Illus. 60: View over part of the design proposal
design development

initial concepts
refinement
layered design solution
  +children’s spaces
  +community activities
re-programmable spaces
The initial programme for the centre for creative development in Sunnyside was based on formal spaces, such as an auditorium and classrooms. The result was a large, imposing building, which looked more like an alien object than an integrated contextual design. It was only after the manipulation of the Walkerspruit flood plain through extensive landscaping and earthworks that the rest of the design took shape... in response to its dominant natural feature. As the stream channels water, so the design began to take on the role of channeling movement through the site.

Illus.61: Sketches showing the initial design concepts on plan including movement routes and axis.
Eastern elevation of the building form in May including the Walkerspruit

Cross section through the first design concept

Model of the initial proposal which dominated the site
The refinement of the design began to show an architectural surface which emerged from the natural landscape. It was obvious that the building would have to split up and follow the orientation of the channel if it was to succeed in maintaining the unique sense of place and natural experiential quality of the site.

Furthermore, the programme was simplified to accommodate greater cross programming within the design. All spaces were designed to be used for multiple functions at any time of day, for example the main activity hall can be used for extra mural-activities during the day, and in the evening may be used for a political rally. The computer area in the info node, may be used as an internet cafe during the day, and as a computer training centre at night. The openness of the building is emphasised by the residual, almost accidental spaces that emerge from the placement of the buildings and which channel the movement of the public through the site.

At this stage, the design began to consider responses to climate and passive systems. The needs of the internal spaces determined the facade articulation for glazing and roof design. The building form was sculptural and contained various spaces which promoted a multitude of perceptual experiences throughout.

Illus. 62: Model showing aerial view of a stage of design refinement
Illus. 63 on facing page: the refined designed versus the initial conceptual computer drawings
The integration of the design with the landscape is promoted through visual framed links between the interior and exterior spaces. Glazed openings give the perception of an open building, further emphasised by the heavy concrete and masonry surfaces adjacent to them. The temporal qualities of temporary versus permanent or light versus heavy are explored through the use of building materials. The design intervention at times disappears or else becomes firmly planted within the landscape.

Illus. 64: Diagram showing the visual links between the interior and exterior spaces.
Spaces originate from surfaces which pull out of themselves into splintered entities which become embedded within the landscape, or else collide with other surfaces and merge to form new accidental spaces. Here, the opportunity for chance meetings, views to specific spaces and a multitude of functions, become apparent. A “no-space” without restrictive detail or formal structure, provides individuals with the chance to interpret the space to suit their needs.

Illus. 65: Representation of some of the public residual, or accidental, spaces.
Illus. 66: Diagram showing the 3 programmatic components of the design.
Illus. 67 on facing page showing different views of the final model.
The approach toward the building from the Western edge of the site is interspersed by terraced landscaping along the Walkerspruit flood lines. A sculptural rough cast concrete wall marks the entrance to the community information centre [1] and provides shade in the warm afternoon sun. On entering the building, a double volume foyer hides the adjacent ramp structure. At the counter, books are exchanged as part of the inter-lending mobile library service and information regarding the centre’s activities may be obtained from the admin staff. A curved face brick wall contains a bulletin board with which Sunnyside events are displayed. Moving past the ablutions towards the glazed opening on the opposite axis, photostat and copying facilities mark the entrance of the reading room beneath the ramp. Here, newspapers, magazines and selected reference material may be accessed and used in the study area. A computer studio with internet access on the first floor is also used to offer night courses on computer literacy and provides views over the Walkerspruit through its glazed southern façade. The studio space opens onto a balcony which connects to the Exploratorium and to the roof terrace.

Glazed openings frame landmark elements within the landscape and provide passive surveillance over pedestrian movement routes [2]. The main community activity area is accessed by various routes and is located within a steel portal frame box which has been wrapped by lightly coloured polycarbonate sheeting [5]. The main hall is used by members of the community to perform various activities. This large double volume opens up to a multitude of balconies and stepped seating from which activities may be observed. A smaller activity hall is located on the first floor and is glazed along the street front so that activities therein may be observed by passers-by thereby encouraging involvement. Below this area, informal trade is promoted and public ablutions maintain the circulation of pedestrians. A workshop and rentable storage spaces are provided to enhance the services offered to the informal market.

