DESIGN DEVELOPMENT
Functional Characteristics

Multi Purpose Hall-
Size: Main hall - 110s/m²
Program:
Ablution room 42m² - direct connection to hall
Store: 12m² - direct connection to hall
Admin office 6m² - entrance control
Flow scheme:
People arrival: external waiting area
Admin + queries: admin office
Dress for training: ablution room
Equipment: storage
Training: main hall
Instructor equipment: control cupboard
Watching area: external benches (stairs)

Martial arts -
Capacity - 20-30 p (2-3m² p.p)
Equipment - basic
Method - Instructor with a group
Population - mainly youth
Hours - noon/afternoon

Dance class -
Capacity - 20-30 p (2-3m² p.p)
Equipment - music
Method - instructor with a group
Population - all ages
Hours - afternoon

Drama -
Capacity - 20 p
Equipment - chairs, podium, curtains on windows
Method - instructor with a group
Population - youth/adult/old age
Hours - all day

Lectures -
Capacity - 50p (0.46m² p.p)
* Maximum capacity 200p for special occasions
* Over 50p would use the community hall
Equipment - chairs, podium, music, speakers,
Method - lecturer with audience
Population - youth/adults
Hours - afternoon/evening
Unique needs - acoustics

Gymnastic activities -
Capacity - 20-30p
Equipment - mattresses, weights
Method - instructor with a group
Population - youth/adults
Hours - all day
Restaurant
Size - 245m²
Program:
Tables’ area: 165m²
Kitchen area: 80m²
Seats: 114 (72 in house + 42 outdoor)
Vehicle Offloading area: Check + Unpacking area
Store: general, cold, frozen, vegetables
Preparation area: three secondary areas
Cooking area: grill, oven, fry, boil
Finishing: put food at the plate
Serving - waiters take food / bring back dishes
Wash up area: prepare, rinse, washing machine, dry, storage
* Rubbish - hidden outdoor area close to preparation area
* Sinks - wash up area, hand washing area (staff)
* Ablution - female + mail toilet
* Ventilation - above cooking area
* Waiters - one waiter per 10-16 people (depends on peak time)

Scrap metal workshop
Size: 198m² + upper storage 27m²
Capacity: 20-25p
Program:
Working hall 144m² - working benches surrounded by machines
General storage 60m² - ground + first floor
accessiible to working area
Tool box storage + sink 6m² - direct access to working area
Dressing room + toilets 14m² - upper floor
Display courtyard in front of the working area
Flow scheme:
Offload area: back ramp Washing area: rinse, immerse, dry
Store: portable trolley/racks (lever upper floor deck)
Cutting area: abrasive cutting (2x1.2), hand guillotine (1x1.5)
Processing stations: forge (2x1), welding plant (2.8x2.5), brazing (co2+asetilen 2x3), drill (1x2),hand grinder (1x2), work bench (2.5x2)
Finishing area: painting (2x2), acid (1x1.5)
Store: indoor display (shelf), upper floor

Space budgeting for scrap metal and wood workshops
Benches - 15% - 30%
Machines - 10% - 20%
Assembly - 5%
Storage - 20% - 30%
Amenity - 3% - 5%
Desks - 8% - 10%
Display - 3%
Circulation - 25% - 30%
Wood workshop
Size - 64.5m²
Capacity - 6-10p
Flow scheme:
Offloading area: back ramp of metal workshop
Store: open area (racks)
Cutting area: radial saw (1.5x3), power saw (2x1)
Working area: carpenter’s bench (3x4.5),
lathe (2x3), dust Collector (1.5x2)
Finishing: painting / brushing (3x2)

Environmental centre -
General: activities for primary school classes
during day hours, and for youth/adult at afternoon

Classroom (water issues)
Size: 84m² (classroom + library & homework)
Capacity: 20-25 students
Equipment: 12 double tables, 4-6 sinks, open
to square
Art workshop:
Size: 60m² environmental art workshop
Capacity: 20-25 students
Equipment: 12 double tables, painting board,
sink, paper cupboard, store

Painting workshop
Size: 108m²
Capacity: 15 - 20p
Equipment: drawing table (3.45p.p),
regular tables (2.0p.p), store,
easels, sink, paper cupboard

Sewing workshop
Size: 62m²
Capacity: 10p
Equipment: working table + machine (2.2 p.p),
store.

Programme: Store 3.5m² - direct connection to
delivery
(40k.p.bag x 250k.p.week)
1000k. delivery per month = store for 25 bags
Preparation room 14.5m²
Working area 96m²
Kiln room 12m²
Office 7.5m²
Flow scheme:
Offload: trolley from restaurant to stairs
hand lifting through stairs to store
Store: 25 powder bags on floor
Preparation: water, mixer, pug mill, bench
Processing: wedge (1.5x2), wheel (1.5x1.5),
throw (0.8x1.6 p.p), paint (0.7x1.4 p.p)
Drying: shelves
Firing: kiln (1x2), shelves-
Display: shelves
Conceptual Sketch

The site as a central hinge with four wings.
First - connection to the TB settlement
Second - connection to the East Bank community centre
Third - connection to the bridge and the river
Fourth - connection to the green strip and its activities.
Corridors to the site

Two main corridors leading to the site:
The “urban” corridor which links the site with the main street. That space is characterised by tuck shops in front of the TB settlement houses. On the other side, the East Bank new houses are surrounded by walls. The settlement houses open to the street with shops.
That space will serve as a lobby to the centre and probably gather a lot of street activity.

