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## prologue

*At the end of 1825, Mziligazi arrived in a valley between the Magaliesberg and Dasppoortrand. The river that sustained them, was called Enzwabuhlungu or "river which hurts:" so named because of the action of its sharp dolomites on the bare feet of the woman drawing water from it. In the elbow of this river, the city of Pretoria evolved.*

*Ironically today the Apies River has reverted to being a "river that hurts". Somewhere along the line, as the pace of life quickened and the demands of transportation and a growing economy increased, the Apies were forgotten. The valley became a corridor and the river became the city's biggest drainage ditch.*

*The route of the Apies River not only determined the pattern of urban development in the inner city, but the river also creates continuity and enhances the legibility of the urban structure. In the same way, the river should be used to blend ecology and urbanity in order to create a living, stimulating and economically viable spine for the inner city. It should become a place of public engagement: where once developments turned their backs to the river, developments should front the river and embrace the river in its architecture, social and economic activities.*

*Throughout history, public space has formed the backdrop to public life, for commercial transactions, social exchange, entertainment and*

*contemplation. The Apies River must be rehabilitated to such a place that is filled with energy and a sense of enjoyment that is derived from spending time in such a lively public setting. It should become a place of enrichment to human lives.*

*The concept is to design an outdoor recreational equipment centre with speciality shops for mountain biking, kayaking and canoeing, hiking and climbing. This retail complex varies from conventional retail centres in that it is an interactive retail store. This implies that the equipment can be tried before purchasing it. The architecture and the extreme sport activities [climbing, the mountain bike track and the kayak and canoe channel] would be used as communicating devices for specific brands. A broad layout, study and analysis of the functions and systems in the design were carried out in the brief, baseline and technical documents, which serve as addenda to this final document. It is important to see these documents as part of the design development process, therefore ideas and concepts have evolved and developed into the final product.*

## reverberating architecture

*Whenever I am exposed to architecture that touches and engages with my inner experience, I stand in awe at the thought that it all originated with an architectural image a human being perceived, who then simply picked up a pencil, pen or even a stone and conveyed that creative image onto some sort of surface. This "image has touched the depths before it stirs the surface". [Bachelard 1964]*

*In his book, *The Poetics of Space*, Bachelard [1964] states that "for a poetic image (I call it the architectural image), there is no project; a flicker of the soul is all that is needed". Sadly today it seems as if architects' souls have died, for the "mainstream high-tech architects seek technical refinement" and the young blood of architecture look to procedural models with an emphasis on diagramming and mapping". [Van Schaik 2002] They see no need to engage with the inner experience of people, the ones they design for.*

*Bachelard asks how the new poetic image can react on minds other than that of the poet who coined it. For architects there is a bridge between the architectural image and built form to cross. There is a transformative process, from the architectural image to the built form, during which this architectural image has to be kept alive in order to engage with the inner experience of people. "Architecture has to find its way to a different form, with its own modulations, technics and ethics. Besides this there is a clash between the abstract, institutional knowledge and embedded human knowledge". [Van Schaik 2002]*

*Bachelard's answer lies in an in-depth look at the poetic image [1964]: "The poetic image is not subject to an inner thrust. It is not an echo of the past. On the contrary: through the brilliance of an image, the distant past resounds with echoes, and it is hard to know to what depth these echoes will reverberate and die away. Because of its novelty and its action, the poetic image has an entity and a dynamism of its own, it is referable to a direct ontology". He says that it is in reverberation that we find the real measure of the being of the poetic image. Therefore, in order to determine the being of the image, we shall have to experience its reverberation.*

*Bachelard [1964] refers to Minkowski's explanation of reverberation: "It is as though a well-spring existed in a sealed vase and its waves repeatedly echoing against the sides of this vase, filled it with their sonority. Or again it is as though the sound of a hunting horn, reverberating everywhere through its echo, made the tiniest leaf, the tiniest wisp of moss shudder in a common movement and transformed the whole forest, filling it to its limits, into a vibrating sonorous world..." Reverberating architecture is architecture where the being of that architectural image reverberates and is felt throughout the whole transformative process until its echoes engage with the inner experience of the onlooker. These reverberations might impact the onlooker in such a way that it provokes a new architectural image within him or her.*

*Contemplating Reverberating Architecture...*

*Reverberating architecture exists through the echoes of its creative or architectural image. As Minkowski explained: it is the sound, not the hunting horn itself, which make the tiniest leaf and tiniest wisp of moss shudder and through it transforms the whole forest. Although the echoes are dependent on the creative image, the full power of reverberating architecture does not rely only on the image but rather on the dialogue between image and concept, visuality and tactility, artistic invention and tectonic acts.*

*The architecture of today, like our culture, aspires to power and domination and this has led to the quest for a powerful image and impact. In his essay, *Hapticity and Time*, Juhani Pallasmaa [1999] states that this kind of architecture “desires to impress through an outstanding singular image and consistent articulation of form”. It attempts to “conquer the foreground instead of creating a supportive*

*background for human activities and perceptions". It is architecture that dominates our sense of vision; even our culture today makes us visionary beings: the high-tech media do not allow us to perceive the world with our whole being, but deprive us of a multi-sensory experience.*

*However, "Every significant experience of architecture is multi-sensory; qualities of matter, space and scale are measured by the eye, ear, nose, skin, tongue, skeleton and muscle". [Pallasmaa 1999]*

*What the architects of today do not know is that we need multi-sensory experiences. One cannot isolate or stimulate only one of the senses. Flat surfaces and materials as well as the elimination of micro-climatic differences reinforce uniformity of experience. The tendency of our technological culture to standardise environmental conditions and make the environment entirely predictable is causing a serious sensory impoverishment. We perceive with our whole beings: an experience speaks to all our senses at once. All the senses, including vision, are extensions of the sense of touch. Pallasmaa states that it is medically proved that senses are specialisations of the skin and that all sensory experiences are related to tactility. Francis D.K. Ching [1996] confirms this: "...our senses of touch and sight are closely intertwined. As our eyes read the visual texture of a surface, we often respond to its apparent tactile quality without*

*actually touching it. The visual texture prompts memories of past experiences. We base these physical reactions on the textural qualities of similar materials we have experienced in the past". Touch is the sensory mode, which integrates our experience of the world and of ourselves.*

*Pallasmaa [1999] states that the task of architecture is to make visible how the world touches us. Architecture concretises and frames human existence in the flesh of the world. In his view, genuine architectural works evoke tactile sensations that enhance our experience of ourselves. Our culture of control and speed has favoured the architecture of the eye, with its instantaneous imagery and distant impact, whereas haptic architecture promotes slowness and intimacy, appreciated and comprehended gradually as images of body and the skin.*

*Just as the sound of the hunting horn engages the whole forest with its echoes, reverberating architecture engages and unites, whilst architecture of the eye (as Pallasmaa calls it) detaches and controls, it places us in the present tense. Reverberating architecture seeks to accommodate rather than impress, evoke comfort rather than admiration and awe.*

*In his creative act, the architect himself is stirred by a tactile experi-*



*ence from which the creative image is born. Gaston Bachelard [1964] makes a distinction between "formal imagination" and "material imagination". He considers that images arising from material imagination evoke unconscious images and emotions, whilst modernity at large has been primarily concerned with form. Although, in reverberating architecture, form is not considered to be unimportant, it rather develops from experiential situations towards an architectural form. As drawings, these images might appear vague, fragmentary or incomplete and not formalistic, as the design aims to bring out the reverberations of the architect's experience in the material and construction of the building. As Pallasmaa says, "... the visual image of a door is not an architectural image, for instance, whereas entering and exiting through a door are architectural experiences. Similarly, the window frame is not an architectural unit, whereas looking through the window or daylight coming through it, are authentic architectural encounters".*

*In describing this architecture as one which does not seek a powerful image and impact, it might be perceived as weak or fragile, without a strong structure and image. I think it is more an architecture that desires not to impress through an outstanding singular image and articulation of form, but rather one that is responsive and contextual and concerned with sensory interaction. "This architecture grows and opens up, instead of the reverse process of closing down from*

*concept to detail". [Pallasmaa 1999]*

*This kind of architecture reminds me of the power of a weak force in nature. According to an article in Science News, 21 January 1995, none of the man-made metals or high-strength fibers of today can even come close to the combined strength and energy-absorbing elasticity of a spider dragline. The line spun by the spider is five times stronger than steel and a web resembling a normal fishing net in its thickness of thread and the scale of the mesh could catch a passenger plane in flight,*

*" This is the strength of weakness; that strength which art and architecture are capable of producing precisely when they adopt a posture that is not aggressive and dominating, but tangential and weak". [Pallasmaa 1999]*