A pedestrian movement route which runs between community areas and the Exploratorium, enhances the overall openness of the site [4]. A curved cast in situ concrete wall is perforated by horizontal strip glazing and marks the entrance into a centre for child development embodied within the Exploratorium [3]. The double volume entrance foyer leads into a ramped social and interactive play area in which increasing levels of motor development are encouraged through temporary design installations, such as tunnels and falling pads. A waiting area or gathering space is located next to a tuck shop which can be accessed by the public. This space is entered from one point only, to improve the security of the children within the Exploratorium. Accessed by the ramp, administration staff offices are located next to an ablution block on the first floor and can be blocked off by acoustic sliding panels. The play areas next to these spaces focus on intellectual development encouraged by activities such as puzzle building and fantasy play. Instruction areas follow on from this space and focus on specialised development such as linguistic or sensory development. These spaces are blocked off from each other by sliding acoustic panels which limit the amount of residual noise pollution from the open plan design. The Exploratorium is fully glazed on both its narrowest extremities, with smaller glazed openings located along the northern and southern façades to provide enough lighting while limiting the amount of sensory disturbance to more sensitive children.

The Exploratorium houses a secondary function: it is used as a traditional craft centre to teach older children and teenagers activities such as basket weaving, beadwork or batik. The first floor instruction areas will be used for these activities and during certain times of the year, the ground floor may be used as an exhibition gallery for crafts during which the temporary children’s playscape may be removed and stored.
Children actively orchestrate their own development through playing, exploration, discovery, testing and imitating. [Moore: 45, 63] Intimate surroundings foster these activities, thereby improving academic and social learning. [Gallagher: 159]

The following general considerations were applied throughout the design and were derived from research:
1. The building promotes interactive behaviour through manipulation of space by providing moving walls or opportunities for hiding under stairs.
2. Multiple settings overlap to maintain continuity and variety: no space is limited to a single activity.
3. Spaces promote a sense of security by creating some private spaces within a communal space.
4. Socio-cultural diversity is catered for by limiting cultural imagery in the built environment [Weinstein & David: 3].

Physical settings are significant in the growth of children and affect how they derive meaning, purpose and structure from the environment. Children’s experiences in educational facilities, both physical and social, form the basis of their socialisation [Wolfe & Rivlin: 90-92, 105-107]. Development away from the home nucleus represents a greater level of complexity in the variety of social roles and relationships offered. During this time, children develop their public persona and social skills [Weinstein & David: 31].

The following spatial considerations have influenced the design of the exploratorium:
1. Visual connection [open plan with moveable partitions to define closure of spaces]
2. Mixture of large open spaces and smaller enclosed spaces [appropriateness of size and alternative uses]
3. Separation of adult areas from children’s activity areas
4. Spaces with a variety of options which cater for different levels of complexity in development
5. Separation of circulation from activity areas [pathways lead to activity areas]
6. Variety of storage, seating, work surfaces and display space available
7. Softness of floors and play spaces
8. Flexibility of spaces to accommodate alternative uses
9. Complexity achieved by mono-functional spaces which are provided alongside multi-functional activities.
10. High comfort levels concerning sun, shade, noise, dust, air, circulation and indoor/outdoor connectivity.

adapted from [Moore: 60-61] and [Prescott: 75-78].
Young children continuously experiment, feasting upon nuances of colour, light, sound, odour, and touch, unfettered by goals, times or expectations. Of the five senses, touch is said to be the most important, because it improves the child's perception of form and space [Olds: 117]. The spatial architecture of the exploratorium provides stimulation, information, movement, sound, volume, texture, various forms, colours, and rhythms.