The “natural” corridor mainly gathers pedestrian movement through the green strip alongside the river. That movement is characterised by youth who come to play and enjoy outdoor activities.
This space would serve as outdoor exhibition/function area with a strong link to the centre.

Figure 83
Main corridors which lead to the site.
Public spaces around the site

Various types of spaces surround the site and create an opportunity to unite the different existing activities with the new centre. The ability to unite both sets of activities at an interesting gathering space will be a key to the design of the centre as a community gathering place.

View points

The main view point is located at the western part of the site. It is higher than the green strip area and has a great view of Old Alex, the river and the playground activities. From the south, the site also lies on the edge of the river and should be open with easy access to the river’s edge.
Focal points

Three focal points surround the site in a close circle; the “urban” entrance functions as the main entrance. The “natural” entrance from the west. The community centre’s focal point gathers the main activity at the existing centre. There is natural movement between the community centre’s gathering space and the “natural” entrance from the green strip and the bridge.

Climate

The buildings would face the main public space within the northern part of the site. This enables all buildings to be exposed to the sun.
Development of the Plan

- Main semi-public square faces to the neighbourhood in the public area.
- “Urban” entrance link to the main junction.
- “Natural” entrance opens to the green strip and the bridge.
- The existing community centre hall connects to the new development.
- The whole elevation to the river defines the edge.

Figure 88
Aerial view of the site.
Sketches of the Focal Points

Figure 89
The “natural” entrance and the bridge gradual connection to the green strip and to the site.

Figure 90
The “urban” entrance. Main distribution square connects the centre with the corridor from Roosevelt Street.
Figure 91
The space between the community hall and the clinic to the new Art Centre.

Figure 92
Sketch of the Centre with possible connection to the vacant triangle. The western side of the building opens to the green strip and its activities.
Site Model 1

- Main building as an entrance lobby with gradual heights
- First anchor - (medium size hall) to the side of the community hall as a link to the centre
- Second anchor - (scrap metal workshop) faces the green strip and the bridge as a potential outdoor extension to the exhibition area.
- Developing of the natural movement line between the community hall and the green strip.
- Create an open square to the public area.
Site Model 2

Dividing the centre into different components:
1. Entrance/lobby/exhibition hall
2. Medium size hall
3. Workshops building
4. Scrap metal workshop
5. Restaurant/entertainment building

• The main movement line is blocked in order to check the movement system with one main entrance.
• A space between the buildings was made in order to open the centre to the river and give access to it.
Conceptual Sketch

- Emphasizing the “distribution line” as the main movement system.
- Defining the grid system for the plan.
- Creating a public/semi-public more open area to the north of the “distribution line”
- Creating a private/semi-private area between the “distribution line” and the river, with more dense buildings.

Figure 95
A conceptual sketch of the site.

Figure 96
Conceptual sketch - capturing the movement path.
Conceptual Sketch translates to form blocks

- Locating of the blocks according to the movement system and its grid.
- The entrance block breaks the grid in order to create boundaries for the site.
- The site is divided into the public area (north of the main movement line) and the private area (south of the movement line).
Final Concept Model

- Main distribution line covered/semi-covered
- Main buildings as an activity component
- Different spaces as an informal activity area
- Permeability through the centre to all directions as part of the theoretical concept.

Figure 98
Final concept model.
Site Model 3

* All buildings linked to main path which opens to the main square.
* Defining entrance building by gradual roof heights from the street level up to exhibition hall.
* Articulation movement point emphasized by gum pole canopy.
* Western workshop's building defines open space for environmental activities and link to the river.
* Gradual steps and landscape works define natural balcony and concentrate both pedestrian movement lines from the green strip and the bridge.

Figure 99
Site Model 3 shows how the site is divided into 5 different components.
Lobby and Exhibition hall

* Gradual roofs slope, points to main square as indication for important space.
* Light canopy to shade over art shops, and to create comfortable watching area equipped with benches towards the main square.
* A long ramp located in parallel to the path until it reaches the exhibition hall’s bridge.
* Glass wall faces to the south and to the west with sun louvres.
Articulation movement point

* Visible to pedestrians and first floor workshop
* Stairs and benches be used as seats
* Main entrances to restaurant, multi purpose hall and art workshop linked and define the space

“Natural Entrance”

* Defining the movement line by trees and benches
* One storey building from north side (restaurant) enables penetration of sunlight, while the roof and canopy provide shade.