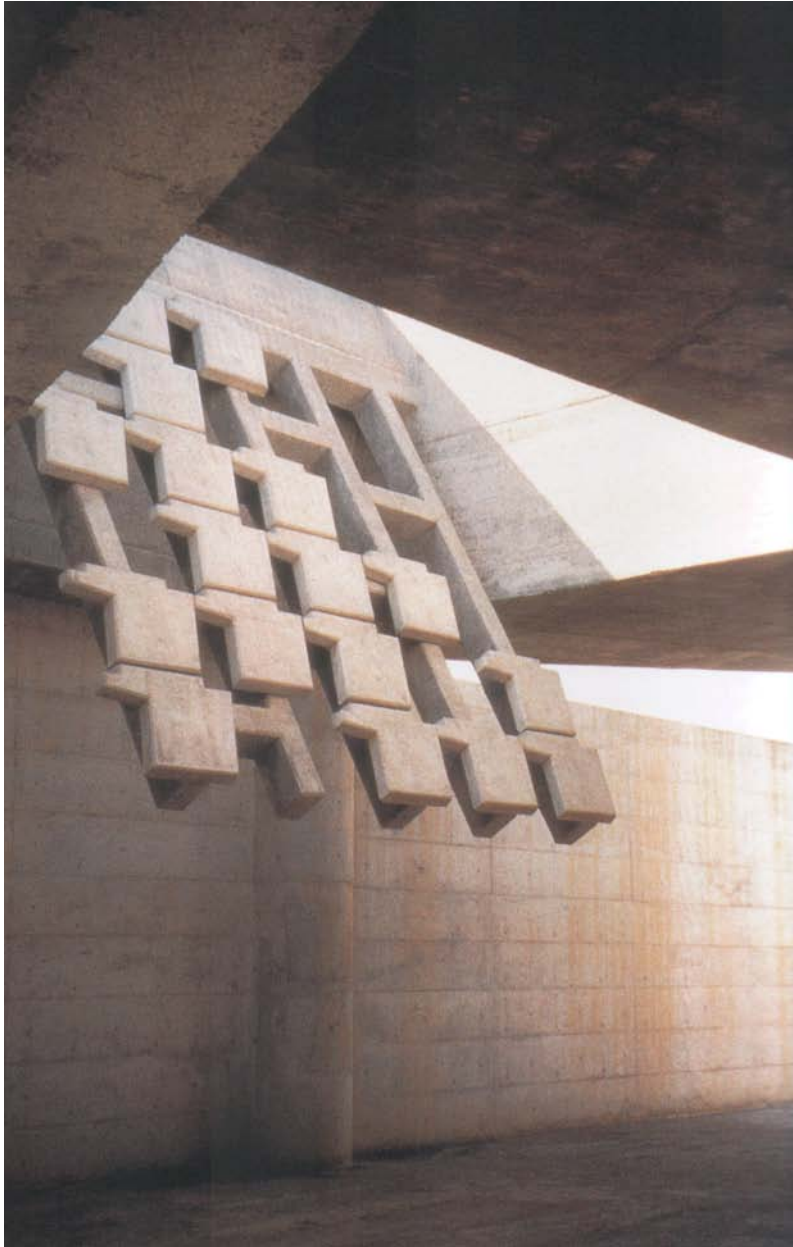


fig. 001 Igualada cemetery [Enric Miralles]

## the scene

*A once vibrant sport and social club, Berea Park tennis club now lies dormant. Situated on the corner of Willow Street and Nelson Mandela Drive. Van der Walt Street and Clara Street form the northern and western boundaries respectively. The Apies River Forms the eastern boundary.*

*The site lies on the city edge and is the connection point between the northern urban activities and the southern natural activities.*



fig. 002 site photo from the south



fig. 003 aerial photo of Pretoria inner city

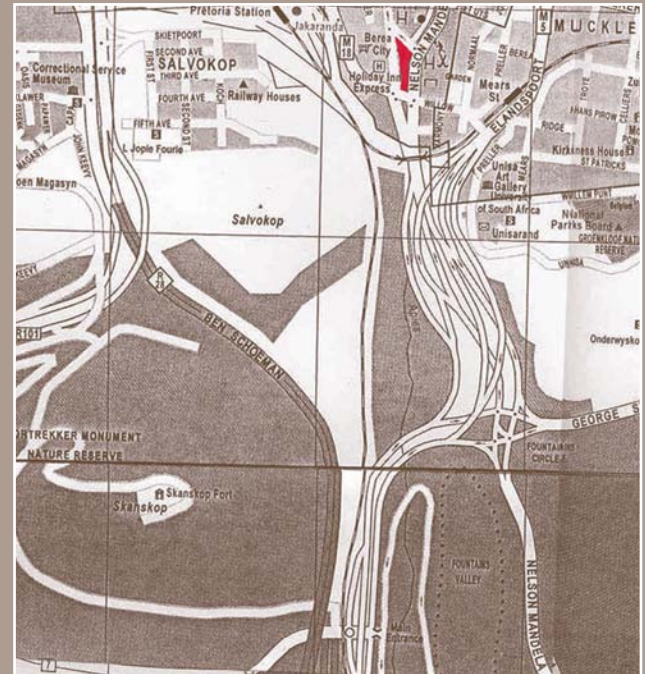


fig. 004 map of Pretoria inner city



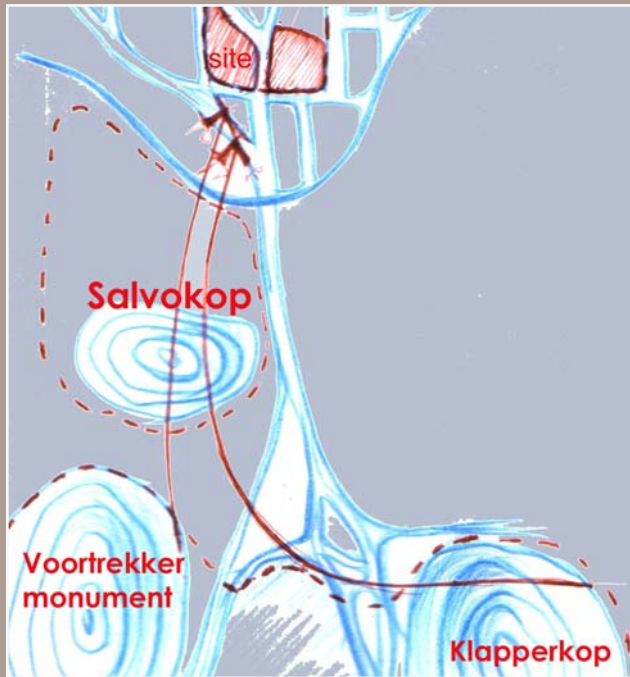


fig. 005 diagrammatic sketch of the city edge

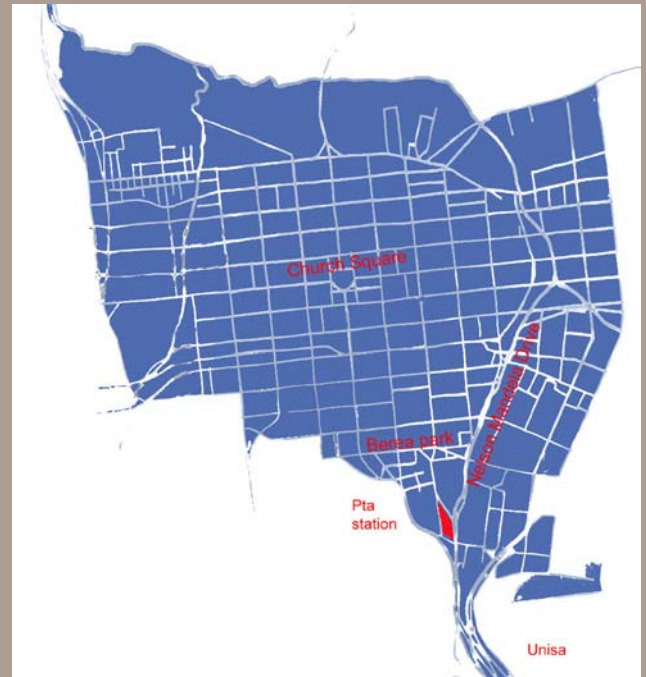


fig. 006 Pretoria inner city

## concepts

*The site offers the opportunity to become a generator of movement. Connecting the urban pedestrian and cycling routes with the natural routes located on Salvokop, Voortrekker Monument, Fort Skanskop and Fort Klapperekop. The idea is not to create a setting where the presence of the city is lost or ignored, but rather to create a lively public setting in the heart of the city.*

*Buildings are fragmented and elongated on the north-south axis to allow for the filtration of public movement, either passing by or lingering through the site. It also serves to counteract the fast moving N-S spine of Nelson Mandela Drive adjacent to the site. The site clips onto the green belt leading to the Fountains Valley and the idea is that it becomes a destination point on this green belt route.*

*Models were used to explore with the pedestrian movement on site, the fragmentation of the buildings and the spaces that evolved due to the fragmentation.*





