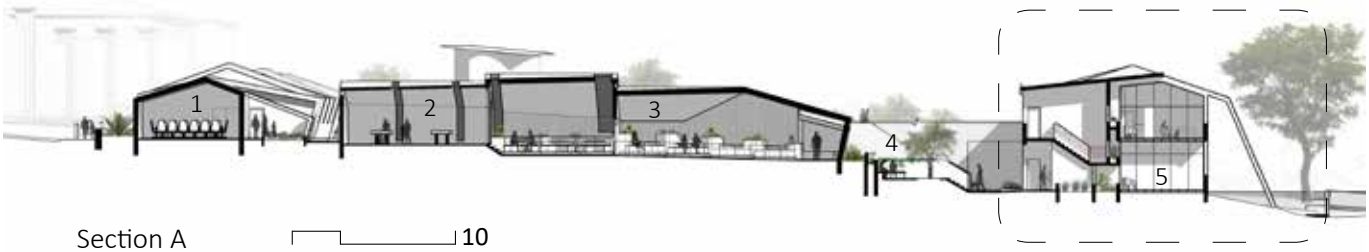
Library Scents
Timber clad finished ceiling in order to enhance the typical 'old and warm library' scent.



White Noise
A water feature that exudes soft sounds is placed in the outside reading courtyard to create a tranquil atmosphere.



