

Why a Sports centre ?

When looking at the context of Cosmo City and what social and recreational facilities are available to the residents, very little has been provided. Considering that majority of the people living in Cosmo City are from disadvantage backgrounds, where families needs cannot be met through individual dwelling unit (Dewar 1987:56). Such public institutions become an important place, where social experience are played out, and they act as extensions to the private dwelling units (Dewar 1987:56) and surrounding schools which have limited resources and infrastructure to provide extracurricular activities.

One can agree that education is an important part of a child's development. However it needs to be balanced with exposure to extracurricular activities such as sports, arts and music. The sports centre will provide an opportunity for children to be exposed to new kinds of sports and develop a keen interest in sports. After-school programs and extracurricular activities can offer youth a safe and supervised haven and a chance to learn new skills such as conflict resolution, prepare for a successful career, improve grades. The sport facilities can in addition be used by all ages and genders (Middle Earth :2010).

The programme generated spaces where social activity can take place, one of those being sports. Sporting activity being it a casual game of soccer between friends or a formal match between schools, is able to bring people together through a physical activity. While the Sports centre focuses on providing exposure to sporting activities the spaces are designed to accommodate other types of activities, such as community meetings, NGO workshops, homework clubs and dance and drama practice.

Therefore allowing for a diverse group to interact and engage in a variety of social activities within the same space. In homework clubs or basketball teams, people can meet others who share the same interests. The youth and adults of Cosmo City can explore their physical, creative, social, political, topics with people they meet in the centre. People will have the opportunity to meet other people who are different from them. The programme of this sports centre aims to bring people together as a way to break down the barriers between people and create a platform for social interaction to occur within Cosmo City through social activity.

Bello Campo Vertical Gymnasium 1. 2001.

Barrio 'La Cruz', Urb. Bello Campo, Caracas. Venezuela. By Mateo Pintó, Matías Pintó, Hubert Klumpner

The Vertical gymnasium was built over a former makeshift soccer field that existed in the dense barrio context. The programme was then stacked vertically into spaces for a dance studio, running track, rock climbing wall, basket ball court, open air soccer field and a gym area (Urban thinktank:2011).

The internal spaces have been designed to overlap each other, which creates a constant visual connection throughout the internal spaces. In addition the basket ball court is been positioned in the centre allowing people to circulate around the court and view into the space. The basket ball court sits below street level which allows people outside on the street to view into the space without distracting any ongoing sports activity inside. The spaces in the gym have been designed as multi-functional spaces, where circulation spaces are used for spectator platforms during a match or as a area for chess classes. This example clearly indicates how architecture together with programme can become a tool for community development and provide a framework for formal sports activity to occur together with informal social gatherings.



01.Internal view of sports hall



02.Multi-use space: Chess match being played on the circulation and spectator platform



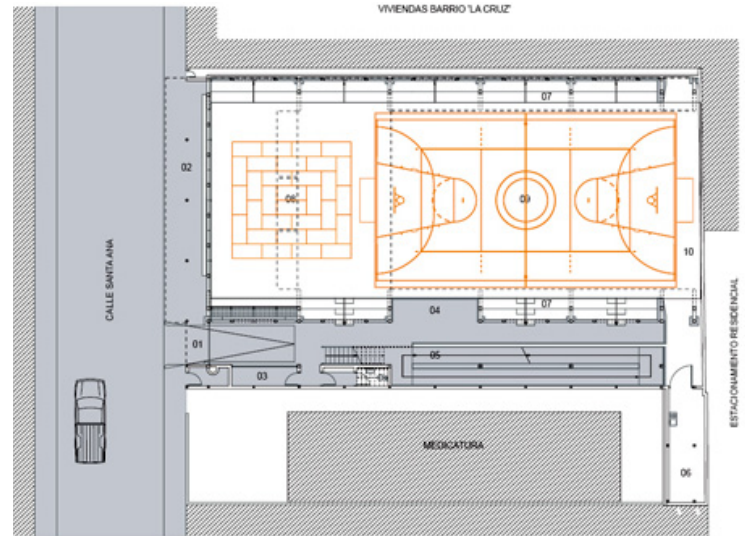
03. People viewing into the sports hall from the street level



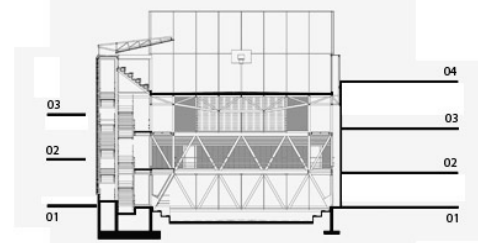
04. Spectators view into the space at various levels



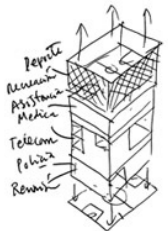
06. Multi-purpose triple volume sports hall



05. Ground floor plan



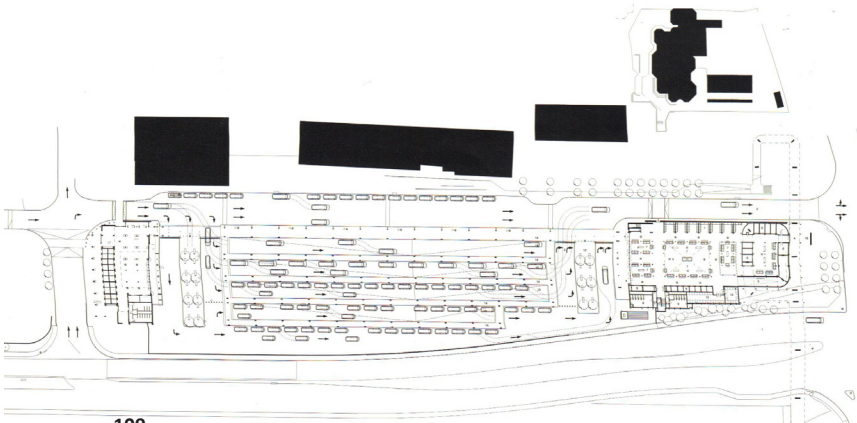
07. Section through the gymnasium



Why a Trading Space ?

Compared to the limited existing formal facilities that have been provided in Cosmo City, an immense assortment of informal activity has emerged throughout the development, especially the low cost housing region. The reality is that the majority potentially economically active-people will have no option but to generate their own employment, which is seen as the 'informal sector' (Dewar 1995:53).

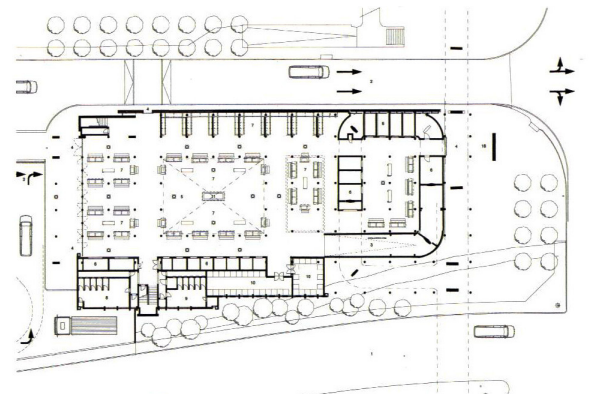
This visible informal trading that occurs inside Cosmo City, clearly indicates the need to provide viable opportunities for people to manufacture, trade and provide services at a low overhead. A market space can be defined as the physical agglomeration of a number of traders in a usually public space. The advantage to promoting a market space in Cosmo City, allows for small operators to gain access to viable locations which will attract people. A formalised market space in Cosmo City will allow for people to provide services, and a variety of choice of trading, for those that are unable to travel far (Dewar 1995:54). The market space in addition will function as public space for socialising and gathering. And through shopping and trading as a social activity one is able to socialise and meet other people.



Why a Taxi Facility ?

Cosmo City has provided for peoples' housing needs, but have neglected the need to provide systems of public transport inside Cosmo City. Currently the existing formal taxi rank that was built for Cosmo City, is not being used, due to ongoing taxi negotiations. Furthermore this public transport facility has been located in an area where it's out of reach to most of the people of Cosmo City, especially the people living in the low cost housing region, who don't have access to private transport.

Therefore by providing a formal framework for taxis to operate from, it will be able to establish the taxi rank as a formalised space within Cosmo City. A portion of the selected site is currently been used as taxi drop off and collection area for the Cosmo City residence. It is centrally located and easily accessible off the main road, making it an ideal location for a taxi facility. This spontaneous activity that occurs on site, brings countless people to the site to catch a taxi to work,school or home. Transport as an activity has the potential to be clustered with other activity such as trading, which will generate a sufficient amount of pedestrian flow through the space (Dewar 1995:54), then bringing people together in a space, while waiting for a taxi or shopping in the market. The taxi facility will also function as a gateway into Cosmo City,where people arrive and leave from this space.



Baragwanath Transport Facility & Trader Market ,Soweto.2006.Urban Solution Architects

The Baragwanath Transport Interchange and Traders Market forms part of the greater Johannesburg Metropolitan Council's Baralink Development framework. Baralink was initiated to integrate and uplift this important gateway into Soweto. It further aims to promote the proper integration of Greater Soweto with Johannesburg (Low 2008:22).

The Transport facility is one of the busiest transport nodes in South Africa, as a majority of Soweto's residents pass through the interchange in order to get to work and home. The objective of the brief was to provide a functionally efficient transport node that integrated the street traders in a structure that would also act as a gateway into Soweto. The development will accommodate 500 street traders with associated amenities, including storage facilities management offices and support infrastructure (Low 2008:22).

The planning principle was to provide an arcade as a structural spine along the entire length of the site. The arcade becomes a binding element for the development onto which all the various functional requirements are attached. The arcade is the focal point of the development within which the greatest number of traders ,public amenities and spaces are positioned (Low 2008:23).

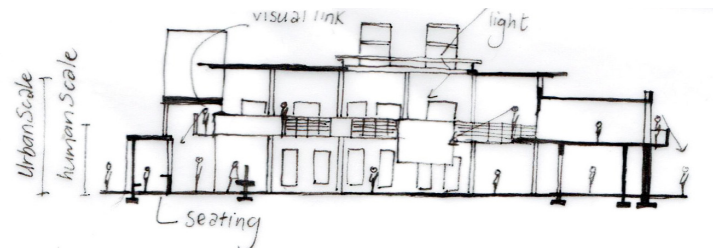
The design allows for the edges to be permeable and open, allowing people to filter across the site. The spaces in addition are designed to cluster and overlap, creating an inclusive environment between all the different functions and users. The scale of the building responds to the context and at the same time builds an urban presence in the context. The use of concrete as the main materiality of the structure, shows its robustness and permanence in the context.