fig. 007 concept sketch

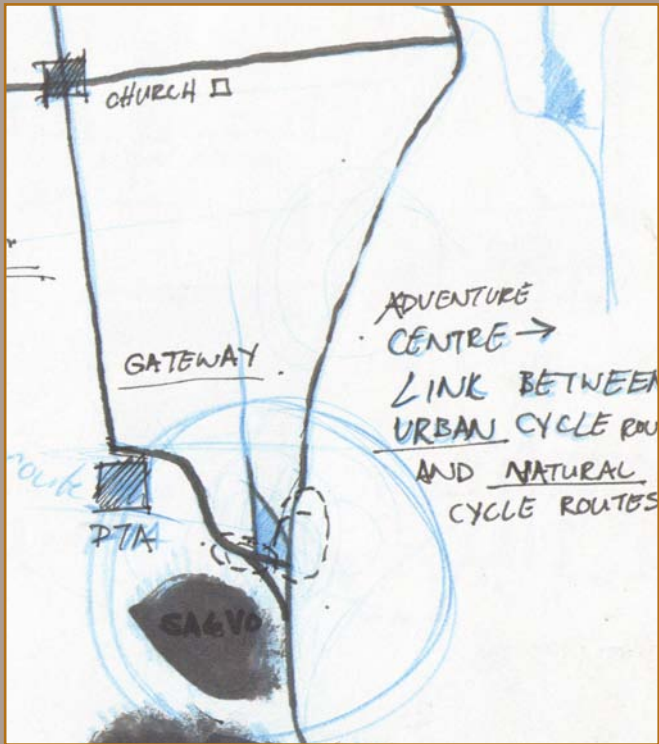


fig. 008

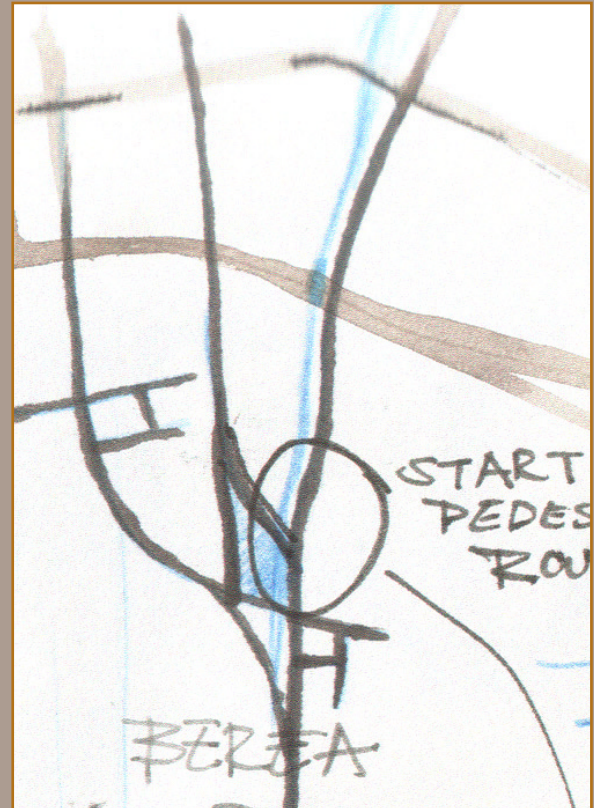


fig. 009

fig. 008, 009, 010, 011 Concept sketches of the development of pedestrian and cycling routes.