An ideal environment for young children offers opportunities to learn by moving and stimulating the whole body. Bodily movement extends to the inner states of sensory awareness. The outdoors, with its wide variety of stimuli in natural elements is the ideal playscape for developing sensory awareness in children [Olds: 120]. It is for this reason that the landscape is emphasised in this design; through windows framing trees, or ramps which become buildings.

The floor allows children to roam freely, and challenges their balance and walking skills. This is achieved by using various changes in level such as ramps and steps which in themselves become part of a greater playscape.

Play areas support different functions, and foster any type of interaction desired by children. Since a low level of imagery is provided, these spaces allow for various types of dramatic play within the same area and can accommodate broader cultural variety of users [Olds:123-130].
_sense of place:_ all play environments are part of the greater architectural design. Spatial configurations, such as complex activities centred around a foyer, improve the sense of place and connectedness to other spaces.

_unified environment:_ open-plan design allows each activity to flow into the other, promoting smooth transitions during play. Major activities will centre on complex pieces which are temporary fixtures.

_variety of spaces:_ a variety of juxtaposed and contrasting spatial situations is necessary to support a rich possibilities for play. Adult supervision is integrated into the surroundings, for example by providing seating on the actual play forms within the environment.

_key places:_ are dominated by one major element which supports bodily movement such as a falling pad or a slide which promotes solitary play or group interaction. The spaces surrounding these elements consist of a complex juxtaposition of levels and pathways.

_systems of pathways:_ paths infer movement which is synonymous with play. Paths intersect so that various choices are available. Dead ends are avoided and temporary slides or tunnels can be incorporated into pathways, offering children a different perspective over the environment.

_three-dimensional juxtaposition of levels:_ offers a matrix of spaces, platforms, and pathways creating maximum potential for physical, verbal and visual interaction. Behaviours promoted in these spaces include hide and reveal, looping, overlooking and observing others from a position of safety, ground hogging and verbal communication between children.

_non-objective environments_ and loose, interlocking objects throughout the exploratorium provide no imageable or realistic representations and allow children to indulge in fantasy games.

_variety of surface finishes_ such as concrete, timber, carpet, rubber, bricks, steel and plastic offer children a variety of tactile experiences on vertical, horizontal and inclined surfaces through which bodily contact can occur.

_Structural integration:_ play and sitting surfaces use floors, walls, ceilings and horizontal or vertical supports. Residual spaces, such as those under staircases, become private places within which children may retreat and release emotional anxieties such as fear, anger or frustration [Olds: 133].

_Functions are reflected by the material’s used: tranquil spaces have warm, soft textures and expansive activities are located within cooler, harder, more vibrant-toned spaces [Olds: 136-137].
Illus67: Environments which promote learning through play (digitally enhanced image)
As the southern edge of the area concerned is more public in nature than the northern edge, community spaces are located here. These spaces allow movement of individuals or informal trade. The exact use is entrusted to the interpretation of the community and therefore, these spaces are not confined in nature like those of public squares. In Africa, the street edge is the place where most community interaction occurs, be it trade or simply movement. The design emphasises this fact by opening its more structural spaces to these areas, either physically, by using doors, or visually, through glazing.

Illus. 68. Areas for indoor/outdoor community activities and sketches representing some spaces.
informal trade area with space for community activities

movement route

main activity hall

view towards stepped seating
Illus. 69: Sketches representing some reprogrammable spaces.
The flexibility of the programme has resulted in an architectural solution which, from the beginning, emphasised the adaptability of the design to different uses. Within this logic, built environments are seen through a different perspective and the reinterpretation of space can be as literal as a ramp becoming a sprinting track. Interior spaces could be used for community meetings, workshops, political rallies or formal instruction, like martial arts or ballroom dancing.

Because of the location of the site within a community which is steadily evolving, it is assumed the community’s needs will also evolve; therefore, as far as possible, spaces merge into one another and offer opportunities to be manipulated to house new functions, should the present ones no longer be required. This principle is apparent in the exploratorium design which has not been designed in miniature, but rather as an adaptable space. In essence, the building becomes a structural shell, permanent in its outer skin, but highly temporary in nature within.
Illus. 70: 3D digital model of the final design