East Elevation 10



Section A 10

1	Meeting Room	4	HIde-away Space
2	Games Room	5	Residence - Shared Courtyard
3	Cafe Seating Area		



Section C 10

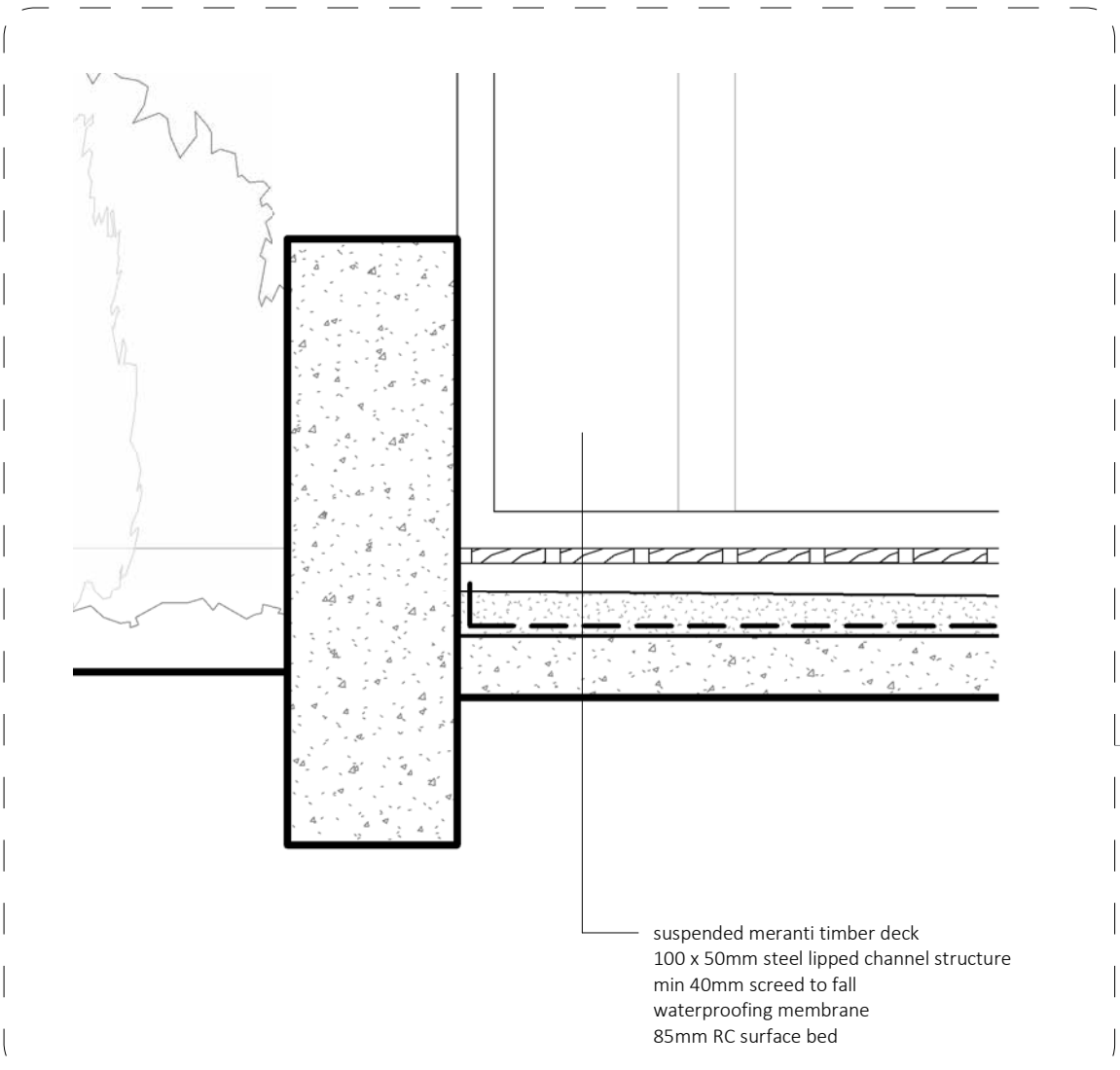
1 Library Reading Courtyard
2 Library



West Elevation 10

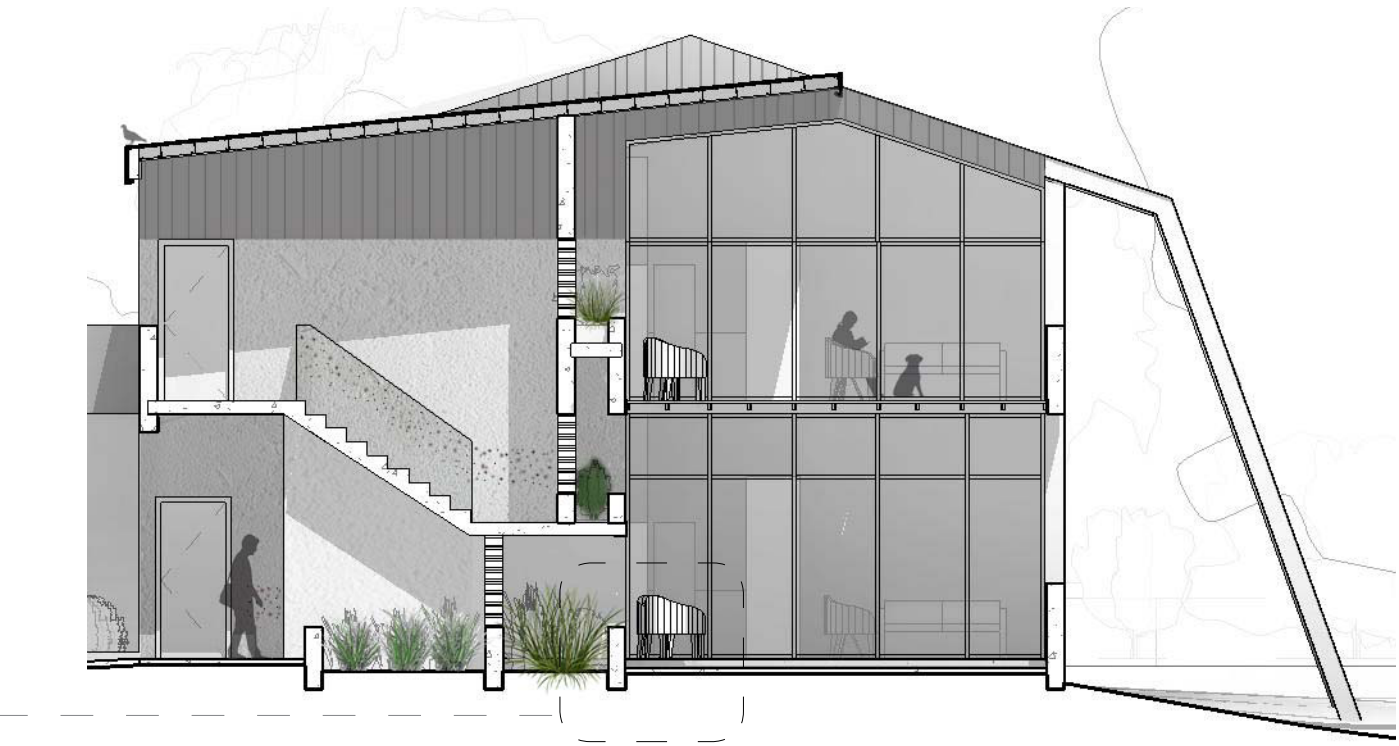