fig. 010

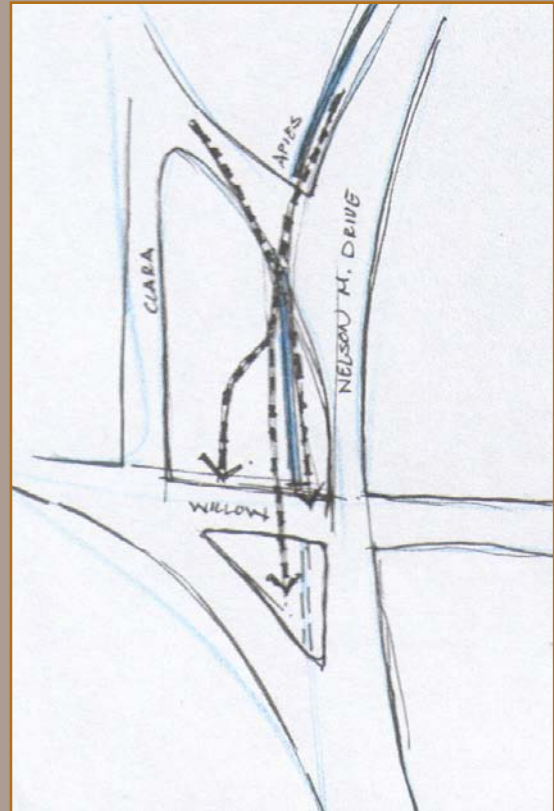


fig. 011

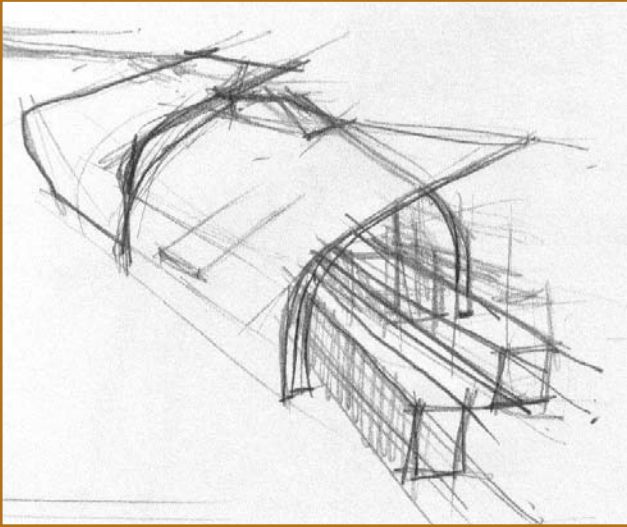


fig. 012 concept sketch of unfolding planes

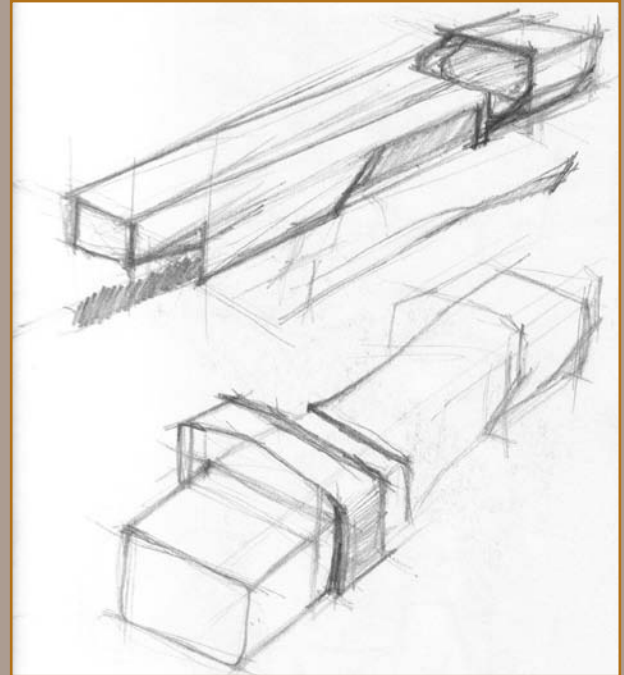


fig. 013 concept sketch of forms



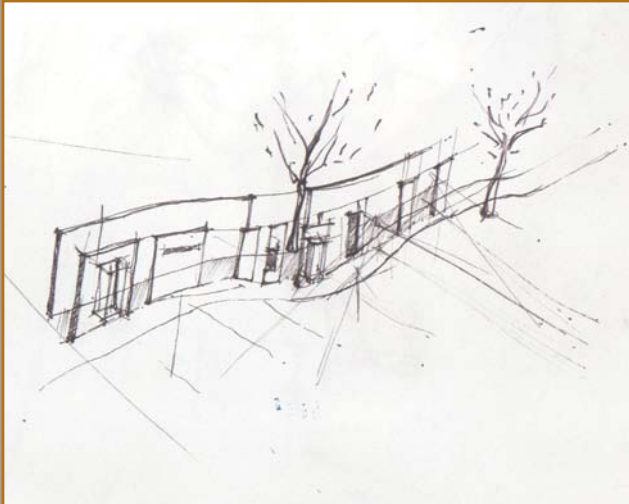


fig. 014 concept sketch of the exhibition wall

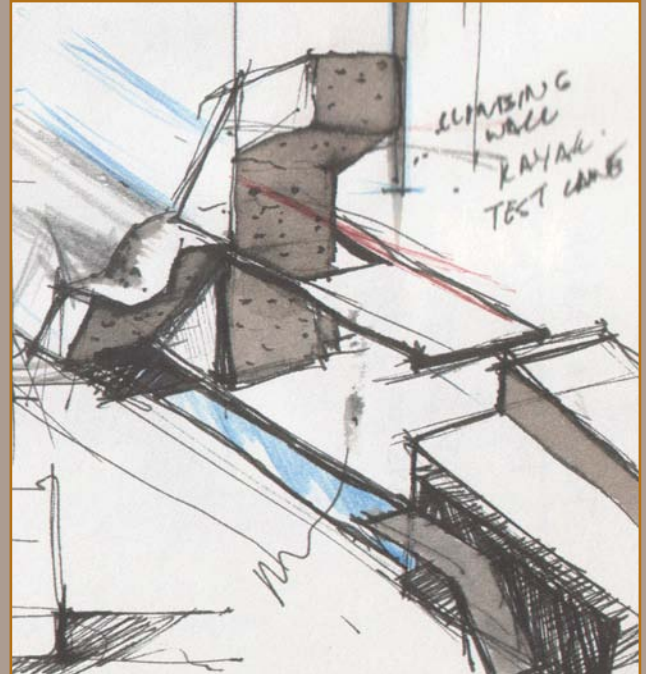


fig. 015 concept sketch of the climbing wall

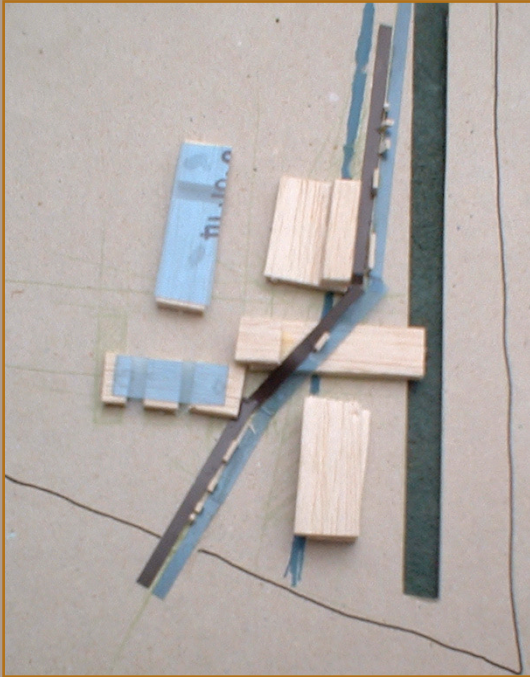


fig. 016 concept model

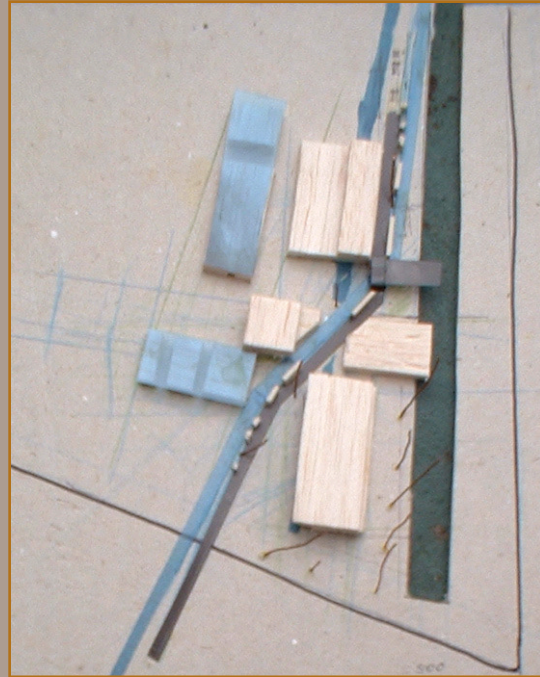


fig. 017 concept model

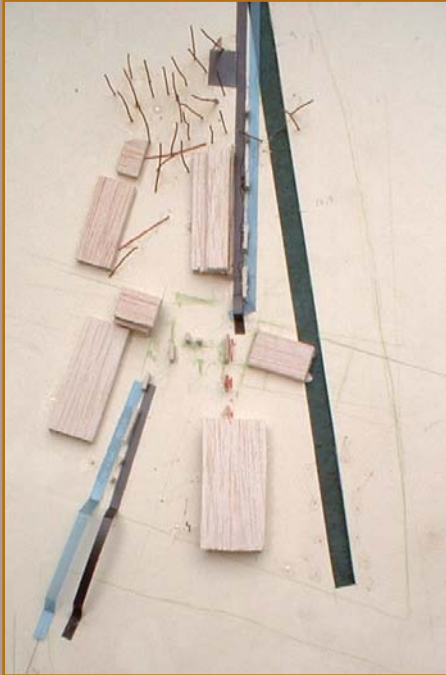


fig. 018 concept model

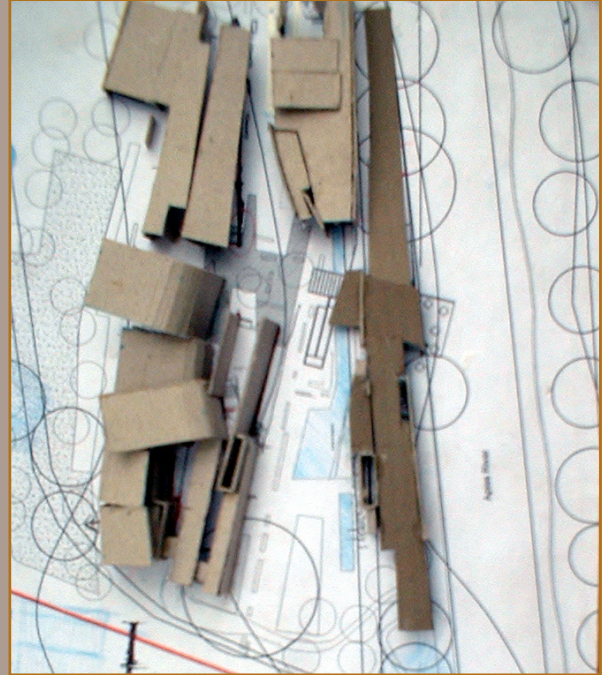


fig. 019 concept model

## conceiving a creative image

*Kengo Kuma once wrote [JA, 2000]: "A rainbow is not an actual object, and that is what makes it attractive. A certain relationship established between particles of water vapor, the sun and the observer (i.e. the subject) generates the phenomenon we call a rainbow..." I like to believe that the creative or architectural image a designer constructs in the mind is also a phenomenon that is created due to a certain relationship established between imagination, sensory experiences and the designer himself. This image is dependent upon that relationship and cannot exist without it. The image alters due to the influences on these three variables in the relationship. Imagination is influenced by the designer's inspiration and embedded human knowledge that, in its turn, is influenced by the designer's experience of the world around him or her. Sensory experiences are influenced by the designer's ability to use the senses. Lastly his or her design philosophy and outlook on life influence the designer. To study or describe the process, by which a creative image is conceived, is thus an intricate and complex act. Pallasmaa says, "...in creative work, the scientist and the artist are directly engaged with their body and it is an existential experience rather than an external logistic problem".*

*"... when you look at a wall spotted with stains, you may discover a resemblance to various landscapes, beautified with mountains, rivers, rocks, trees...Or again you may see battles and figures in action, or strange faces and costumes and an endless variety of objects which you could reduce to complete and well-known forms. And these appear on such walls confusedly, like the sound of bells in whose jangle you may find any name or word you choose to imagine."- [Leonardo da Vinci.]*

*To explain how the "image-making" power of a designer works, one has to study the threefold nature of the person. According to C. Larkin [1921] a person consists of body, soul and spirit or what Paul calls the carnal [1 Cor. 3:1-3], the natural [1 Cor. 2:14] and the Spiritual parts [1 Cor. 3:1] of the human being.*

*In the outer circle the body is touching the material world through the five senses of sight, smell, touch, hearing and taste. The gates to the soul are imagination, conscience, memory, reason and affections. The spirit receives impressions and material images through the soul.*

*We see from this concept that the designer needs sensory experiences, be it bodily senses, or sensory experiences of the mind and spirit, for example a sense of place, space and form, culture and spiritual power, to be in touch with the material world.*



## response

*Motion through space. Space that is defined by architecture that reveals poetry and a greater being within me. These were images and thoughts that stirred me.*

*I remember the first image that came to my mind: that of a mountain biker racing through the heart of a building, playing with the emotions of the visitors in the building and setting the boundaries of the spaces. Images of climbers moving over and under buildings washed over me and as they climbed, space, walls and architecture formed in my mind.*

*A precarious balance was needed between the architecture and the extreme sports existing within the*

*architecture. Therefore a language was developed where architecture not only responded to the site, but also to the movement happening in and around the site.*

*The buildings were fragmented on site to allow for this movement to happen and in this process of fragmentation quiet, more serene spaces evolved.*

*Perfect examples of this balance are the climbing walls that exist over and around the retail programme. The climbing walls open up towards the north and under them the mountain bike centre extrudes itself into existence.*

*Throughout the history of humankind one finds that creativity was usually related to or originated from a higher deity or spiritual realm. To substantiate this I will explain the philosophy of the arts of three ancient civilizations, as outlined by Todd Farley [2002].*

*Egyptian art was a manifestation of power and strength. The artists were seen as magicians, manipulators of powers and the forces of the cosmos. They would draw pictures of wheat or of a bird to capture part of the power that was being drawn or sculpted. The magic of their art was to make and capture the essence of God, to capture the communications of their gods. "Art was used to capture and make the gods submit to the magician who is manipulating the power of the gods; it was used to capture the essence of life and then use that to give prolonged life to an individual. It was also used to capture the essence of death and bring death to an individual ". [Farley 2002]*

*The Graeco-Roman philosophy of art is based on the concept of Mimesis. Mimesis means a copy of life. It is not an expression of life, but rather a reflection of life. They believed that a created object must be less than its creator; therefore if the creator is real, then the created object must be less, in other words less than real.*

*We as the created objects are the game of the gods. We are the actors on the stage of life and the gods manipulate us as the story unfolds. As Caesar Augustus said on his deathbed: "Dismiss me from the stage of life if I have played my mime well. Dismiss me with applause". [Farley 2002] Creativity in this civilisation was used to teach people moral truths, to help provide a culture; an identity.*

*The Hebrew-Christian use of art strongly contrasts with the Egyptian or Graeco-Roman. They viewed art as an expression of life. It was not life itself, but an expression of who we are and what we are in God. Here creativity was an expression of human emotion and feeling. Creativity is given life and vitality by the emotion's vitality. As we see in Ecclesiastes 3:3-4: There is "...a time to weep, a time to laugh, a time to mourn and a time to dance...". Dance is used as the opposite of mourn, to express joy. The internal joy was expressed or manifested through the external manifestation of dance. Physical gestures were used to communicate that emotion which was inside.*

*In the of understanding the psychology of the creative unconscious it became clear to me that in order to be creative one has to acknowledge or engage with the Creator.*

## response

*The spirited work of Mecanoo and the theme of duality between carved and constructed space in the works of Enric Miralles inspired my design thinking. The buildings on the edge of the Apies River were designed to receive passers-by. In this process carved and constructed space were played off against each other to form this intricate eastern wing of the design. The eastern façade of the Kayak centre simply folds away to form viewpoints and seating for passers-by and the northern restaurant wall carves into the rising walkway to form private space along the Apies.*

*The roofs of the buildings become secondary in order to emphasise the walls and the strong, clear language of the plan. This may have been unconsciously influenced by*

*the phenomenon in extreme sports where the vertical plane is always the defying force.*



fig. 020 faculty of economics and management [Mecanoo]



fig. 021 Igualada cemetery [Enric Miralles]

## **sam's story**

*" I am not a stranger to hard times, but for these I'll come back anytime..."*

*On the streets you become part of the system, a loss to society, but after POPUP took me in and enrolled me in the youth programs at that new adventure centre down the street, I can pick up my head again, feel proud about myself..."*



fig. 022 petzl catalogue [1999]