Robust materiality of the Baragwanath Transport Facility & Trader Market (Image by Ludwig Hansen from flicker.com)



Baragwanath Transport Facility & Trader Market (Image by Ludwig Hansen from flicker.com)



Typical section.After Urban Solutions 2008:25

Why a public space ?

The only formalised public spaces that exist within Cosmo City are the parks. However there are not enough public spaces that allow for individuals and groups to gather in collective human activity. Public spaces are an essential part of a cities blueprint. Public spaces should be seen as the social outdoor 'rooms' of urban settlements. These public spaces being enclosed or open, constitute the most important form of social infrastructure(Dewar 1995:18).

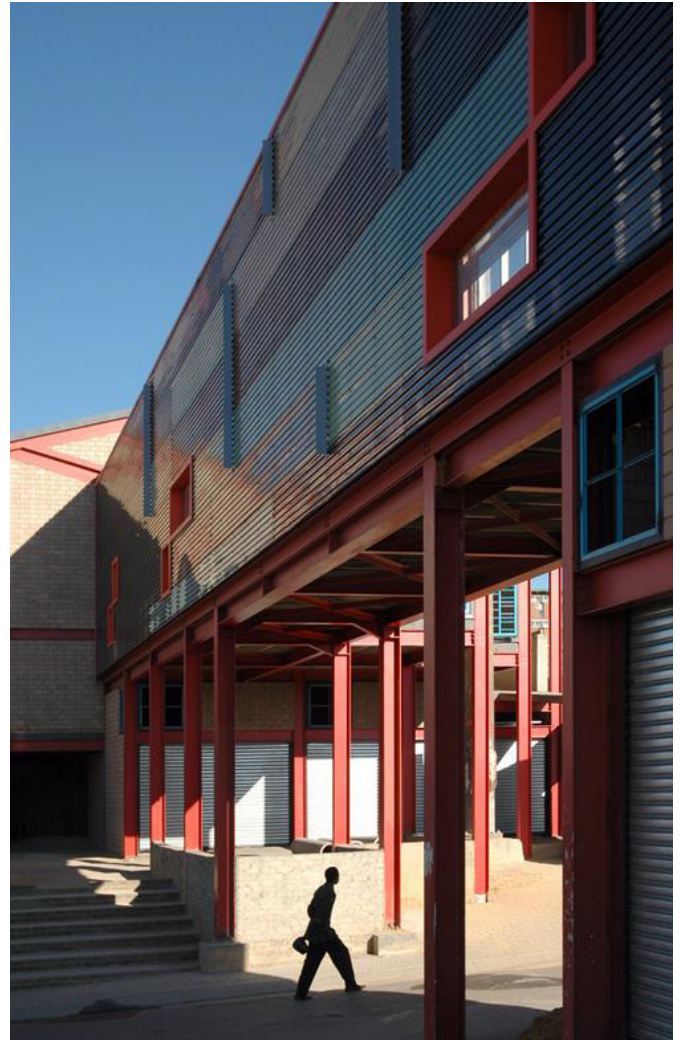
The proposed public square in Cosmo City, can be used as a space for both formal and informal activity to occur. The space should allow for necessary activity, optional and social activity to take place openly (Carmona2003:107). However in the context of Cosmo City, social activity becomes highly important to generate inclusive spaces.

Social activity will occur spontaneously as a direct consequence of people moving about and being in the same space (Carmona2003:107). The public square will allow for people to openly engage in activity or observe activity taking place within the space. It is a space where no barriers exist, allowing all people to feel a sense of place and community, resulting in an inclusive social space.



Alexandra Heritage Centre (Image by:Iwan Baan)

Alexandra Heritage Centre. 2008. Alexandra, Johannesburg. Peter Rich Architects



The bridge that links the building across 7th Street (Image by:Peter Rich)

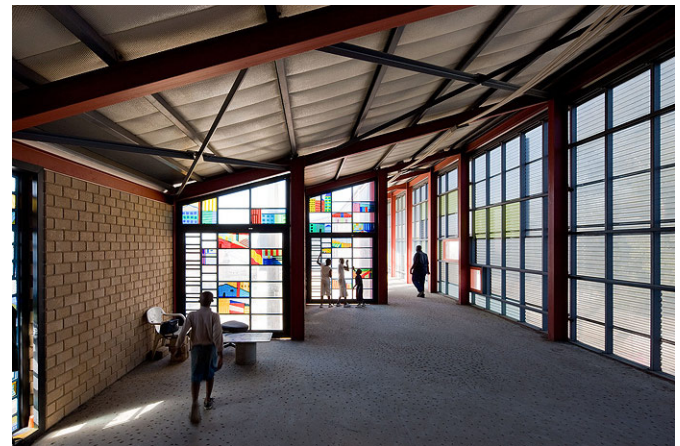
The township of Alexandra, is located in the northern central part of Johannesburg. The informal settlement covers an area of less than eight square kilometre, yet its home to nearly half a million people (Detail 2011:344). The Alexander Renewal Project was initiated in the year 2000 by the government. The primary objectives of this project was community building and poverty relief (Detail 2011:345).

The design of the centre was driven by the site constraints and study of the organic nature of Alexandra's internalised yard spaces. The restricted space and topography suggested a bridge building linking two corner stands, which are located at the heart of the township (Fitchet 2009:136). The central location of the centre allows all residents to access the facilities and at the same time it creates a landmark in the township and a gateway down 7th Street.

The first floor, houses a walk-through archive that documents the lives of the residents through ongoing exhibitions. The raised ground plane establishes a public plaza off the street, which is fronted by shops, training facility, workshops, internet cafe and a food court (Fitchett 2009:136). The use of ramps and raised platforms allows the spaces to be easily accessible from the exterior and become a space for children to play and people to socialise and gather.

Through the use of material and manipulation of spatial sequence, the building comfortably combines domestic and civic scale. Its flexibility is given coherence through a steel structure permitting a variety of partitioning to which local builders and artists contributed. The Centre provides a glimpse of the intimate daily life of its surrounds, while combining a powerful tectonic gesture with the use of materials that are both familiar to the context and inviting (Fitchet 2009:137).

This precedent shows how architecture can create an inclusive space in a community, through the use of flexible design layout, which responds to the context, scale, open spaces and materiality. The spaces allow for all people to gather and use the centre as an extension of their back yard. The building provides a platform for the residents to interact, trade, socialise, attend workshops, gain access to recourses and have a space for community meetings.



Flexible internal spaces (Image by: Iwan Baan)

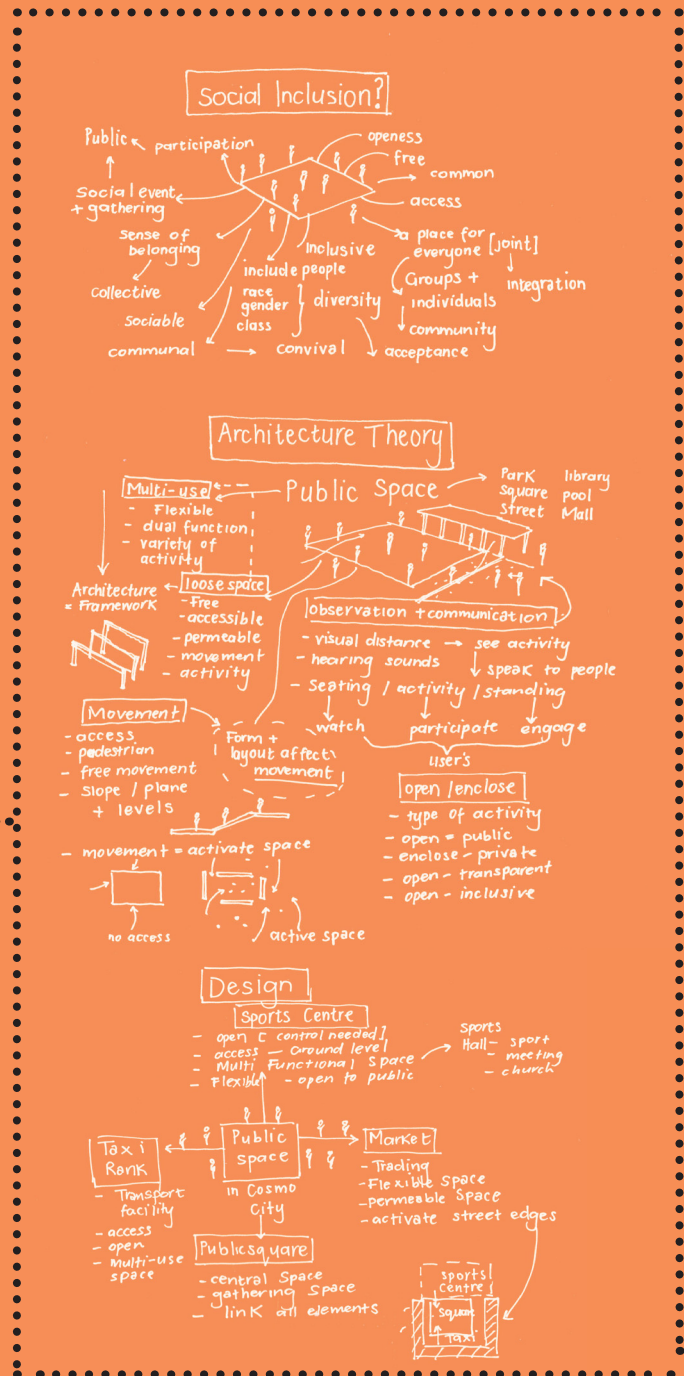


Raised platforms and ramps, provide play spaces for the children (Image by: Tom Madlener Detail 2011.4)

Programme Summary

The above programme and spaces have the intention to encourage social interaction in Cosmo City. They are all treated as public urban spaces that will aim to support and set the pre-condition for creating an inclusive space within a fragmented development. The spaces are also placed in a manner that will allow each space, being the sports hall, taxi facility market and trading space to overlap and spill over into the other space. Creating a cohesive multi-functional space that will allow for various social interaction to occur and diverse people to meet. Which will then begin to set the foundation for an inclusive space that will create a sense of community and place in Cosmo City.