residence pathway





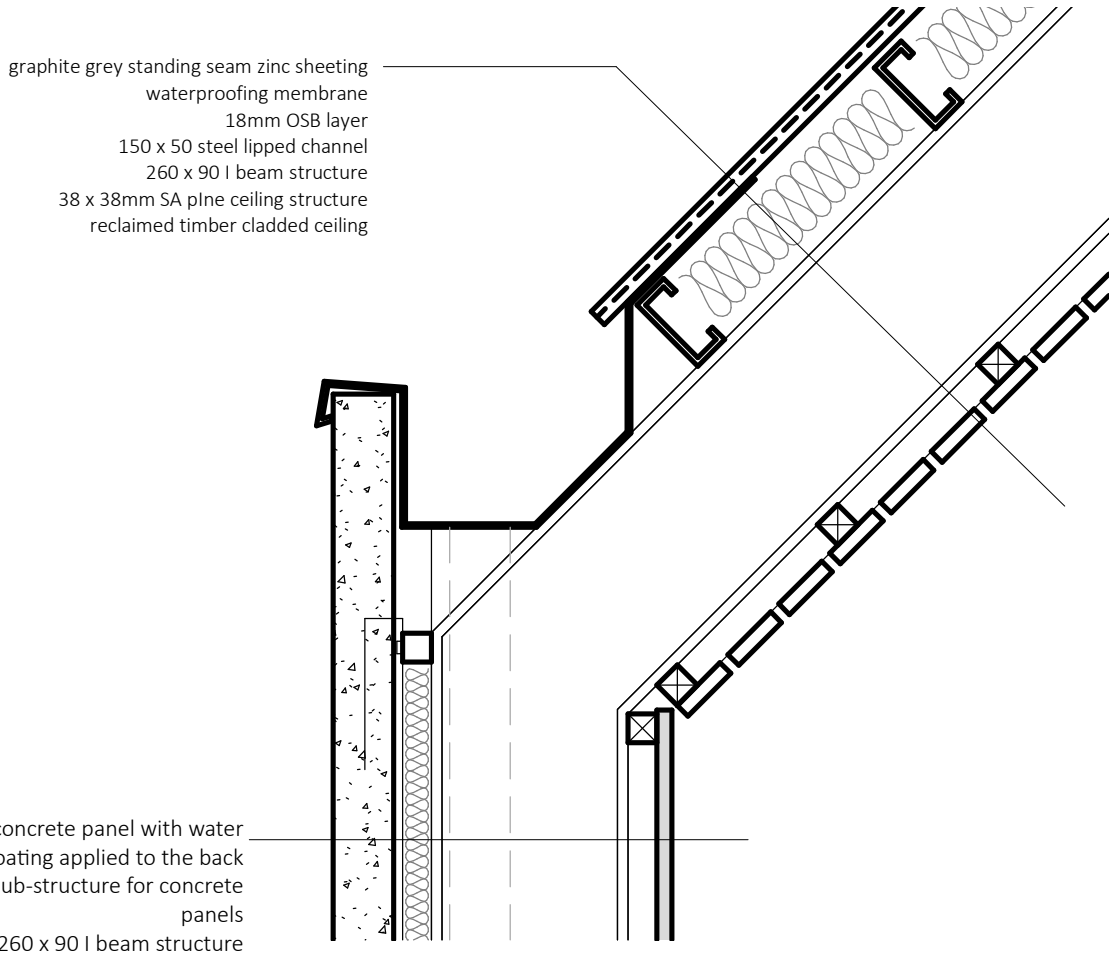
Detail 3: Courtyard Floor

0.2



Residence Circulation Section

2



Detail 1: Concrete Panel & Concealed Gutter

0.2



North Elevation

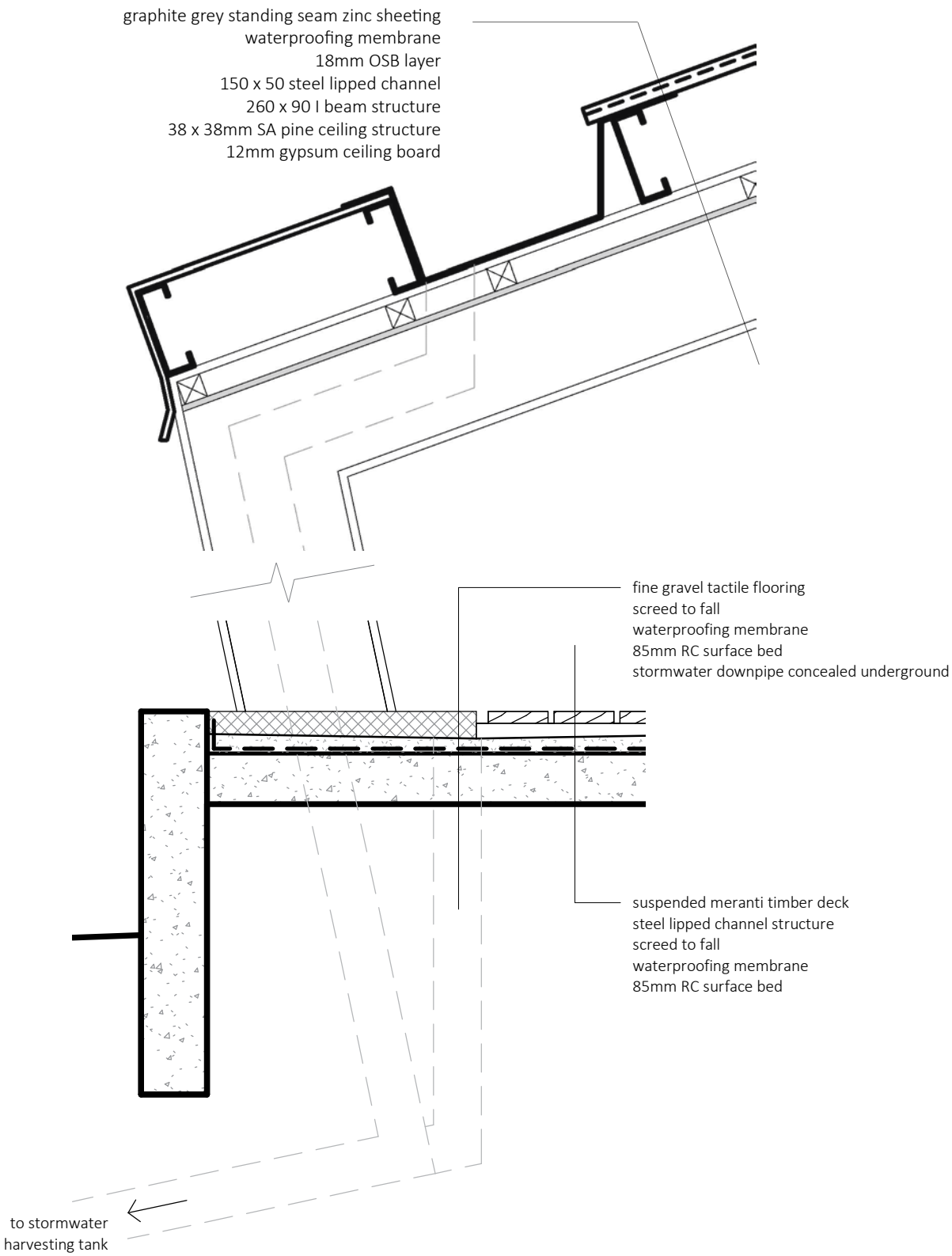
10



Library Section D

5