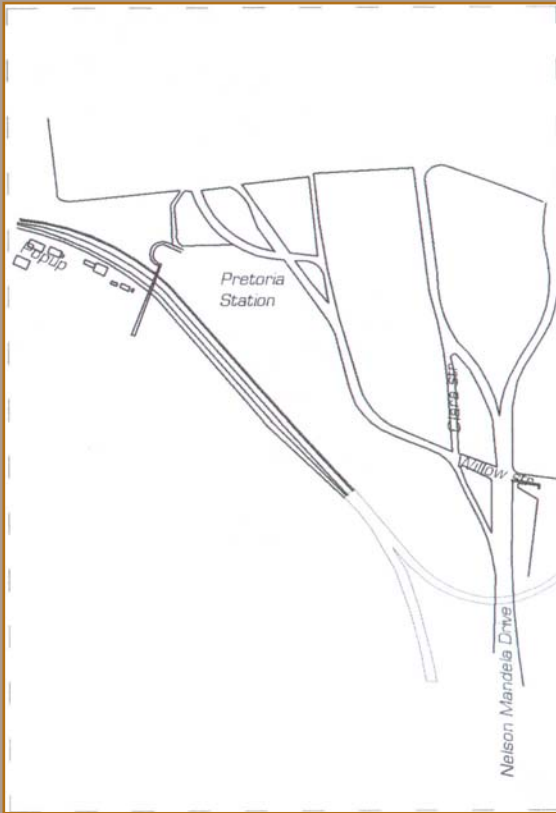


fig. 023 plan of Pretoria station and surroundings

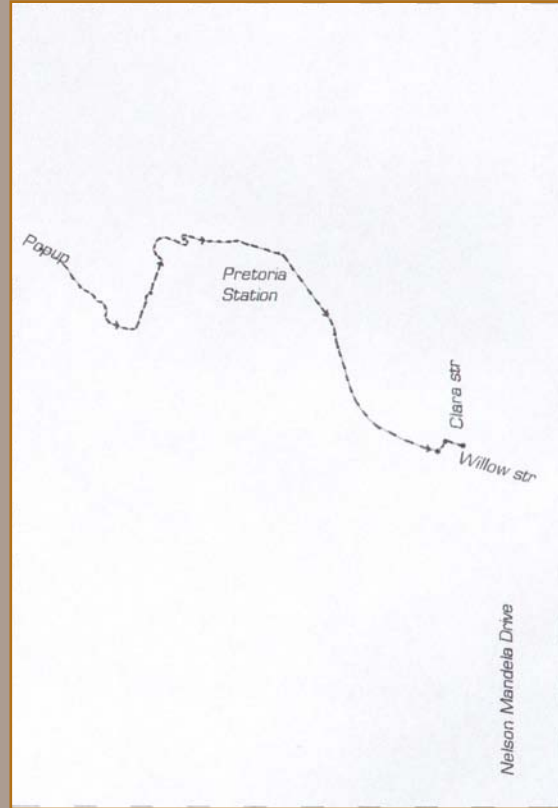


fig. 024 Sam's route from PopUp to the site



fig. 025 petzl catalodue [1999]

▫ *the blind square*

▫ *the electric maize*

▫ *high rope activities*

▫ *basic skills of*

*mountain biking*

▫ *climbing and rope techniques*

▫ *paddling*

## the perceptual realm

*“All types of vertical sports have a link with childhood. Because the memories of the games of skill we played high above the ground are among our deepest original memories. The memory of our first poised, self-confident actions. The memory of the pleasures and fears we experienced with those first challenges. We all have at one time, climbed higher than we would have even dared to imagine. We have all, at one time, cried for joy, filled with complex emotions, but in a single unrestricted moment of clarity, certain that we are experiencing something unique” [Petzl catalogue 1999]*

### *The sensory world*

*The sensory world consists of the ever-changing events or stimuli that surround us and the responses that we make to them. It is characterised by a fluctuating array of lights, colours, shapes, sounds, smells, tastes and touch sensations. We thrive in this sensory world; it is a world of sensation and perception, where sensation is the means by which sensory information is relayed to the brain and perception is the way in which we experience our sensory world.*

*Perception is dependent on our arousal or alertness, on our attention to incoming stimulation and on our ability to extract information from stimulation.*



## response

*Tactile architecture has a physical relationship with the observer. One has to be able to reach, to touch, to see through and stir up childhood memories. In this sense there is a definite parallel between tactile architecture and extreme sports where one is exposed as a human being and the sensory world is stretched to the limit.*

*In the design these extreme activities are employed to further enhance the sensory experience of visitors, where they are faced with sounds, motions and even their own fears, while doing their shopping.*

*Another parallel has been drawn between what one experiences in nature, or the imperfections of the real, and the landscape. The activity systems are used to strengthen the concept of an exterior and interior system that intertwines. The idea is that these systems*

*simply run through the buildings, changing old and setting new boundaries, while the retail programme evolves around them. All the roof drainage is sloped towards purpose made concrete spouts and water spills off into a spill basin. In the kayak centre, runoff water is sloped towards 500Ø fiber cement drainage pipes, that are utilized as down pipes, and water is drained internally in the kayak water channel.*

*Vegetation is used to bring life, softness and seasonal rhythm into the urban surroundings. All alien vegetation is eradicated and replaced with vegetation from the Rocky Highveld grassland biome and the Savannah biome to enhance this parallel. For this reason a strip of Red Autumn Grass runs along the two main pedestrian entrance routes. At the southern pedestrian entrance a sloped grass bank has been constructed to serve as a viewpoint. All access*

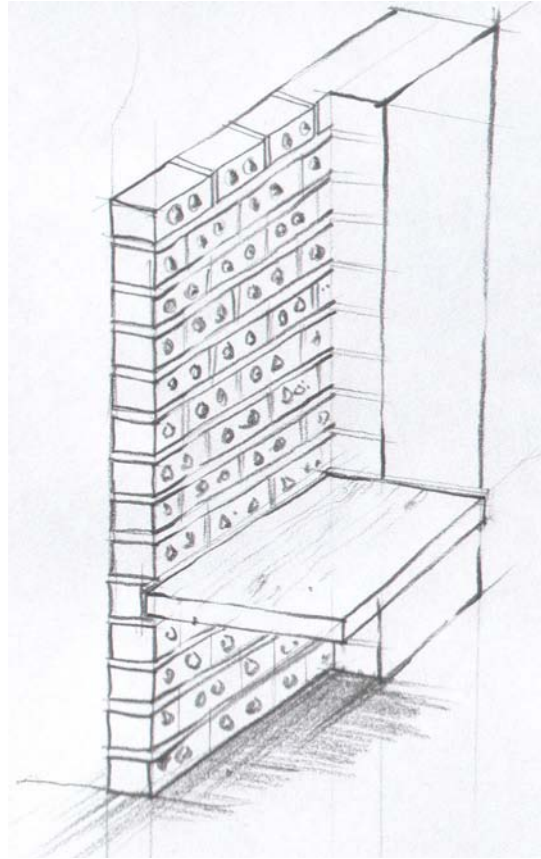


fig. 026 concept sketch of landscape seating

points to the site lead to a central square, therefore meticulous care has been taken with the surface. Face bricks are used as pavers and the extruded holes are planted with groundcover. Areas between the pavers are filled with fine gravel. This pattern sometimes extends into a building; this was carefully done to connect these spaces with the central square space. Three areas of woodlands are established. In two of the woodlands elevated mountain bike tracks are constructed while the third is employed as the parking area with no definite ordered parking system, covered with gravel. This area will be minimally maintained in order to establish and keep the natural woodland.

The exhibition wall not only serves as a connection spine into the site, but is also simultaneously employed as an information system to inform

passers-by and visitors of the rich heritage of the site and of extreme sports. Some of the concrete display panels fold horizontally to become seating.

The fenestration was specifically designed to frame and direct views. Alternative means of light entry were also employed in the design to ensure enough natural light in the retail spaces and the horizontal strips cast into the concrete climbing walls not only ensure the penetration of natural light, but also create shadow patterns on the ground. Minimised fenestration on the eastern and western facades prevents excessive solar heat gain. Conventional façade treatments of retail buildings have a high percentage of glazing ratio, however the nature of this retail complex has a high level of outdoor activities which enable the products to be displayed in this

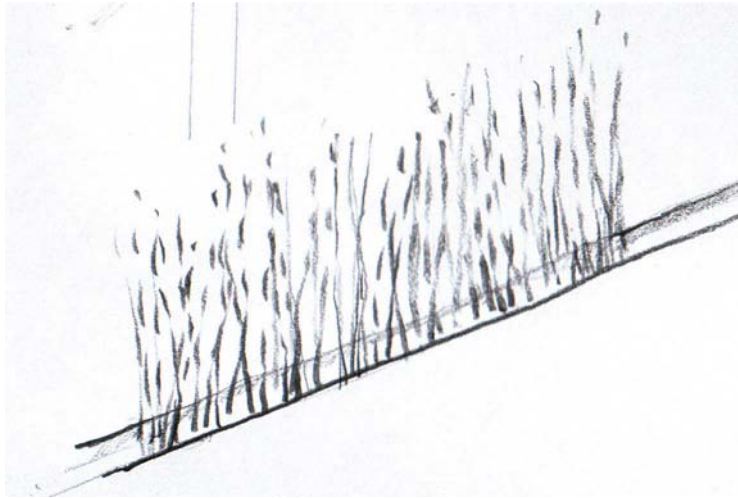


fig. 027 concept sketch of roofgrass strip

*manner.*

*What is also crucial in this exposition is the way the design is represented and perceived; the way it is expressed in this document. For this is inevitably part of architecture. The way my creative images are expressed strengthens the reverberations not merely keeping them alive. By employing a narrative it is hoped that the meaning of architecture and not only its appearance is expressed.*