Translating theory into Design



Sports Centre

Pool		Weekdays: School swimming classes+ public swimming lessons Public pool on weekends
Gym+studio		Gym training sessions+ aerobics, fitness,Yoga,dance classes
Squash Courts		Squash practice + matches
Sports Hall		Indoor sports: karate, gymnastics, badminton, volleyball, basket ball,netball,indoor soccer Social events: concerts , community+church gatherings, dance and drama practice
Homework area		Homework area+Internet access+workshop area
Workshop rooms		NGO workshops+ homework clubs, community meetings, Study group , dance & Music classes.
Cafeteria		Lunch with friends, Family lunches on weekends,Function+gatherings+events

Market

Trading stalls		Shopping+trading: Haircut,Beauty salon, buy groceries +take away food
Covered walkways		

Taxi Facility

Waiting area		Transport
Taxi drop off and collection area		

Public Square

Outdoor paved area		Trading,weekend markets,Social events,political gatherings,public concerts.Children play area
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Chapter 4

Design Development

4.1 Charette exercise

4.2 Site Selection

4.3 Site Response

4.5 Design principles

4.6 Design developement

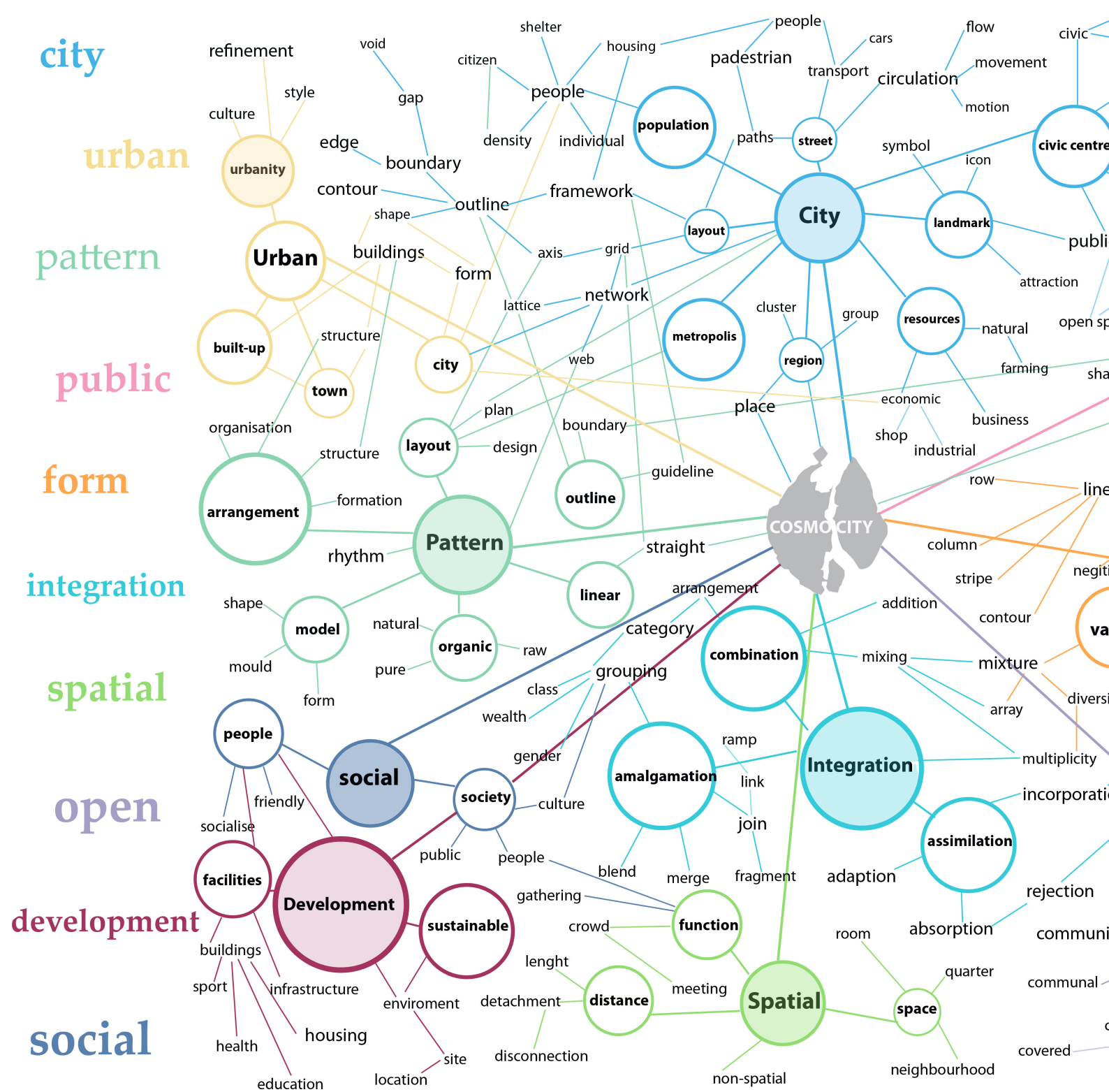
4.1 The Charette exercise

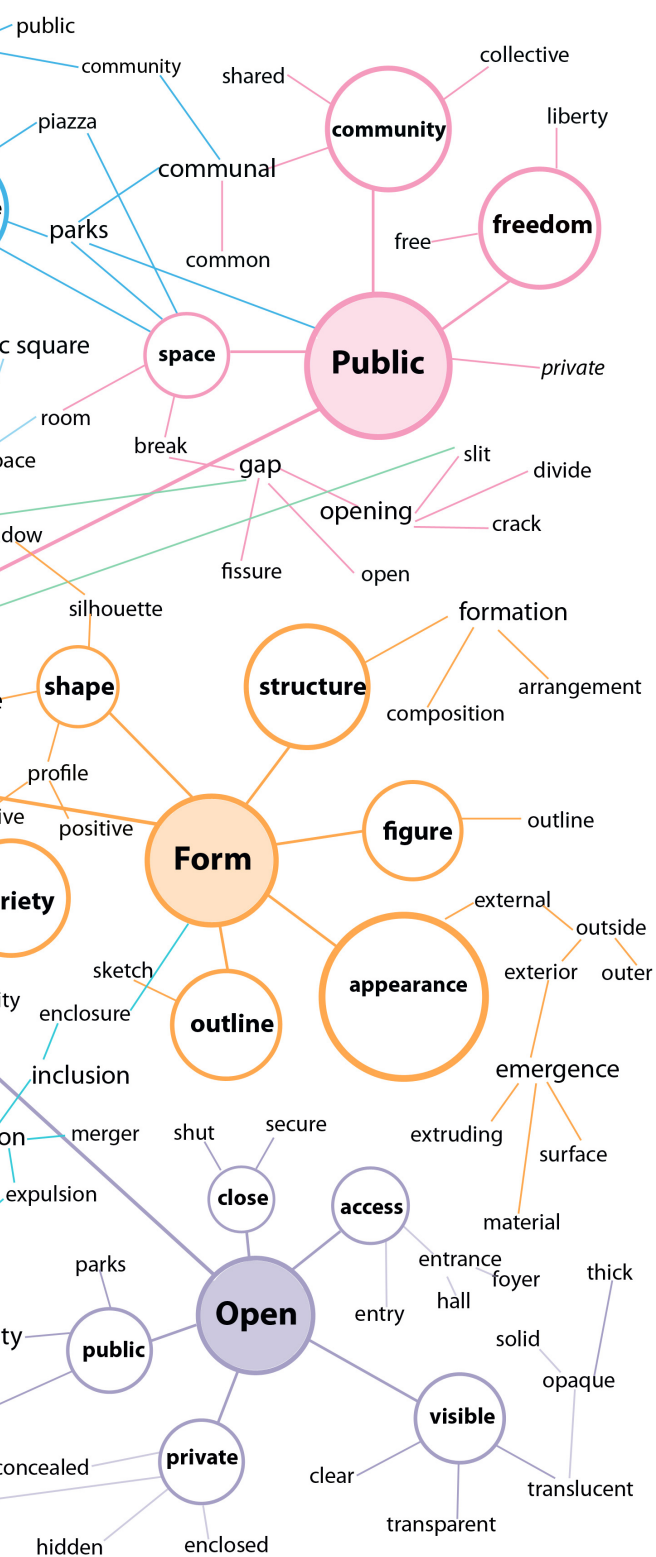
9th May-17th May 2011

Charette

The charette exercise was a one week exercise, designed to explore various design tools that would assist one in translating their theoretical component into design tools that began to inform and direct the design process. The charette was divided into four tasks.

The exercise demonstrates a few processes that were used to go from theory into design.



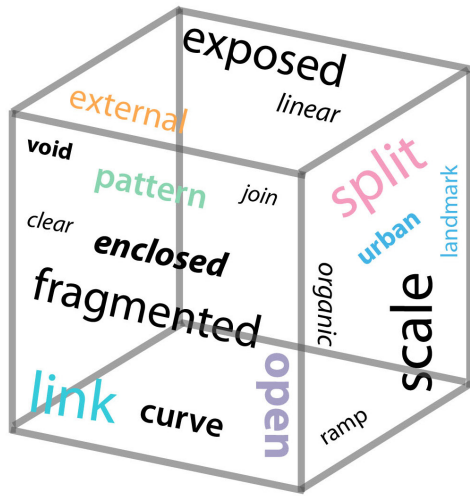


Task 1

Using a word cloud algorithm on the internet (wordle.net), in which the essay was inserted to. Which then developed a word cloud from the essay. The essay would then be analysed and the most frequently used words in the essay would appear. These words would then indicate what the predominate topics are in the essay. The second part of this task was then to take the words from the word cloud and find synonyms, antonyms or metaphors to help convert more abstract words into hundred architecturally useful words. Once that task was completed, we had to graphically illustrate the mutations of the words and then categorise them into three categories of site, programme and form. Which would then begin to show what element is the design driver for the project.

Outcome

The essay that was used to generate the word cloud was written on Cosmo City and the analysing of this development. The words that frequently appeared in the word cloud, then spoke about the 'city' as a place for integration through public spaces that were open. The summary of the datascape then clearly indicated that site is the main design driver of the project.



Task 2

The second task was to select several keywords from each category of site, programme and form. These words should represent concepts that might be considered as design drivers from the theory, and inform the architectural process later. These words had to be translated into diagrams and sketches that explore the words.

Outcome

The following words were chosen from each category.