Detail 2: Cafe Exterior

0.2



Cafe Section

2

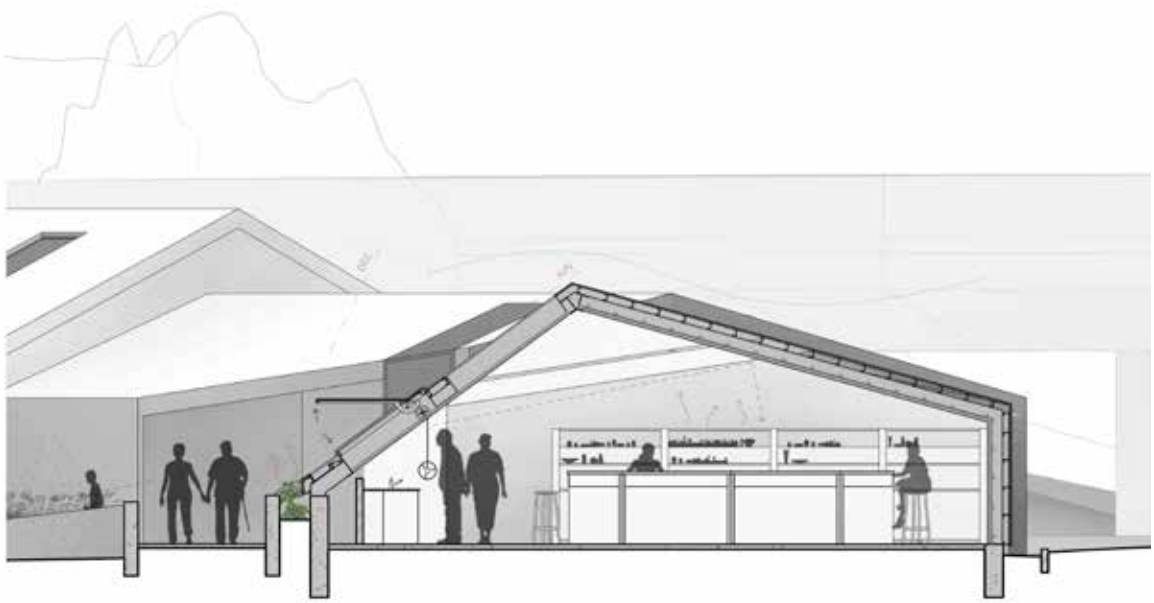


South Elevation 10



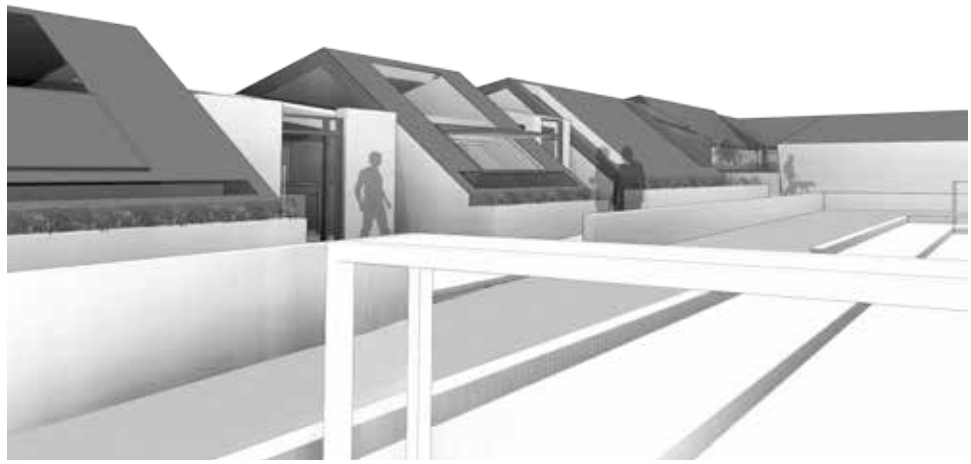
Section B 10

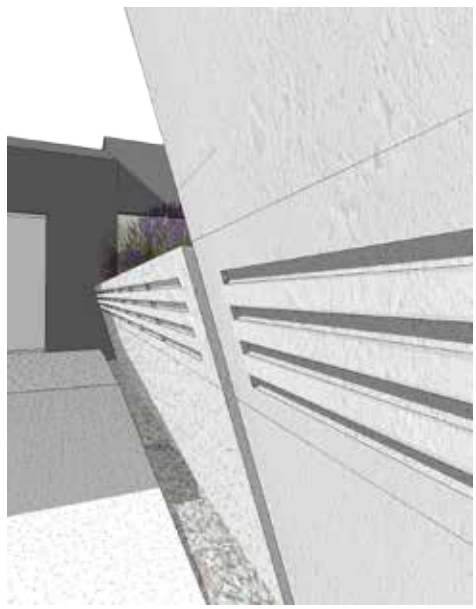
1 Public Park
2 Navigation Tower
3 Games Room
4 Goalball Field
5 Pottery Classroom