Figure 104
Articulation point.

Figure 105
Artics larian point model.

Figure 106
“Natural entrance”.

Figure 107
Connection to the bridge by gradual steps and trees.
Multi purpose hall

* Gradual stairs for seating used as guidance for activities at the hall and defines the main path to the courtyard and the hall itself.
* First floor path used as a canopy above courtyard and also as a balcony, to enable visual connection with the hall’s activities.

Environmental centre

* Linked directly to the river but still defined by ramp and trees.
* The building defines the space from the north and west side to show relation to the river.
* The flat roof above the artist’s workshops, which is used for solar demonstration, exposed visually to the ground open space.
Accommodation

1. Exhibition hall -
Ground floor - 193m²: 154m² public service
39m² art shops
First floor - 125m²:
50m² offices
75m² exhibitions
Total: 318m²

2. Scrap metal workshop -
Ground floor - 198m²
First floor - 45m²
Total: 243m²

3. Central building
Ground floor -
Wood workshop - 62m²
Art shops - 28m²
Multi Purpose Hall - 110 + 84 = 194m²
Environmental art workshop - 77m²
First floor -
Sewing workshop - 62m²
Painting workshop - 108m²
Total: 531m²

4. Environmental building
Ground floor -
Environmental class - 107m²
Artist’s workshops - 90m²
First floor -
Ceramic workshop - 172m²
Total: 369m²

5. Restaurant -
225m²

Total ground floor - 1174m²
Total first floor - 512m²
Total build area - 1686m²
Allocation of functions

The Centre is divided into four circles:

First circle - Public spaces surround the Centre, developed to increase interaction with the area around the site.

Second circle - Public facilities within the Centre, located on the edge of two main entrances, continue into the Centre.

Third circle - Semi-public open spaces, designed to cater for informal activities.

Fourth circle - Private facilities/workshops, divided into four categories:
* Training art workshops
* Artists’ workshops
* Students’ environmental centre
* Multi purpose hall

The First circle is composed of a few spaces: the square and the vacant triangle in front of the main lobby, the space proposed to serve as a transportation node, public parking and outdoor space; the sports ground in between the Community Hall to the scrap metal workshop, designed to contain youth activity and also gather people who wait for the East Bank Clinic; the natural balcony connected to the green strip and the bridge.

The Second circle contains the main lobby and exhibition hall, which function as a welcome and a presentation area for art products, information desk and administration offices. In addition, the restaurant, which defines the “natural” entrance, slopes with its seats into a view of the river and Old Alexandra.

The Third circle composes of small shaded spaces, connected to buildings’ entrances, and creates a gradual entering process.

The Fourth circle is composed of a few functions: training workshops, located on the main path that define it; artists’ workshops that define the “natural” entrance; the multi purpose hall which has a transparent façade to the main path and the square; the classroom at the Environmental Centre concentrates the connections to the river.
Figure 114
Entrance and internal spaces.

Figure 115
Public/private division of the site.
Climate concept

Latitude: 26 degree south
Longitude: 28 degree east
Altitude: 1515 meters above sea level

With hot and rainy summers (but not humid), and sunny winters, Johannesburg’s climate allows people to have outdoor activities almost all the year. This data led to design concept that takes into consideration the significance of outdoor spaces as a unique opportunity for communal activities.

Sunshine
Johannesburg experiences intense sunshine in summer (50%-60%) while in winter, the intensity is less, but 70%-80% days are sunny. Outdoor spaces will be fully/partly covered, while the main square is exposed to direct sunlight with shaded areas around it. Workshops are designed to have a central activities room with an overhang roof to the north that caters for outdoor space beneath in order to protect from summer sunlight and rain. On the southern side, the workshops have a shady and cooler balcony, facing to the view of the Jukskei River.

Ventilation
Corrugated sheet metal with thermal insulation sheets designed to decrease the heat of the sun. In addition, open roof construction with windows enables better ventilation to remove hot air.

Figure 116
Summer sunlight blocked by roof while Winter sunlight can penetrate to the front.
Figure 117
Different types of spaces according to climate changes.

Figure 118
Ventilation scheme uses cold air from the south to cool down the workshop.

Figure 119
General view of building’s location in relation to ventilation.

Figure 120
Shaded areas around buildings, created by roof/canopy/tree/building.
Design Influences

Simple shapes of buildings with varied public spaces. A pathway used as a spine, which takes the people through the Museum’s halls, a metaphor of the Indian street where you go from a village to temple to palace.

Figure 121
National Crafts Museum - site plan
Delhi 1975-90.
Architect - Charles Corea

Figure 122
Section of the National Craft Museum.
Figure 123
The African Centre for Health and Population Studies
Somkhele - Kwazulu-Natal
Architects - East Coast Architects
Using gum poles as a double column and as shading material.

Figure 124
Habitat Research and Development Centre,
Katatura, Namibia
Architect - Nina Maritz
Daily materials used for specific details at the centre and enrich the texture of the buildings.