Form: Split, Link

Programme : Mix, cluster

Site: Movement, access and open

The words created interesting mutations, where some even began to contradict the other, such as split and link. The sketches and diagram assisted with various design principles that began to inform the design and architecture.

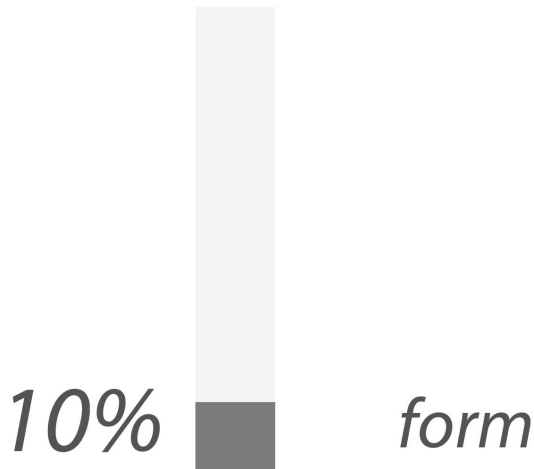
Task 3

The third task was to select at least three concepts expressed in the sketches (one from each site, programme and form categories) and turn them into at least twelve process models. Which should show the three dimensional, light, shadow quality of the model.

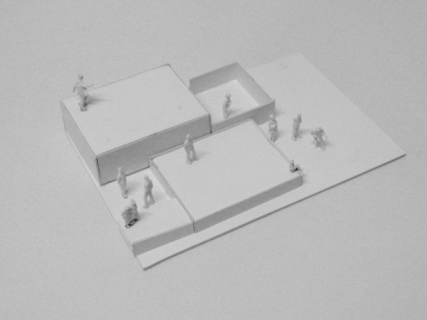
Outcome

The models began to physically show how words such as movement and access could be translated into three dimensional forms. That started to show how architecture could evolve out of these conceptual sketches.

This graphic illustrates that from all the words generated in the info graphic mind map, most of them fit into the site category. Therefore making site the design driver for the scheme

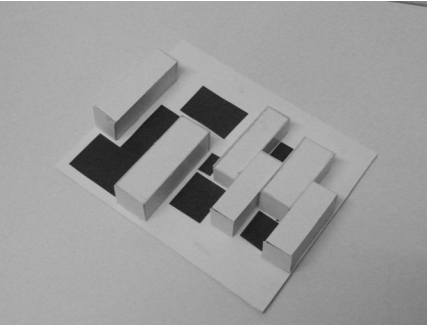
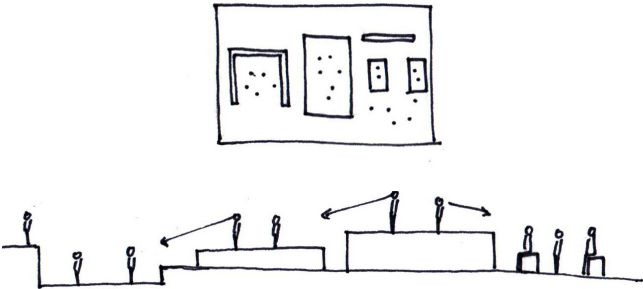


Sketch Models



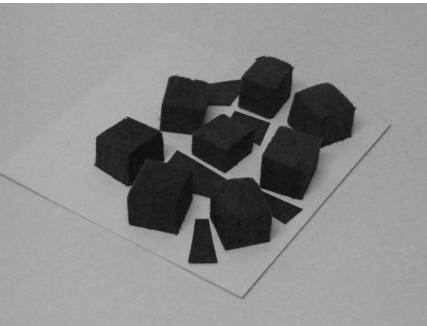
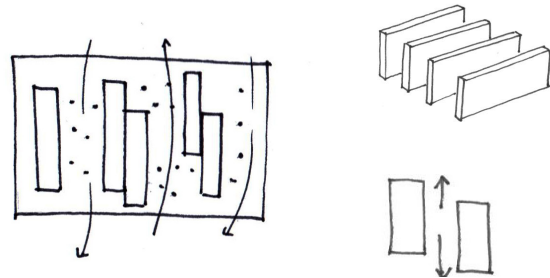
'Mix space'

Spaces can be designed to allow for flexible use. Raised platforms are used for gathering spaces or a performance



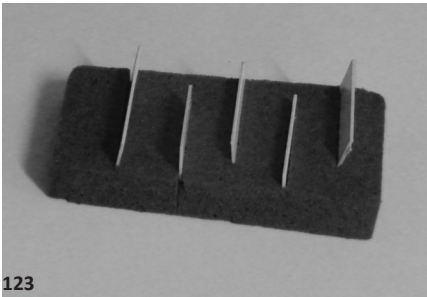
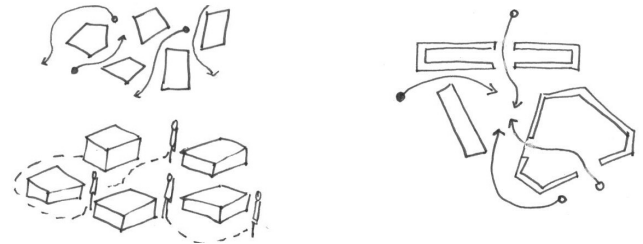
Split

Forms can be split to create smaller pockets of internal spaces.



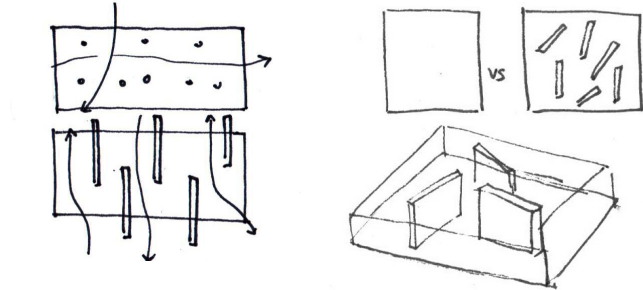
Movement

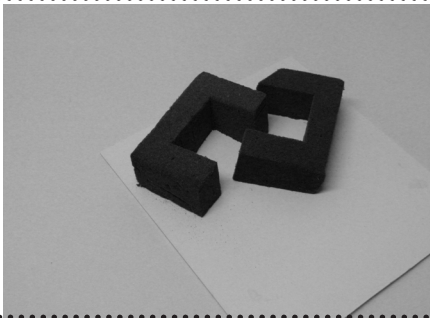
Fragmented scattered forms allow for free spontaneous movement.



Split

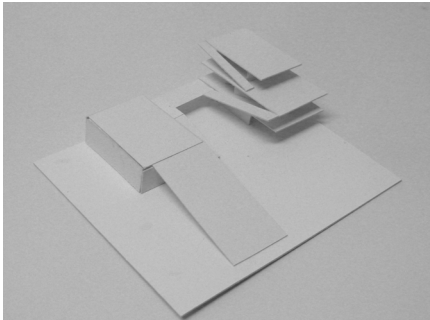
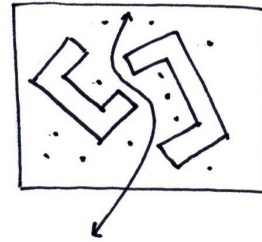
A plane can split a form or space to create divisions in a space





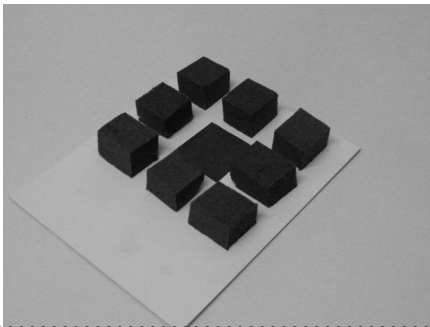
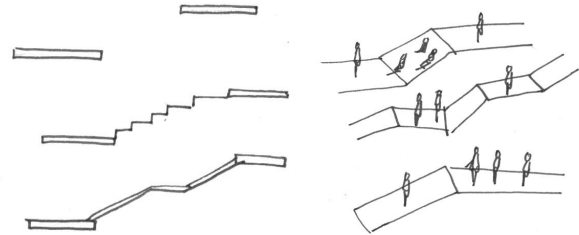
Link

Forms can be linked by a open public space



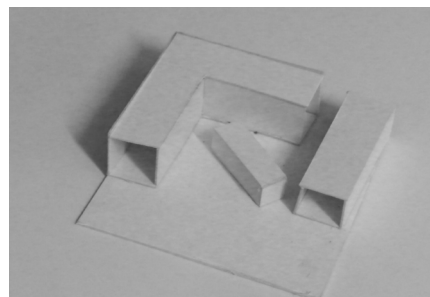
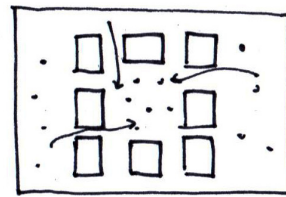
Link

A space can be linked with the use of platforms, ramps and stairs.