Pottery Classroom Section

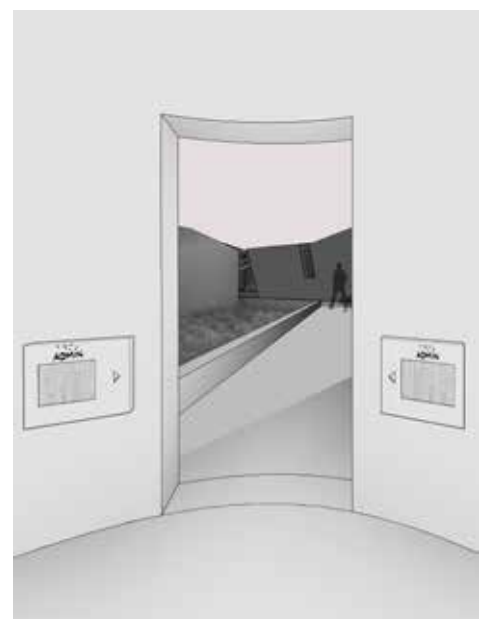
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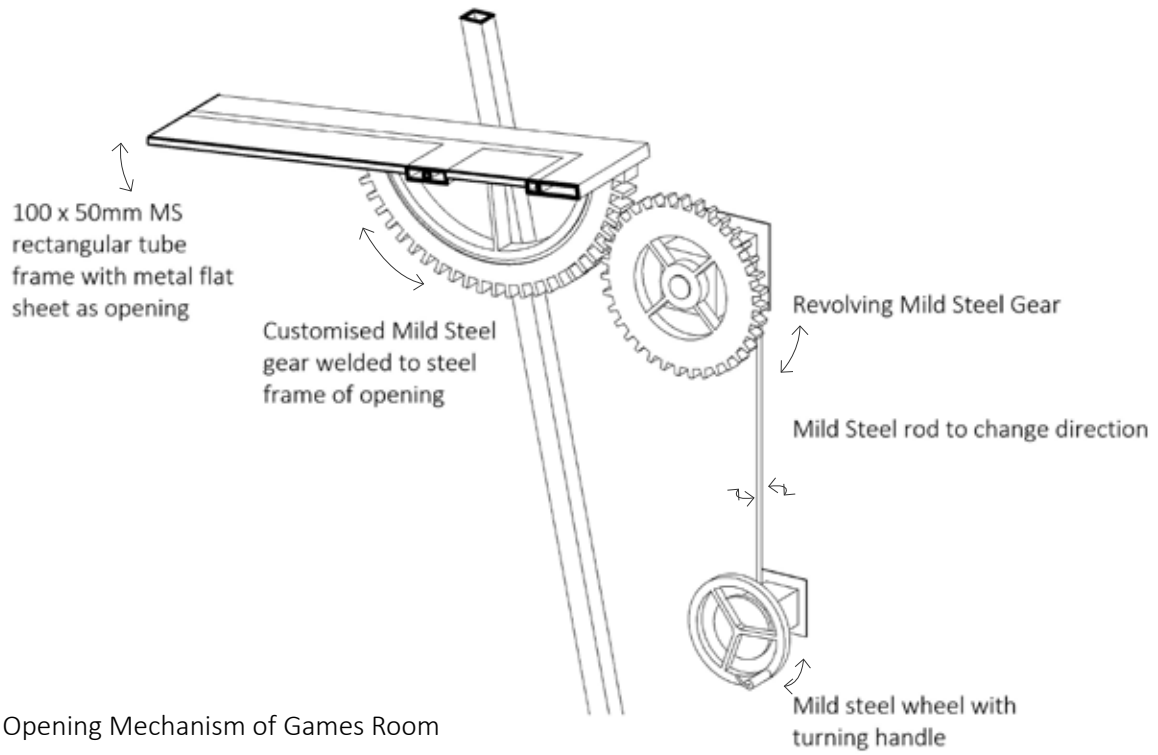