## hiking and climbing centre

*"Motion. Space. All my energy focussed on one movement. Everything flowed together perfectly as far as this crucial move of the pitch. The moment becomes a whole universe. There is the wall, the perspective of rock. The flight of my vision as it passes over the rope in a hundredth of a second, the last protection far below me. And then, there is the move. The very action of making this move and the precision of motion in space. All thought of strength or difficulty forgotten. I lock onto the hold. I didn't know that such a perfect moment could exist."*  
*[extracted from the Petzl catalogue, 1999]*



fig. 028 beal catalogue [2003]

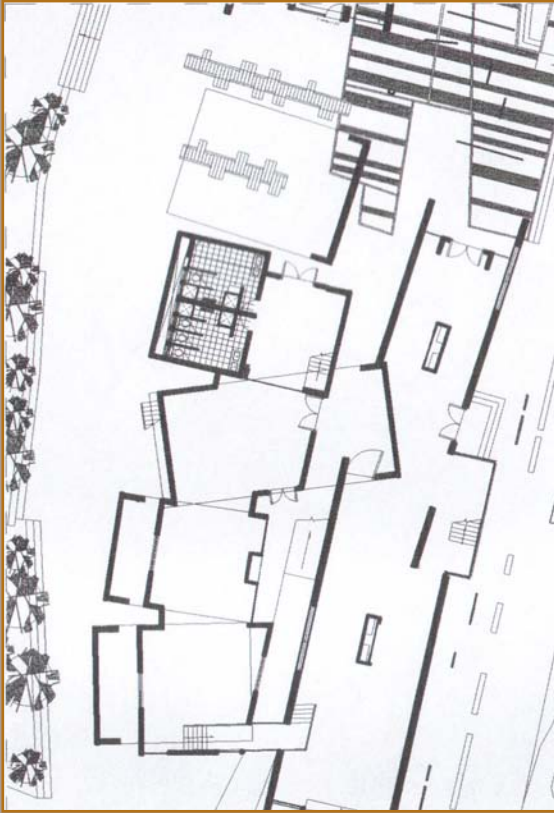


fig. 029 plan of the climbing walls

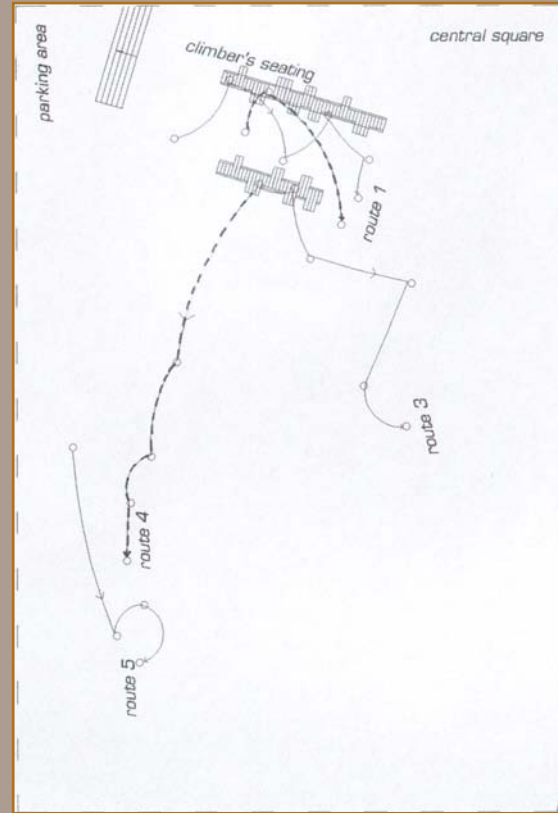


fig. 030 movement of climbers





fig. 031 model of the climbing and hiking centre

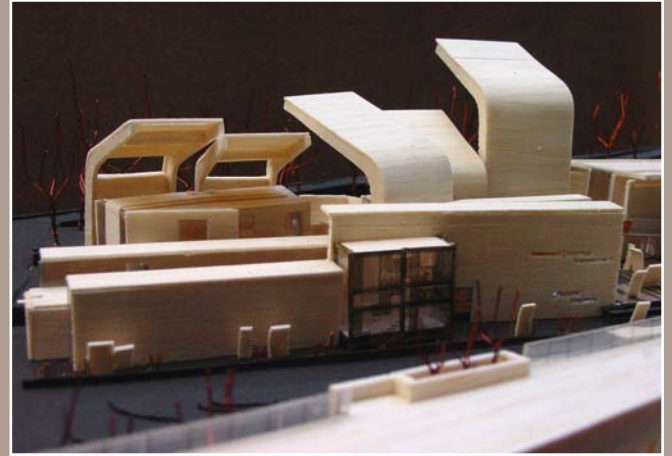


fig. 032 eastern view

## mountain bike centre

*“ There is no substitute for the experience. There is no substitute for finding out for one’s own self, for the personal revelation, for knowing firsthand. When I ride, that happens. The body and the spirit become one. Mountain biking becomes prayer and praise and applause for me and my Creator. When I am on my bike, I am filled with confidence and the faith that word contains. I can face unanswerable questions, certain that there are answers... The religious experience, you see, is too important to be confined to church. It must be available to me at every moment. When it is absent I am, in that sense, no longer living. I exist. I am on life supports, outside of life, like a patient in a coma. I am unconscious, unaware of what being human means. One way to come out of that coma is to be a climber.” [Adapted from Seeham, G. 1981]*



fig. 033 [www.adventurezone.co.za](http://www.adventurezone.co.za)



fig. 034 plan of site

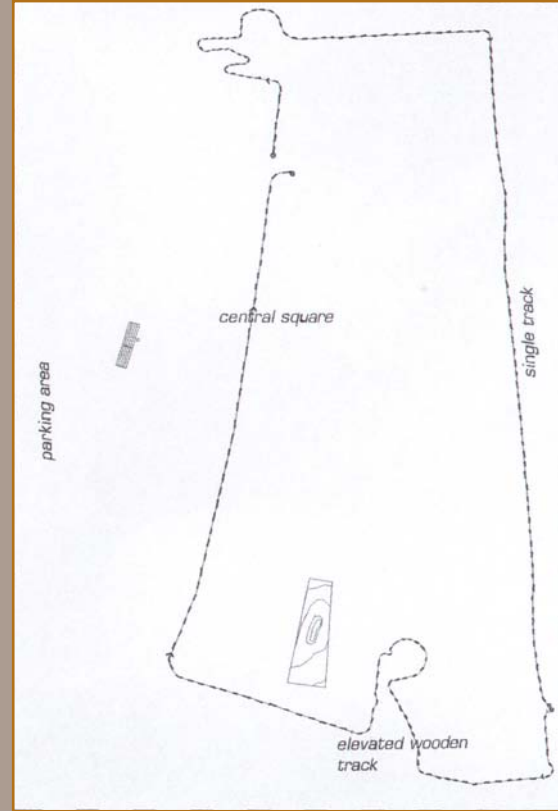


fig. 035 movement of mountain bikers

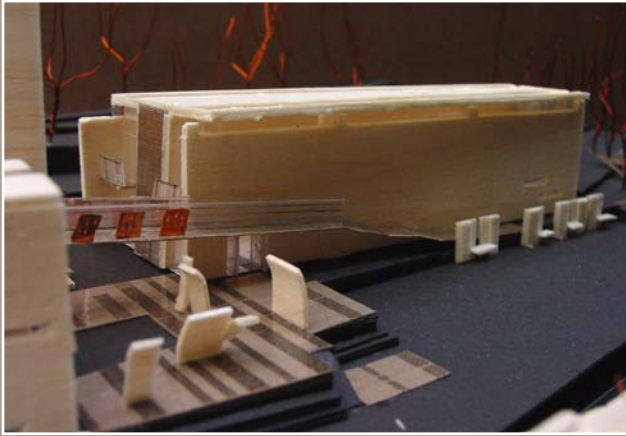


fig. 036 east elevation of the mountain bike centre



fig. 037 north elevation

## kayak and canoe centre

*"I do not remember much about it. About the magnificence of our camping site lit by the dawn, about the roaring white water. All my sensations seemed to have been filtered, slowed down by the greatness of the Zambezi. Jeff was just behind me, but he could just as easily have been miles away, it would have made no difference. The only thing that linked us together was his rhythmic breathing as we ventured down the river. All the rest was a dream."*

*[adapted from the Petzl catalogue,1999].*



fig. 038 Getaway magazine [2003]