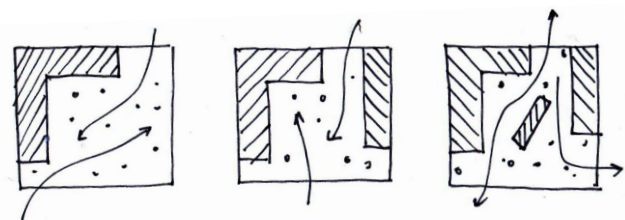
Access

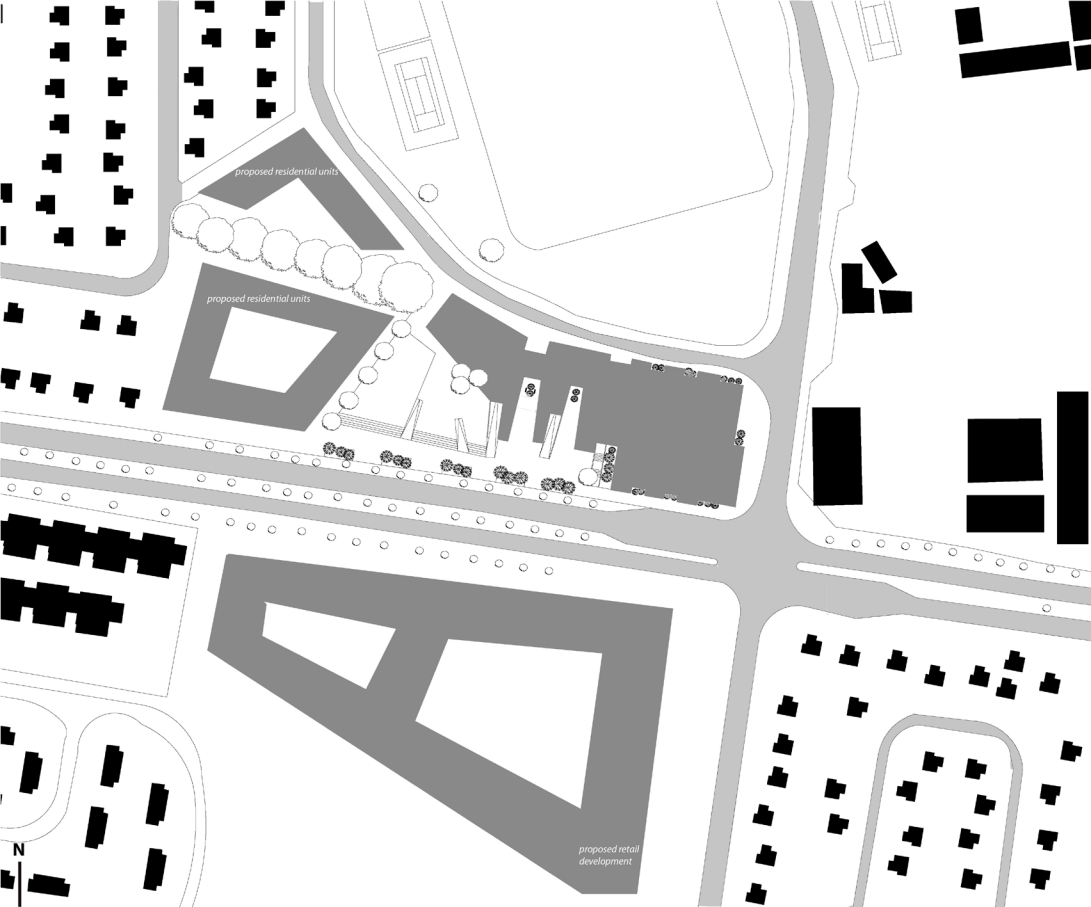
Multiple openings in a form allow for easy access and movement



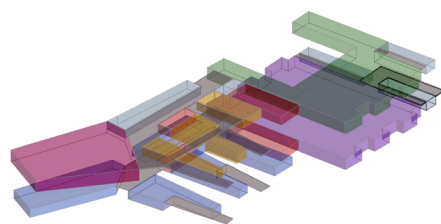
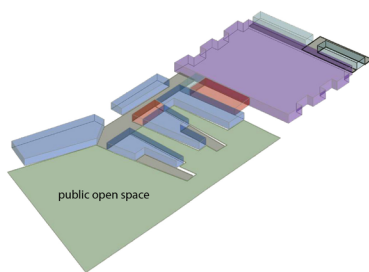
Movement

The layout and form of a design affects the movement within a space





context plan



building program

public gym

public library

public space+square

retail

NGO offices

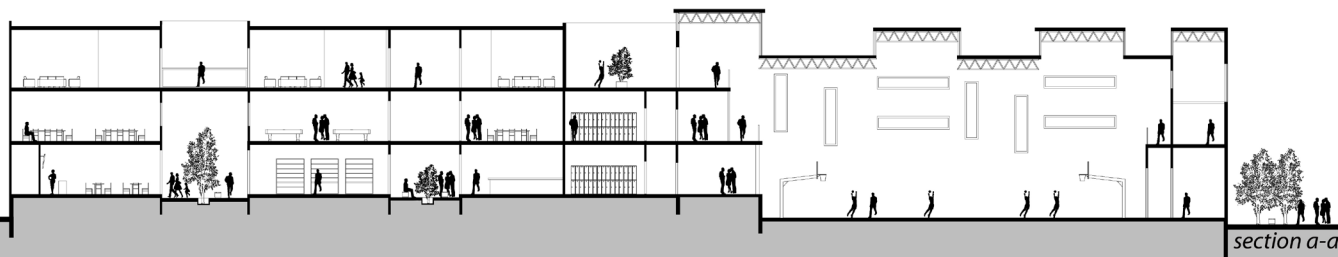
basket ball courts+sports hall

activity rooms+homework

rooms

sport offices

125



section a-a



Task 4

The final task was to combine all lessons learnt from the previous task and translate them into architecture. The design process should now begin to look at site, programme and form simultaneously to generate a scheme. Conceptual plans, sections and site plans had to be produced for this final task along with perspectives of the building or a specific space in the building.

Summary of Charette exercise

The charette process was a great way to get into the architecture of the building through exploring various design tools, such as sketching quick spatial ideas and making conceptual models. The most helpful part of this charette is that it clearly indicated that site would be the generator of my scheme and that I was able to select a site in this process. However the building that was produced did not create an inclusive space and did not respond to the context. I had to now go back a step and analyse and understand the context and site, which would inform the design. The charette process also pointed out that a clear programme needed to be generated which was suitable for the site.

4.2 Site Selection and Analysis

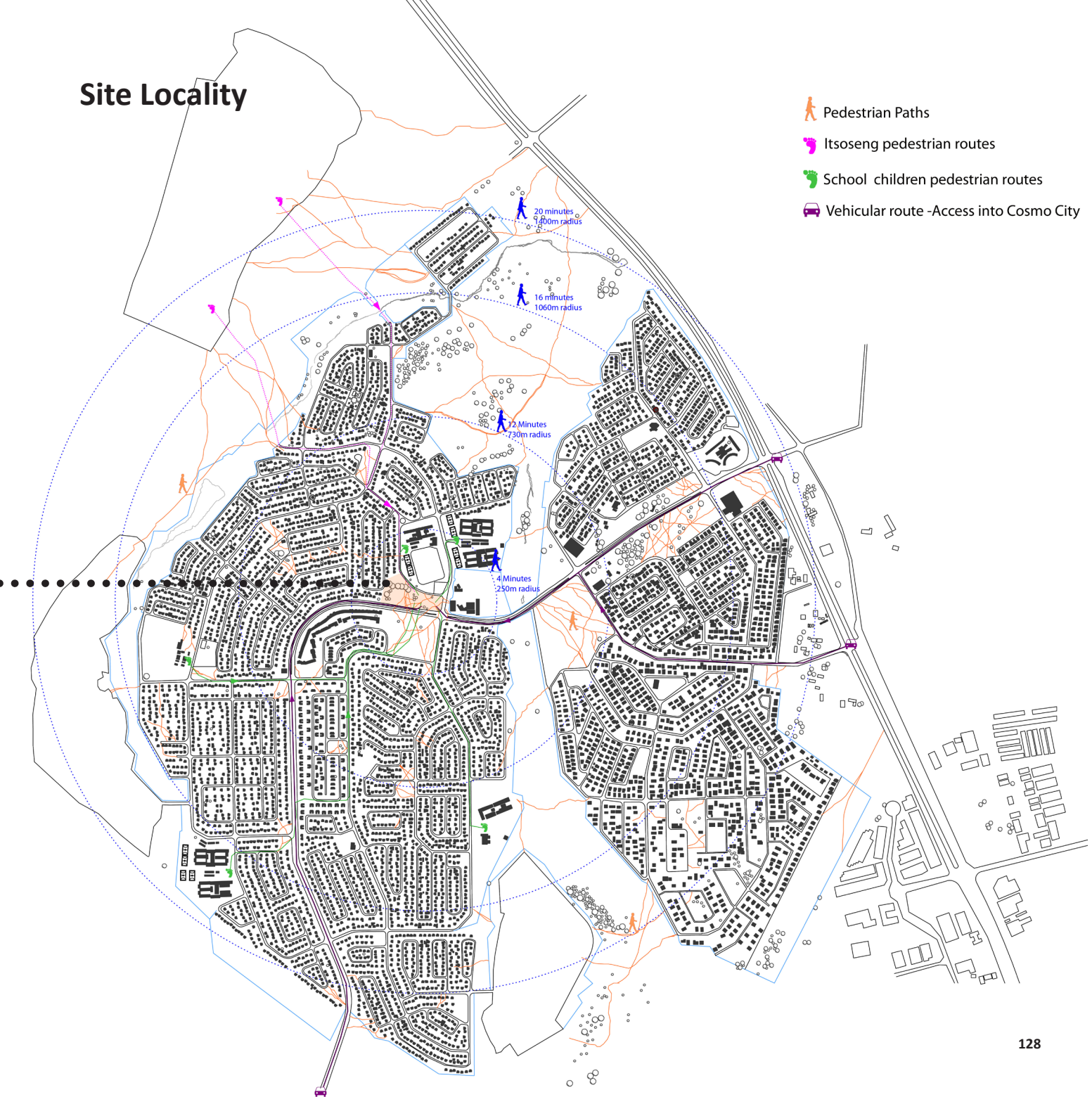
Site

The selected site is located centrally in Cosmo City, where its quit accessible to most of the residents of Cosmo City. The site sits along the main road, South Africa drive, making it accessible and in addition visible from the main spine for those coming from outside of Cosmo City. This site was selected because of the diverse inclusive activity[Trading,church gathering and taxi rank] that was taking place on the site. Because of all the taxi's using this as their main drop off and collection point, it then generated a great deal of pedestrian traffic on the site.

This site is the central arrival and departure zone in Cosmo City. With the taxi activity occurrence on site, it begins to generate additional activity on the site such as trading and take a ways. What makes this site ideal, is its potential to provide facilities for the surrounding three schools that lack general sports facilities. The site can then function as an extended part of the school, that will be able to use the sports facilities during school hours. The site in terms of size and scale will furthermore allow for the large spaces required in a sports centre.

Site Locality

-  Pedestrian Paths
-  Itsoseng pedestrian routes
-  School children pedestrian routes
-  Vehicular route -Access into Cosmo City





Surrounding Context

a Low cost houses



b Cosmo City Secondary No.2
Grade 10-Grade 12



c Cosmo City Primary No. 1
Grade 4-Grade 6

d Cosmo City Junior Primary school
Grade R-Grade 3

e Cosmo City Community Centre
Designed by Tshepega Engineering. The project will be completed in September 2011.

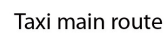
f Hlanganani Gardens
Designed by ASA Architects. It has 182 Rental Units in 2-3 storey walk up.



g Future commercial development

h Low cost houses







.....**Zion Christian Church**

The Zion Christian Church uses the top western portion of the site for their church gatherings that occurs every day from 4pm till about 6pm in the evening. A tent structure with garden chairs make up the makeshift church. The tall trees on that side of the site provides generous shade for the church.