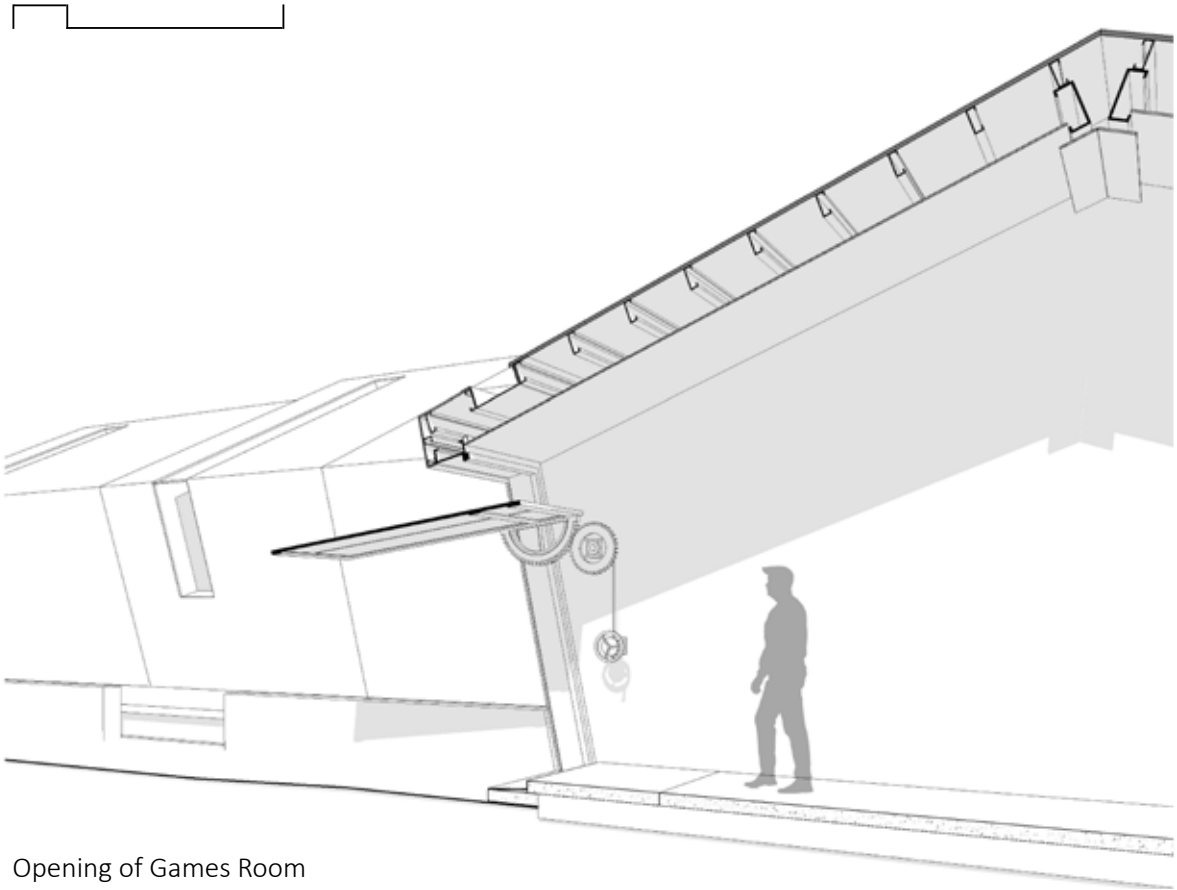




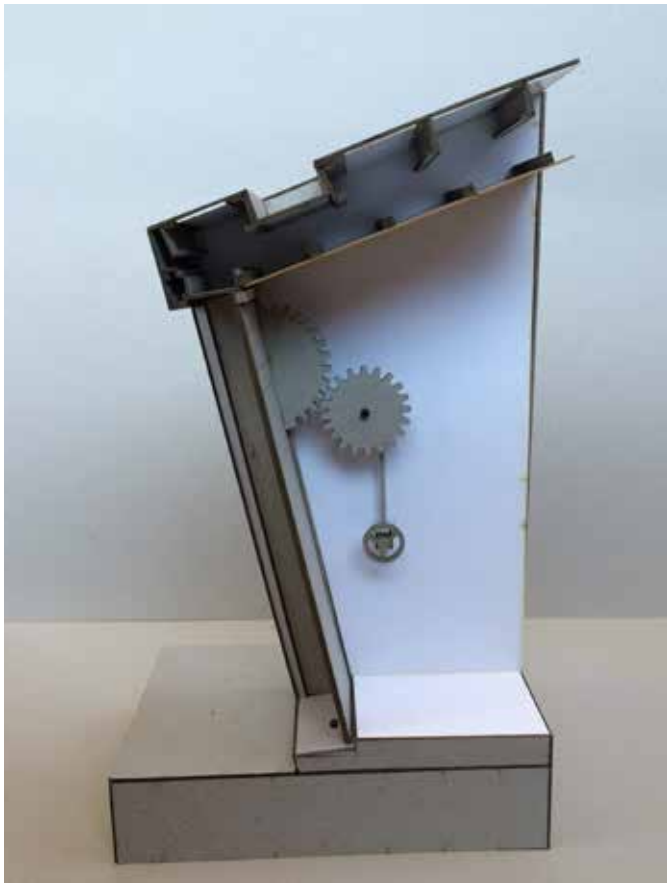


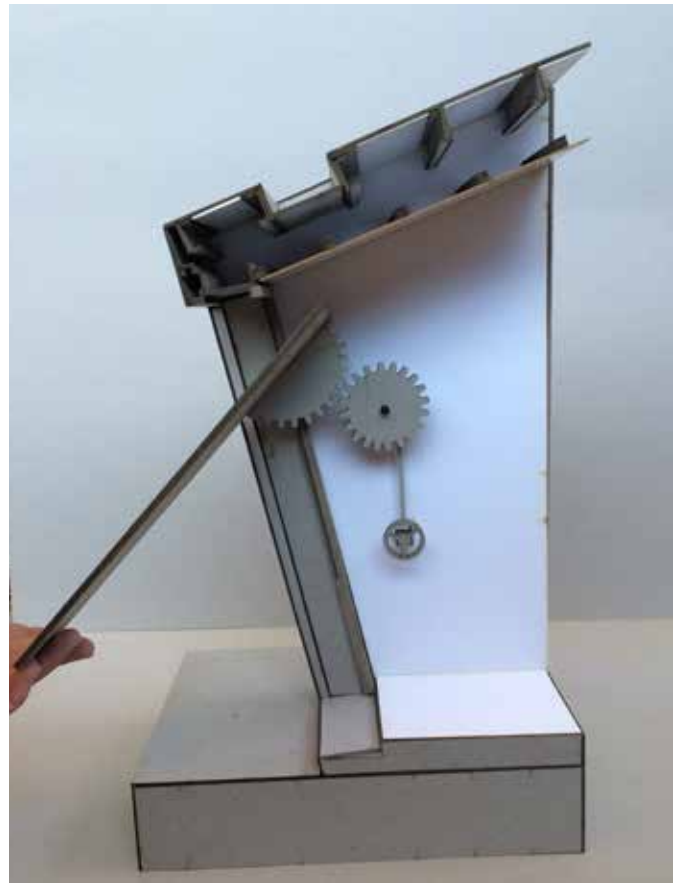
Opening Mechanism of Games Room

100mm 500mm



Opening of Games Room



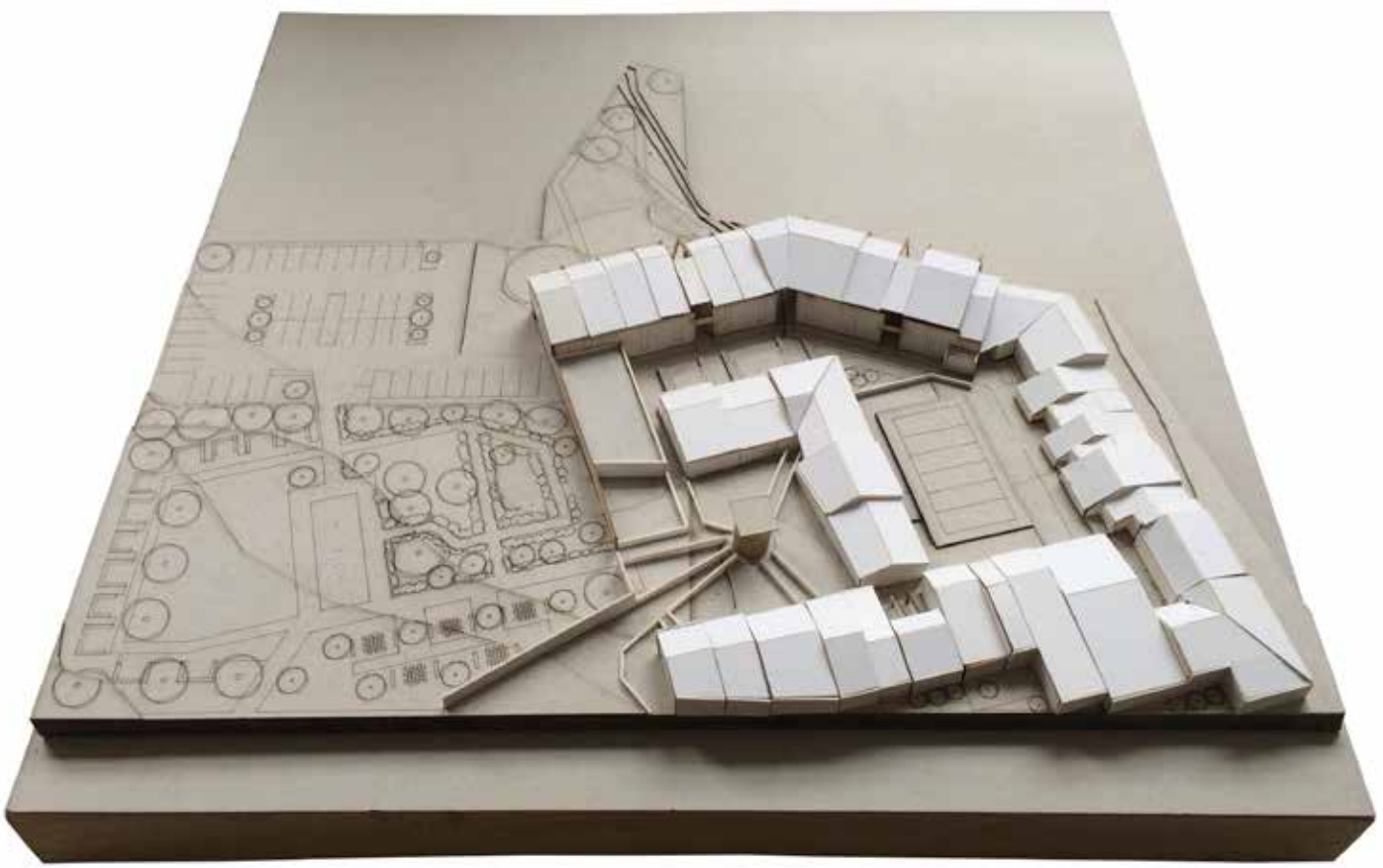






Reconciliation

a sensorial recovery centre
for the visually impaired






HB SOCIETY
OR THE BLIND

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visual imagery list

**Please note: all photographs, drawings and illustrations in this book are completed by the author, unless stated otherwise*

Part 1: Diagnosis

Fig 0.1: author's own, 2017

Fig 1.0: M. Peterson, n.d 'My Collages', Pinterest, obtained from https://za.pinterest.com/pin/809029520532910628/, accessed on 10 July 2018

Fig 1.1: unknown author, n.d, Pinterest, obtained from https://za.pinterest.com/pin/459015386993269817/?lp=true, accessed on 11 July 2018

Fig 1.2: unknown author, n.d, 'Drinking Vodka in Commercials Drinking Vodka in Real Life Meme', Me.Me, obtained from https://me.me/i/drinking-vodka-in-commercials-drinking-vodka-in-real-life-3263012, accessed on 20 September 2018

Fig 1.3: Sant'Elia, A., n.d, from 'Sant Elia's Words', Lebbeus Woods, obtained from https://lebbeuswoods.wordpress.com/2009/11/02/santelias-words/, accessed on 25 August 2018

Fig 1.4: author known as 'Wadu', n.d, 'Maison Citrohan', Future Houses: Genealogy, obtained from http://future-house-genealogy.blogspot.com/p/blog-page.html accessed on 25 August 2018