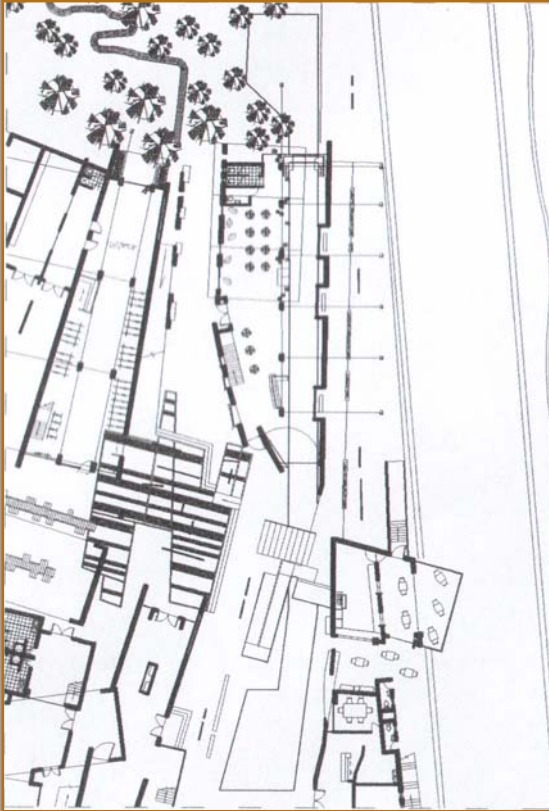


fig. 039 plan of kayak and canoe centre

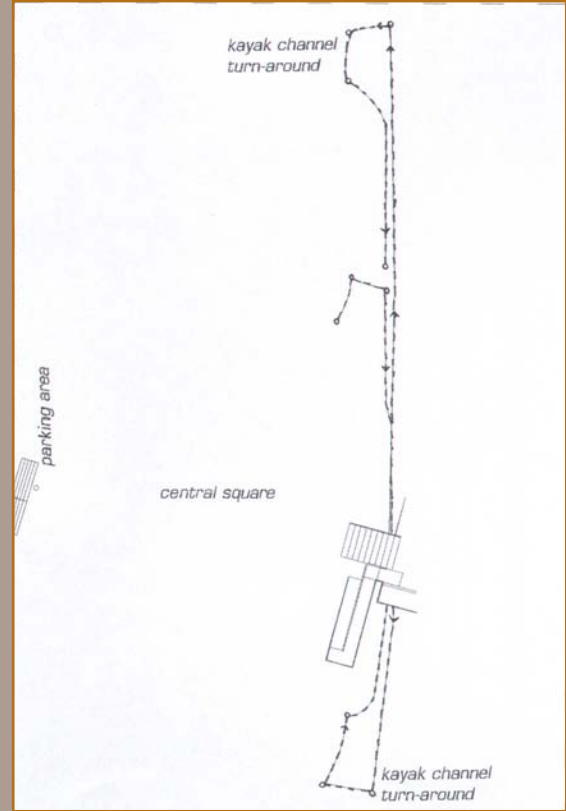


fig. 040 movement of paddlers



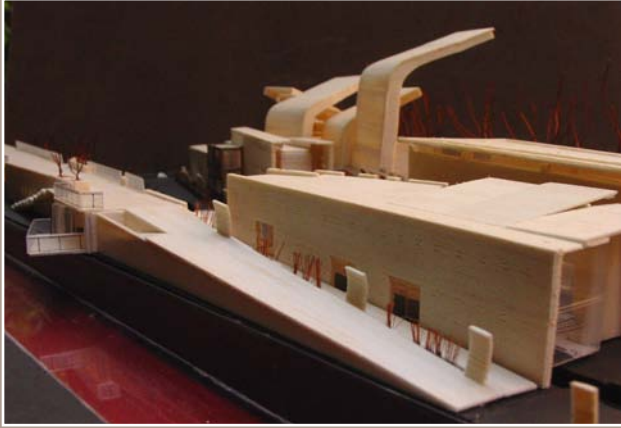


fig. 041 east elevation

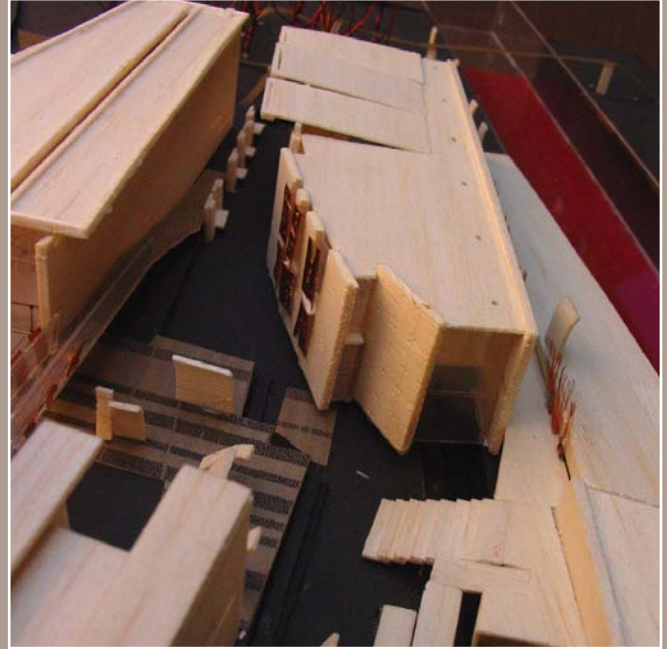


fig. 042 south elevation

## pedestrian routes

*"People need people... I remember back in the village, when we use to gather by the river to wash our clothes. Even if you had no washing to do you would go along, to listen to the stories of the elders and, you know, to be with the people.."*



fig. 043 Time magazine [2001]

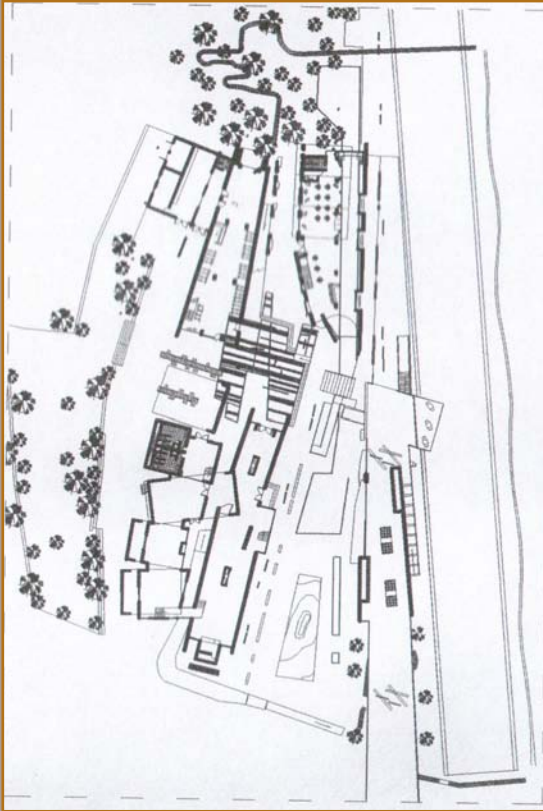


fig. 044 site plan

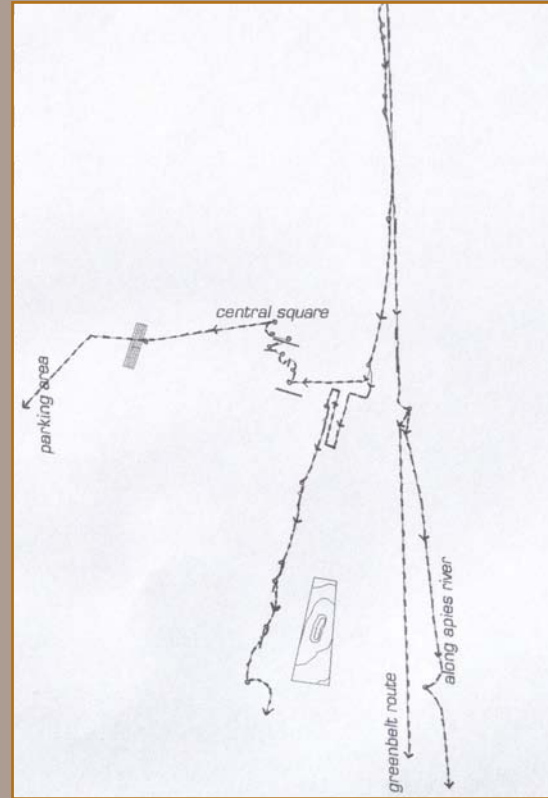


fig. 045 pedestrian movement

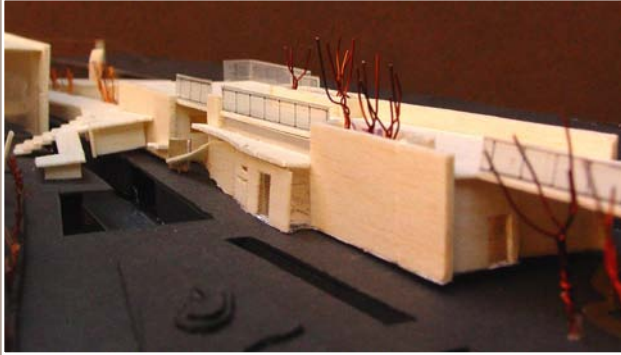


fig. 046 west facade of the administrative building

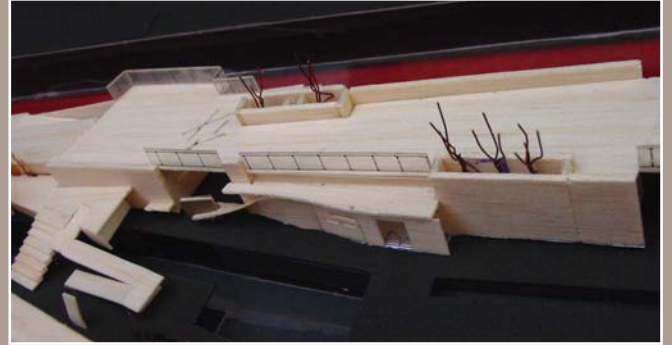


fig. 047 pedestrian walkway

## material exploration

*“Tectonic signifies the fusion of technique with art, of construction with poetry... The radical tectonic finds its expression in the physical and material attributes of construction, enhancing the body’s experience of space and incorporating sophisticated and sustainable technologies”. [Le Cuyet 2001]*

*“I see the rustic metal of the door, the blue of the hills in the background, the shimmer of the air over the asphalt... Everything I see, the cement slabs that hold the earth, the wires of the trellis, the chiseled balusters on the terrace, the plastered arch over the passage way - they all show traces of wear, of use, of dwelling. And when I look more carefully, the things I see start to tell me something about how, why and for what purpose they were made. All this comes to light, or is concealed within their form or presence... I like the idea that the house I build contributes to the atmospheric density of a place, a place which its inhabitants and passers-by will remember with pleasure”. [Peter Zumthor. 1998]*