.....**Steak 'n Roll Inn**

The Steak n' Roll take away operates from a caravan. This business has been on the site for the past three years. They get quite busy during lunch hours and after school is over.



.....**'Meat Restaurant'**

Under these trees a group of men have set up a 'restaurant' that sells meat which they cut and cook on the site. This activity is not on the site every day.



.....**'Mobile spaza shop'**

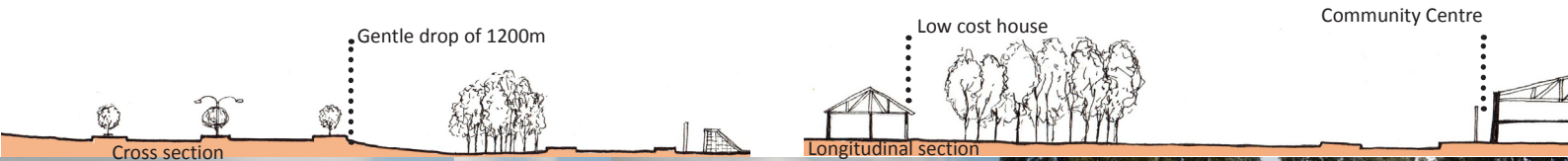
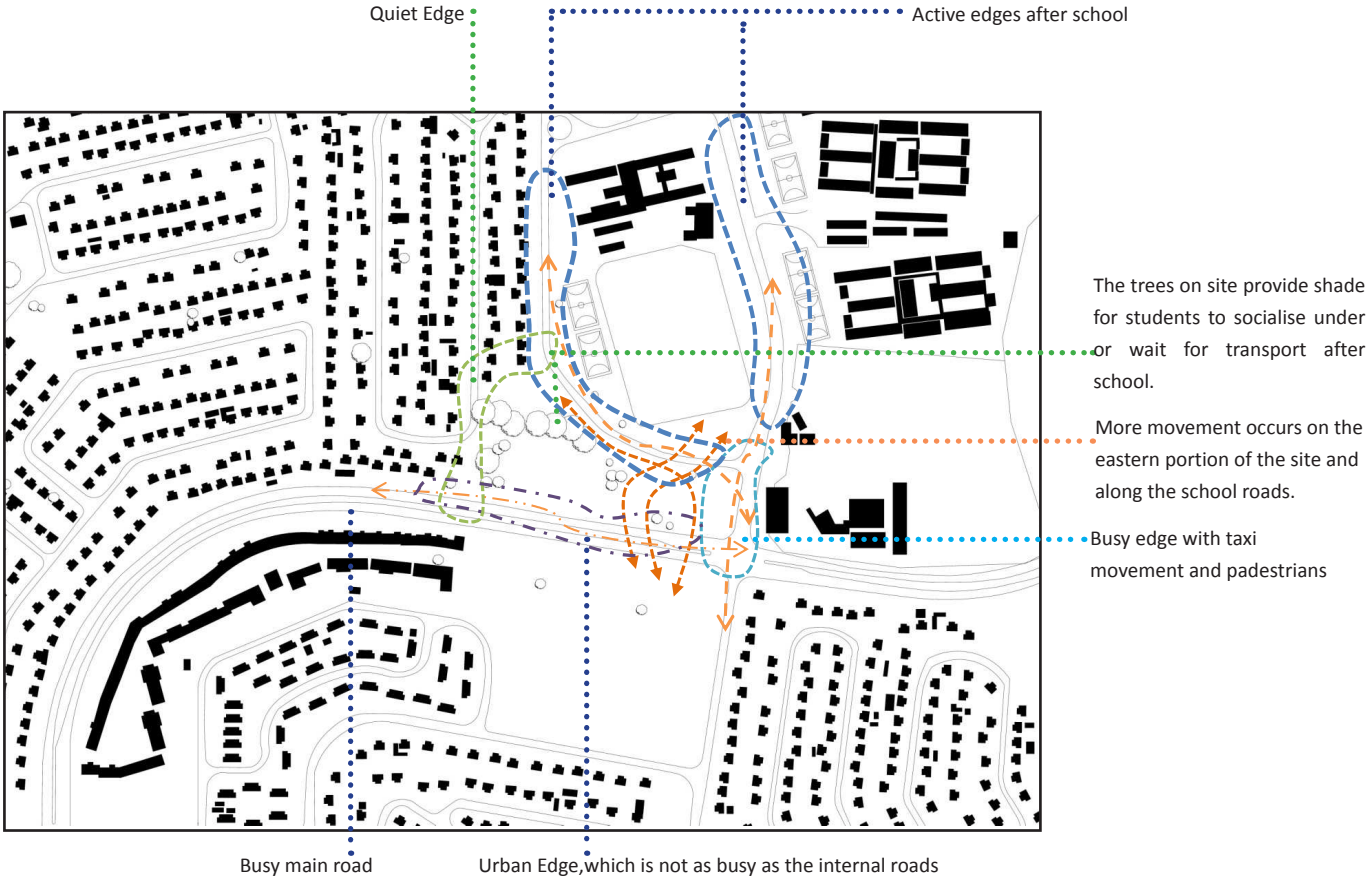
This gentleman runs a 'mobile spaza shop' made from a shopping trolley and wooden crates. He was a little sceptical to speak to me about his business. He sells sweets and provides a pre-paid phone service which does well on the site.



.....**'Taxi Rank'**

The eastern edge of the site is being occupied by taxi's that use this portion of the site as their temporary 'taxi-rank'. They selected this portion of the site because it was vacant and is accessible to most residents of Cosmo City.

Site analysis





Pedestrian movement across the site after school is over in the afternoon



Children playing on the site after school



Movement across the site



The trees on site provide a shaded area for students to socialise after school or wait for their transport



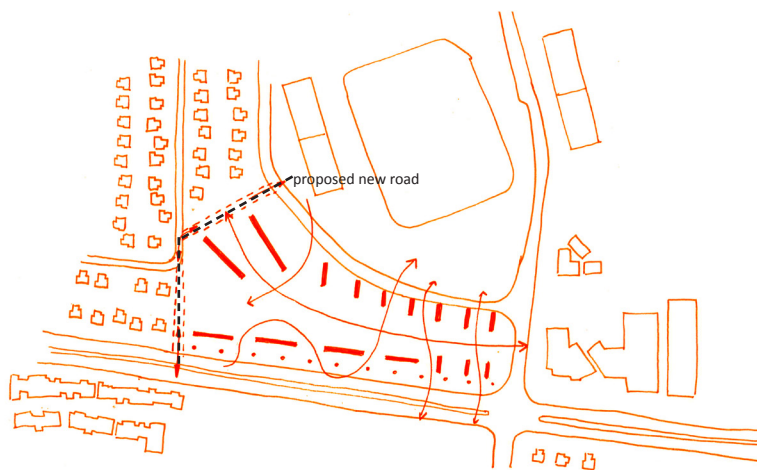
Panoramic view of the site





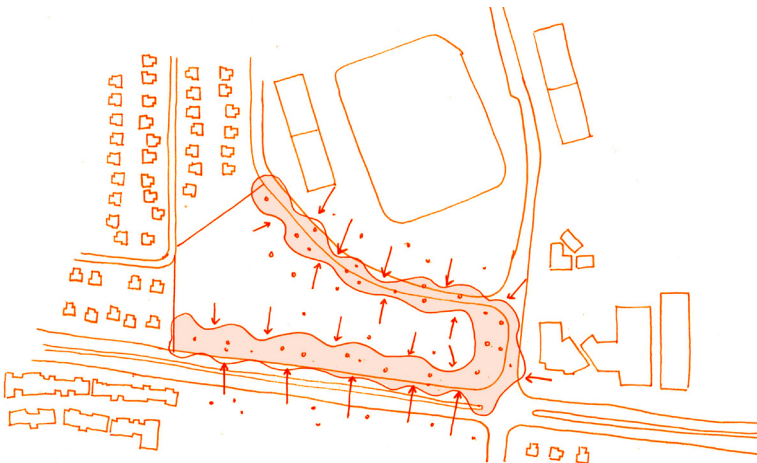
Afternoon activity outside the schools that are located close to the site

4.3 Site Response



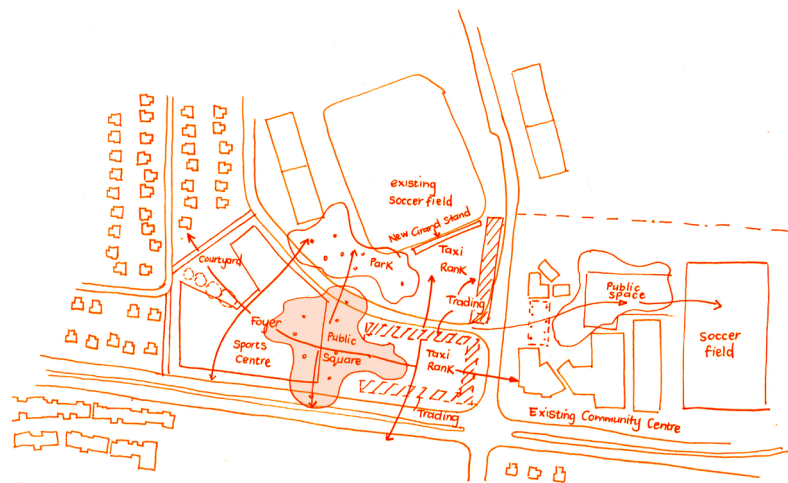
01.Movement and access

The site allows for constant movement throughout the day, and therefore the design approach to the site should allow for easy access and movement. A road on the western edge has been proposed to allow for movement around the site, that will also link it to the main road.



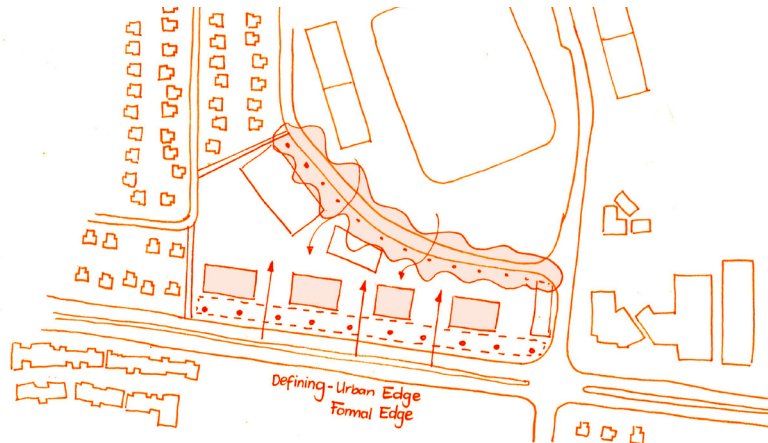
03.Activating edges

Looking at the context of Cosmo City, all the activity occurs on the street edge. Therefore the site needs to apply this same principle and activate the street edges by placing activities on the edge that will generate activity.