Fig 1.5: author unknown, 2008, 'Maison Citrohan', Edifice Complex, obtained from http://edificecomplex.tumblr.com/post/145624245887/thebeautifularchitectureobject-maison-citrohan accessed on 25 August 2018

Fig 1.6: unknown author, n.d, 'The 10+ Pathologies of Le Corbusier', Andrea Gibbons, obtained from http://writingcities.com/2015/11/18/le-corbusier-planning-the-city-of-tomorrow/ accessed on 25 August 2018

Fig 1.7: Malewski, P., 2006, 'Unite d'Habitation de Berlin Entrance', Wikipedia, obtained from https://en.wikipedia.org/wiki/File:Unit%C3%A9_d%27Habitation_de_Berlin_Front_Oct_2005_1349.jpg accessed on 25 August 2018

Fig 1.8: Rabbotteau, M., n.d, 'Art Nouveau', Pinterest board, obtained from https://za.pinterest.com/pin/476959416763356733/ accessed on 25 August 2018

Fig 1.9: Ainsworth, A., 2015, 'Brussels Art Nouveau Architecture', Alan John Ainsworth Photography, obtained from https://www.alanainsworthphotography.com/p337442025/h54BD5075#h54bd5075 accessed on 25 August 2018

Fig 1.10: Lyon, M., n.d, 'Step inside the first U.S. exhibition of Pierre Chareau, co-architect of the Maison de Verre', Archinect, obtained from https://archinect.com/news/article/149977308/step-inside-the-first-u-s-exhibition-of-pierre-chareau-co-architect-of-the-maison-de-verre accessed on 25 August 2018