*Employing materials to their best use involves an appreciation of their sensory qualities as well as of their technical potential. Materials are endowed with meaning, can evoke feelings, trigger connotations and address the deeper levels of our understanding.*

*Sadly the building culture of today has impoverished the sensate quality of materials. To create reverberating architecture one needs to “challenge the commodification and standardisation of building production” and define a way of building that “finds its expression in the physical and material attributes of construction, enhancing the body’s experience of space and incorporating sophisticated and sustainable technologies”. [Day, 1990]*  
*This can be done by using materials as much for their sensate qualities as for economy and utility: Like using raw materials, the juxtaposition of rough and smooth, heavy and light and employing prefabricated elements in a creative way.*  
*The fragmentation of the buildings on site allows for the phasing of construction. Finished buildings can start operating and generating money, whilst the rest of the buildings will be under construction.*

*By implication, architecture does not need a new style, but merely a sensibility in the work and construction. It calls for a way of working with many possible manifestations. Design does not end at the construction phase of a project, but continues right through this phase, where decisions, materials and construction solutions are weighed up until the right sensory qualities are achieved.*

*Another aspect which standardisation in building production ignores is that humans experience*



## response

*Materials were chosen that gives a raw feeling and leaves a blunt physical presence of construction.*

### CONCRETE

*This material is used in most structural and envelope construction. The choice of this material is justified by its appearance, flexibility and thermal performance.*

*Almost all external walls are off-shutter concrete walls, using 2.4 x 1.2 m steel formwork panels to achieve a smooth finish. The walls are constructed to appear as if they are free standing and become the transfiguring elements that express the plan and generate movement and a sense of surprise and intrigue, guiding visitors through the site.*

*A lowered extension of the pedestrian walkway, that functions as public seating, twists 90° to become the entrance façade of the administrative building. This wall and all other applications are cast in-situ and finished off.*

*The roofs become horizontal extensions of the walls, magnifying the intentions of the walls. Outer roofs are sloped inward, with suitable drips at the slab edges, where the inner roofs receive the runoff water. Inner roofs are constructed with parapet walls in such a*

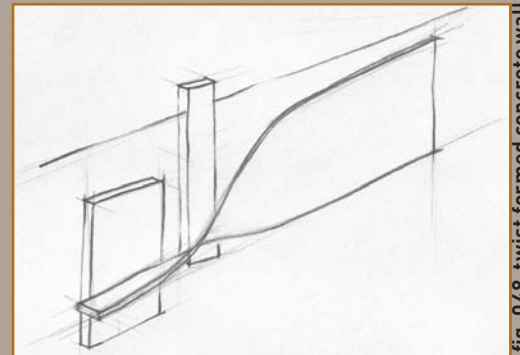


fig. 0.48 twist formed concrete wall

*dimensions anthropometrically. Our main concern is how many body heights something is, how much above one's eye level or how many paces away. Small measurements in relation to eye level are critical to views and privacy and a few centimetres in the height of a wall profoundly alters our spatial experience. This type of construction can be achieved if the design process can be continued right through the construction phase. This, though, depends on hands-on construction. Although the mechanical construction system will still be used in the construction of the buildings, hand construction will come into play where sufficient flexibility in the construction is needed. This type of construction not only gives textural scale, but also suits our socio-economic situation where intensive labour is needed to create work opportunities and to learn new skills. Builders have the opportunities to become artistically involved in their work. Such buildings have a distinct soul even before they are occupied. The spirit of the place can develop because of, and not in spite of, the buildings.*



## response

*way that the roofs still appear to be continuous, flat concrete slabs. The roofs are finished off with 25mm inward-sloped screed, which is waterproofed, and runoff water is drained to a purpose made precast concrete spout. Most floors are finished with 25mm concrete screed tinted with red-oxide and finished with a layer of 6mm clear epoxy, mimicking the earth found in this region and further blurring the boundaries between the interior and exterior.*

*The climbing walls are constructed with in-situ cast rib columns, laterally supported by concrete rib beams @ 3m centres. This structure supports a 150mm concrete slab.*

### FACE BRICK

*Walls that are designed for functional purposes only are constructed with Corobrick silhouette satin face bricks, flush jointed. Where a visual link is necessary these bricks are turned on their edges to expose the extruded holes of the bricks.*

### STEEL

*The decision to use corten steel was made due to the fact that this material*

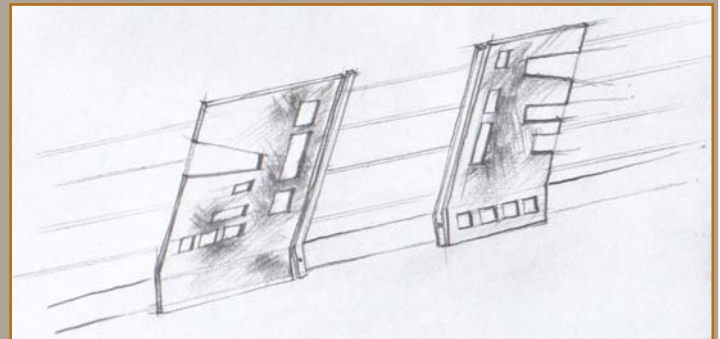


fig. 049 corten steel panels of mountain bike bridge



*alters its appearance over time and finds its application to the decorative panels on the mountain biking bridge crossing the central square and the shading devices on the western façade of the kayak and canoe centre. These panels are patterned for both structural and aesthetic purposes, creating changing shadow lines and patterns.*

#### *GLASS*

*Glass is used throughout the building: frameless glass is applied to the horizontal strip windows in the eastern and western facades. Larger fenestration comprises a designed glazing system, consisting of a 120 x 60 x 6 GS angle iron to which GS flat bars are welded to form the louvres. A framed glass window is fixed to the interior of this frame and can either be openable or rigid depending on its location.*

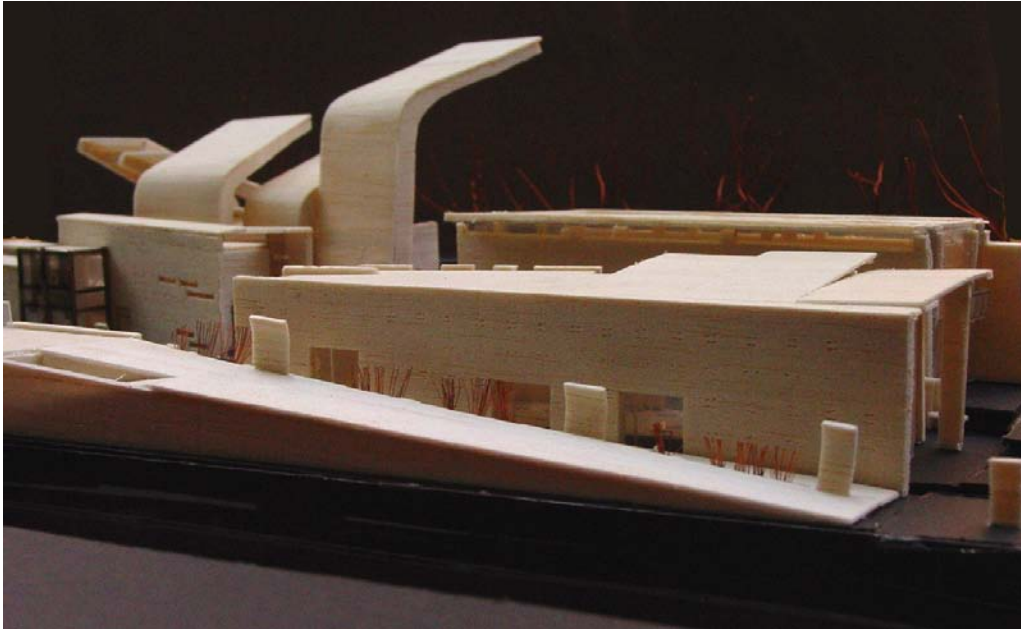
*Frosted glass is employed in longitudinal openings in the pedestrian walkway to provide light to the functions below.*



fig. 050 corten steel panels



fig. 051 climbing wall structures



**fig. 052 eastern view**

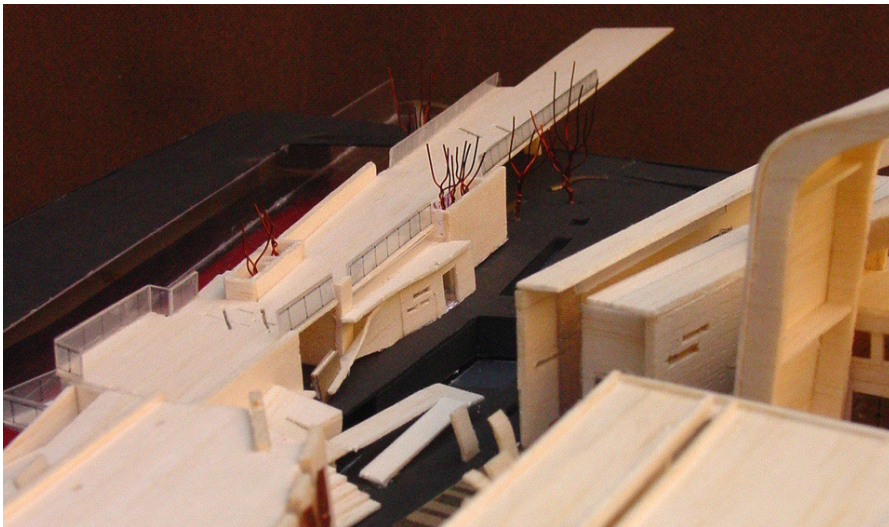


fig. 053 view from the south-east



fig. 054 southern view over the site





**fig. 055 view of the administrative building and the pedestrian walkway above**





fig. 056 pedestrian walkway