02.Clustering of activities

The site must accommodate various types of activities, that can cluster and spill into the public space. All the spaces need to link across the site and respond to the surrounding context.



04.Responding to the 'type' of street edge

The southern edge of the site, is the more urban and formal edge to the site, therefore the design needs to respond by creating a defined formal edge. The northern edge of the site, is more informal and flexible. Therefore its design should be more fluid.

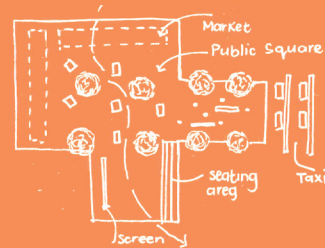
Movement+Permeability



The form and layout of the design will need to accommodate easy movement across the site, and allow for the edges to be permeable and not solid

4.4 Design Principles

Multi-use public space



The public space needs to be designed to accommodate all users and various types of activity.

Scale



The scale of the building needs to respond to the surrounding context and human scale

Visual Connections



The building should be designed as an open and transparent space, allowing for visual connections at all levels

Overlapping spaces+activities



The layout and section of the building, should allow for spaces to overlap and intersect. Which will allow for different activities and people to engage visually

Pockets of spaces+clustering



The layout should have spaces that are linked through main public spaces, but at the same time create pockets of spaces that groups or individuals feel comfortable in.

Natural Light



Due to the spaces being quite deep, it will be important to consider how natural light can be brought into a space

Open and enclosed spaces



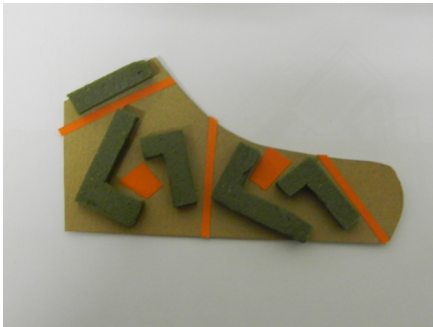
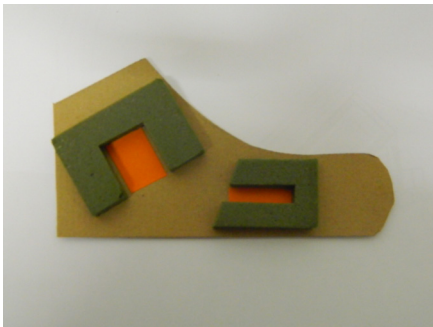
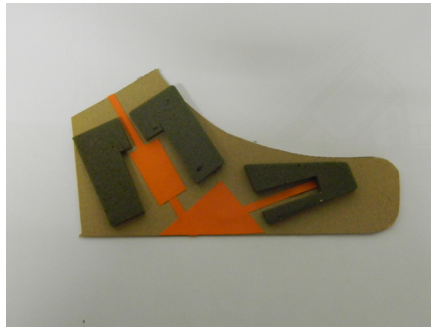
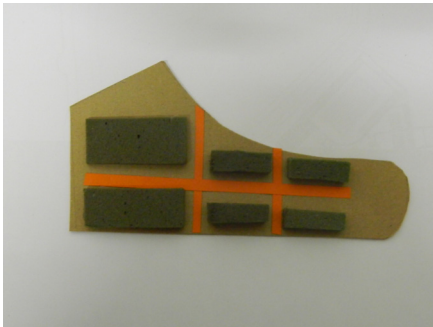
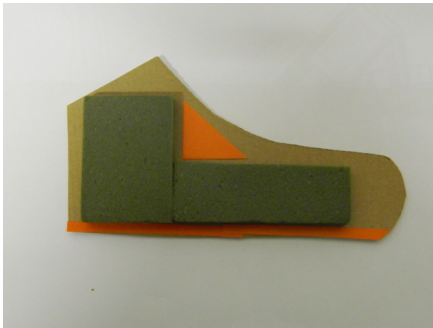
The building should have both enclosed and open spaces, that allow for different activity to occur in those spaces

Flexible plan



The plan should be designed to allow spaces to be used for different types of activities

4.5 Generating Form

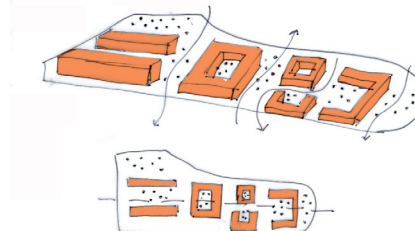
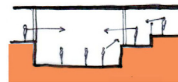
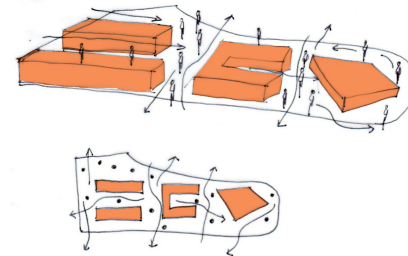
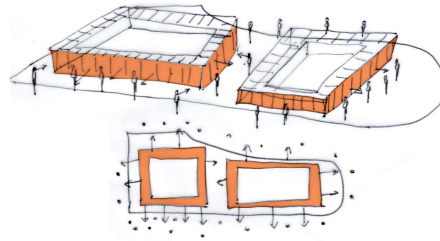
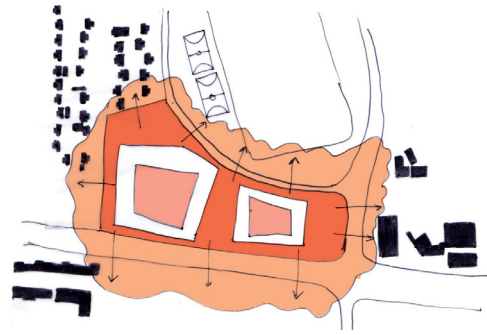


The sketch models assisted with understanding what type of form would be suitable for a site that is linear and narrow on one end and wider on the other side.

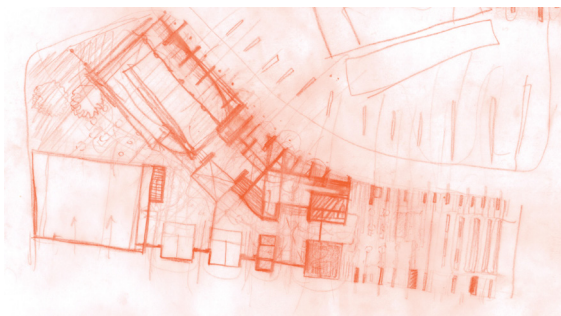
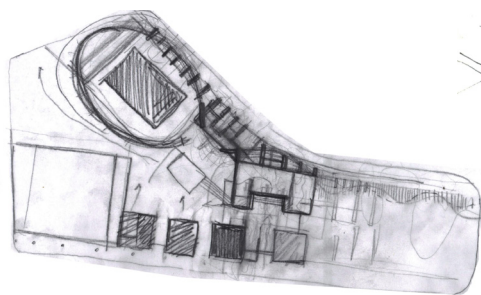
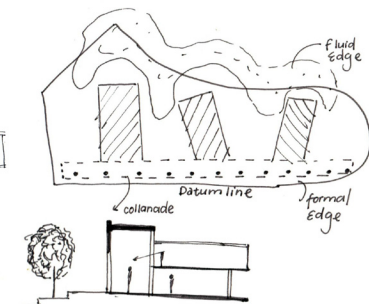
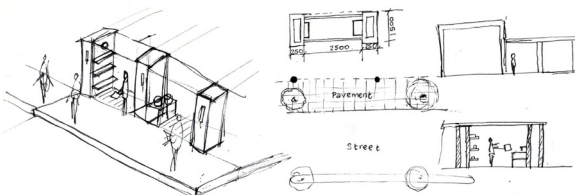
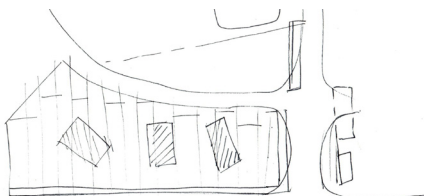
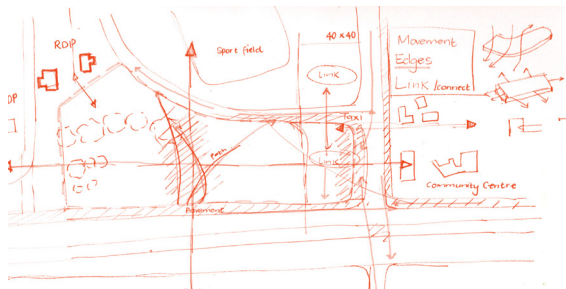
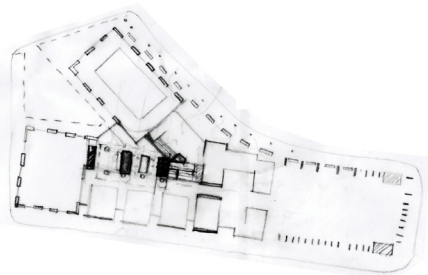
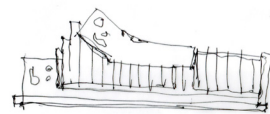
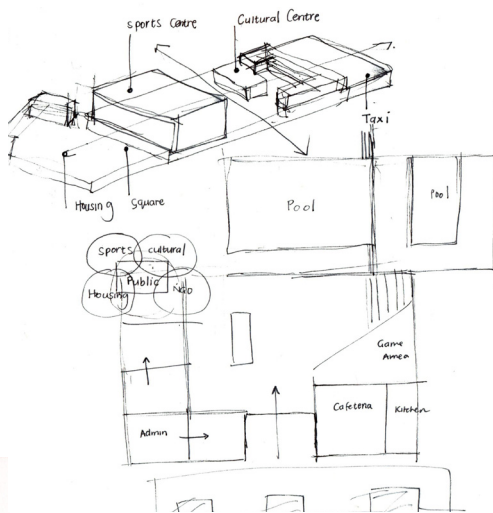
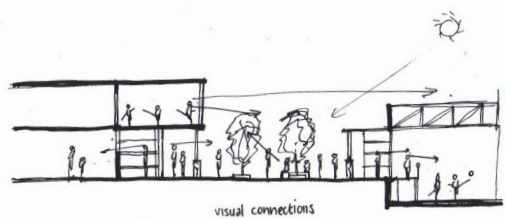
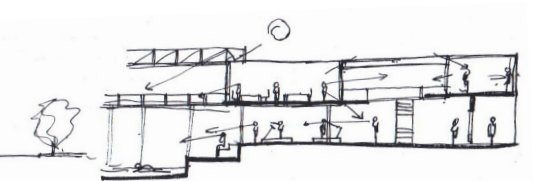
Using too many smaller forms, created a fragmented footprint on the site. The larger forms seem to work well when they were split into smaller forms and linked together by outdoor public spaces. Which worked better on the site.