Fig 1.11: author unknown, n.d., 'Schindler House Kings Road House' obtained from http://inkawall.com/editor/? accessed on 25 August 2018

Fig 1.12: author known as 'Fondation Le Corbusier/ADAGP', n.d., 'Maison de week-end, La Celle-Saint-Cloud, France, 1934', Fondation Le Corbusier, obtained from http://www.fondationlecorbusier.fr/corbuweb/morpheus.aspx?sysId=13&IrisObjectId=4882&sysLanguage=en-en&itemPos=28&itemCount=79&sysParentId=64&sysParentName= accessed on 25 August 2018

Fig 1.13: unknown author, 2010, 'at Paimio Tuberculosis Sanatorium', Larry Speck, obtained from http://larryspeck.com/2010/10/31/paimio-sanatorium/ accessed on 25 August 2018

Fig 1.14: Hautala, J., n.d, from Pallasmaa, J., 2012, 'Encounters 1', Rakennustieto Publishing, Finland

Fig 1.15: unknown author, n.d, Pictorem, obtained from http://www.pictorem.com/7256/Bokeh%20Out%20Of%20Focus%20Black%20White%20Background%20Light.html , accessed on 11 July 2018

Fig 1.16: 'gabipott', 2010, '21113', Photocase, obtained from https://www.photocase.com/photos/211133-hand-door-exceptional-whimsical-door-handle-bell-lisbon-photocase-stock-photo, accessed on 11 July 2018

Fig 1.17 author's sketch, 2017

Fig 1.18: photographer known as 'Nosha', not dated, Church, Flickr Hive Mind, obtained from https://hiveminer.com/Tags/church,%E5%AE%89%E8%97%A4%E5%BF%A0%E9%9B%84Interesting, accessed on 3 June 2017

Part 2: Learning & Recovery

Fig 2.0 author's photograph, 2017

Fig 2.1: J Wilson, 2012, 'Dame Evelyn Glennie: The First Lady of Percussion', David Aldridge's Drumming Blog, obtained from https://davidaldridge.wordpress.com/2012/04/09/evelyn-glennie-performs-prim-by-askell-masson-on-snare-drum/, accessed on 11 July 2018

Fig 2.2: J. Rojo, 2017, '1st Mural by the Blind and Sighted in Brooklyn: Rubin415 & John Bramblitt for World Sight Day', Brooklyn Street Art, obtained from http://www.brooklynstreetart.com/theblog/2017/09/30/1st-mural-by-the-blind-sighted-in-brooklyn-rubin415-john-bramblitt-for-world-sight-day/, accessed on 11 July 2018

Fig 2.3: unknown, n.d, 'Marla Runyan', La Belle Mente, obtained from https://labellamente.weebly.com/marla-runyan.html, accessed on 12 July 2018

Fig 2.4: P. Iyer, 2009, 'The Joy of Less', Pico Iyer Journeys, obtained from http://picoiyerjourneys.com/index.php/2009/06/the-joy-of-less/, accessed on 12 July 2018

Fig 2.5: authors own, 2015

Fig 2.6: authors own, 2014

Fig 2.7: author's own, 2016

Fig 2.8: author's own photo documentary, 2018

Fig 2.9: author's own sketches, 2018

Fig 2.9.1, 2.10- 2.11: author's own photo documentary, 2018

Fig 2.12: E. Grant, 'Cymatics patterns in water', Pinterest, obtained from https://za.pinterest.com/pin/84583299226885295/visual-search/?x=16&y=11&w=530&h=352, accessed on 20 February 2018

Fig 2.13, 2.14a & b: author's own, 2018

Fig 2.15- 2.16: author's own photographs, 2018

Fig 2.17- 2.18: author's own photographs, 2018

Fig 2.19: unknown author, n.d, 'Feel the Realness', The Muslim Vibe, obtained from https://themuslimvibe.com/muslim-lifestyle-matters/teens/feel-the-realness-part-one, accessed on 15 July 2018

Fig 2.20: unknown author, n.d, 'Goalball- General information', International Blind Sports Federation, obtained from http://www.ibsasport.org/sports/goalball/, accessed 26 August 2018

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Part 3: Rediscovery

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Fig 3.2- 3.4: author's own, 2018

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SCHOOL OF ARCHITECTURE AND PLANNING
HUMAN RESERCH ETHICS COMMITTEE

CLEARANCE CERTIFICATE
PROTOCOL NUMBER: SOAP04/04/2018

PROJECT TITLE:	Listen to see: a specialized centre for the visually impaired community
INVESTIGATOR/S:	Chi-Ann Chang (Student No: 593435)
SCHOOL:	Architecture and Planning
DEGREE PROGRAMME:	Masters of Architecture Professional (MArch Prof)
DATE CONSIDERED:	12 June 2018
EXPIRY DATE:	12 June 2019
DECISION OF THE COMMITTEE:	Approved

CHAIRPERSON _____
(Professor Daniel Irurah)

DATE: 18 – 06 – 2018

cc: Supervisor/s: Garret Gantner

DECLARATION OF INVESTIGATORS

I/We fully understand the conditions under which I am/we are authorized to carry out the abovementioned research and I/we guarantee to endure compliance with these conditions. Should any departure to be contemplated from the research procedure as approved I/we undertake to resubmit the protocol to the Committee.

_____ 25/06/2018
Signature **Date**

School of Architecture & Planning
University of the Witwatersrand
Private Bag 3 Wits 2050
Johannesburg South Africa
www.wits.ac.za

T +27 11 717 7623
F +27 11 717 7649