4.6 Design Development

Overview of review 2 and 3



conceptual ideas



Review 2 Overview



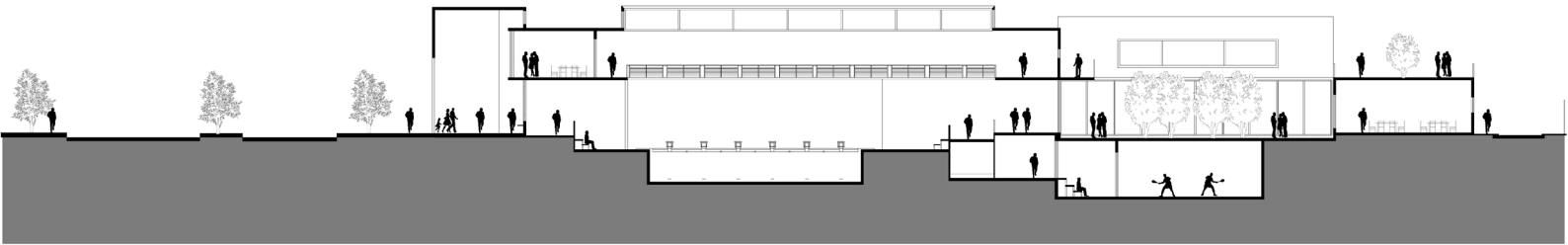
Review feedback

The jury felt that the programme of the building was too complex, and that certain functions were being duplicated. They suggested that the programme became more specific, but design multi-functional spaces. They also felt that the design did not respond to the context and site edges. It was also mentioned that the existing activity on site, taxi's stopping and trading was not emphasised enough in the design.

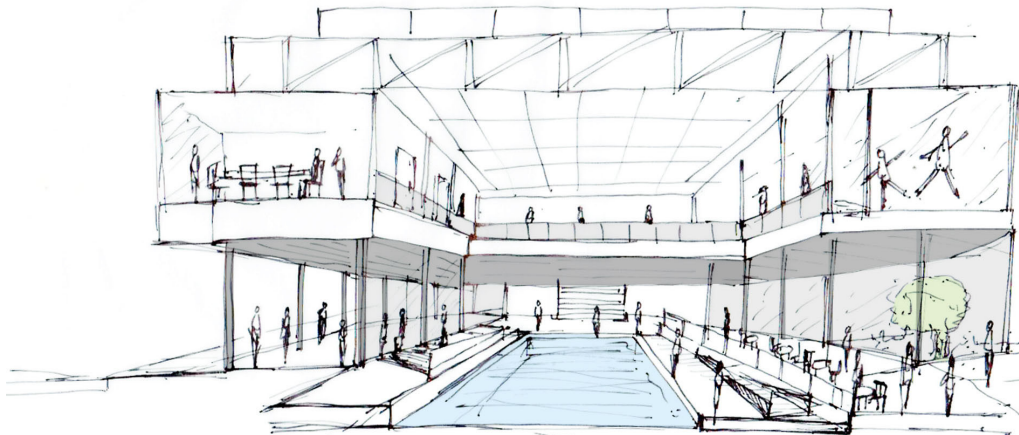
Proposed Programme

- Sports Centre [Pool,sports hall,cafeteria,squash courts,children playroom,teen lounge]
- Cultural Centre [Auditorium,foyer,dance and music studio]
- NGO Facility [Offices,workshop room,courtyards,homework area]
- Public Space

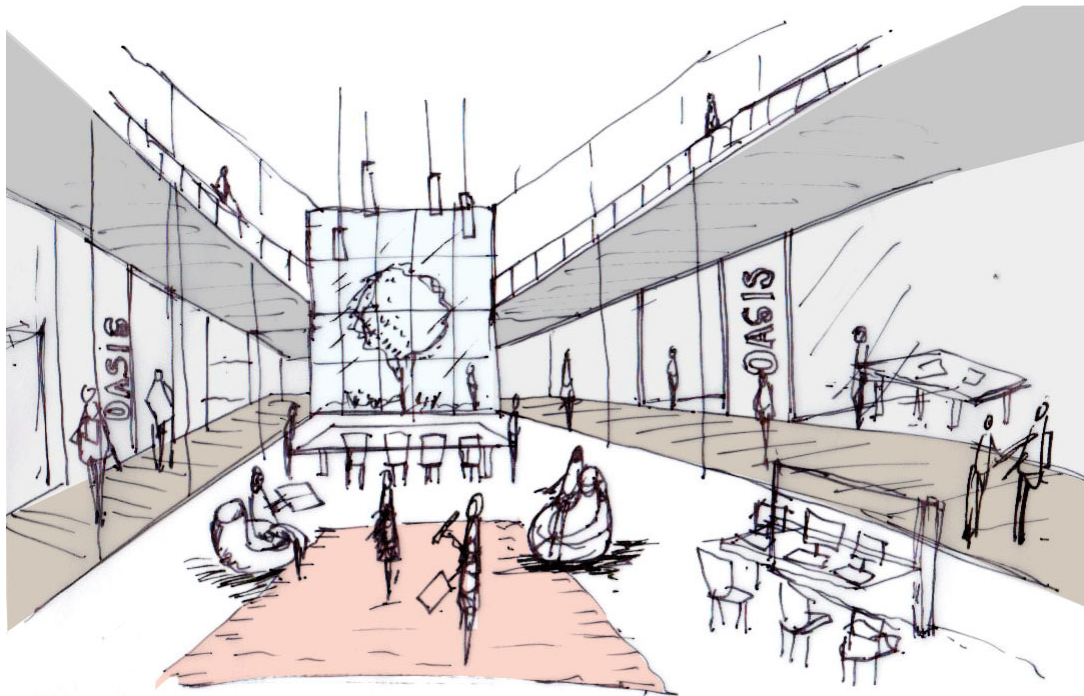
Cross Section



..... Conceptual sketches



Internal perspective of the Sports Centre



Internal perspective of the Oasis NGO facilities

Scheme 01

The sports hall is placed on the eastern edge of the site. Having a solid form on this edge prevents it from being fluid and active. The foyer spaces are too thin and narrow. There is no link in the scheme.



Back to the drawing board

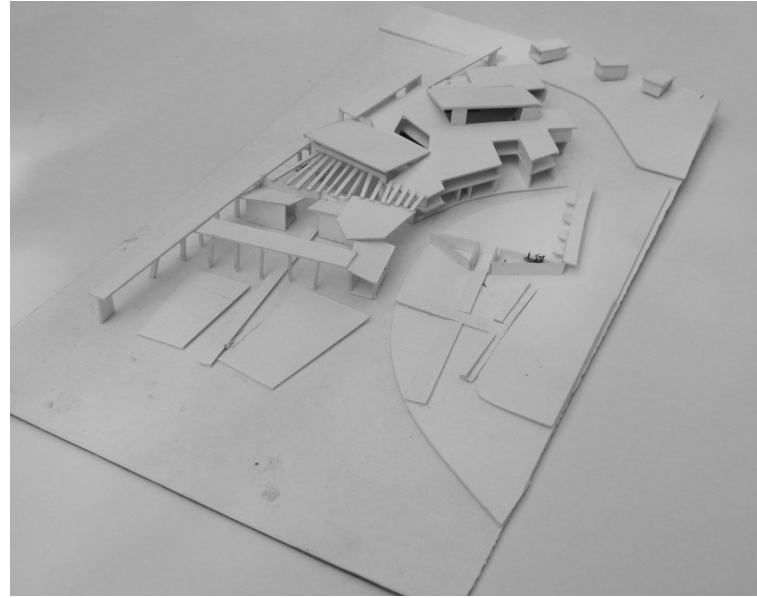
Scheme 03

The sports hall, now moves to the northern edge of the site. This allows the foyer space to open up. However the position of the sports hall creates awkward junctions with the street edge. The trading space now defines the eastern edge and allows for it to be active.



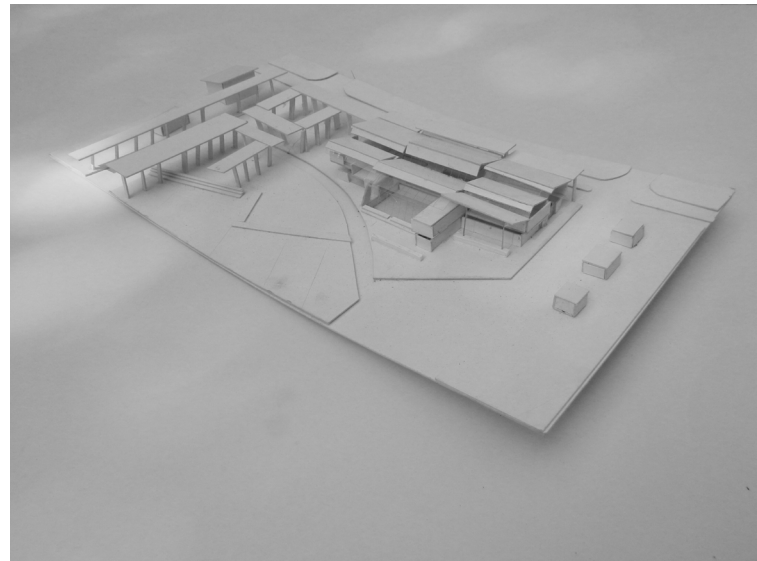
Scheme 02

The sports hall is moved to the centre of the southern edge. This prevents the foyer space from opening up because the sports hall takes up too much space in this position.



Scheme 04

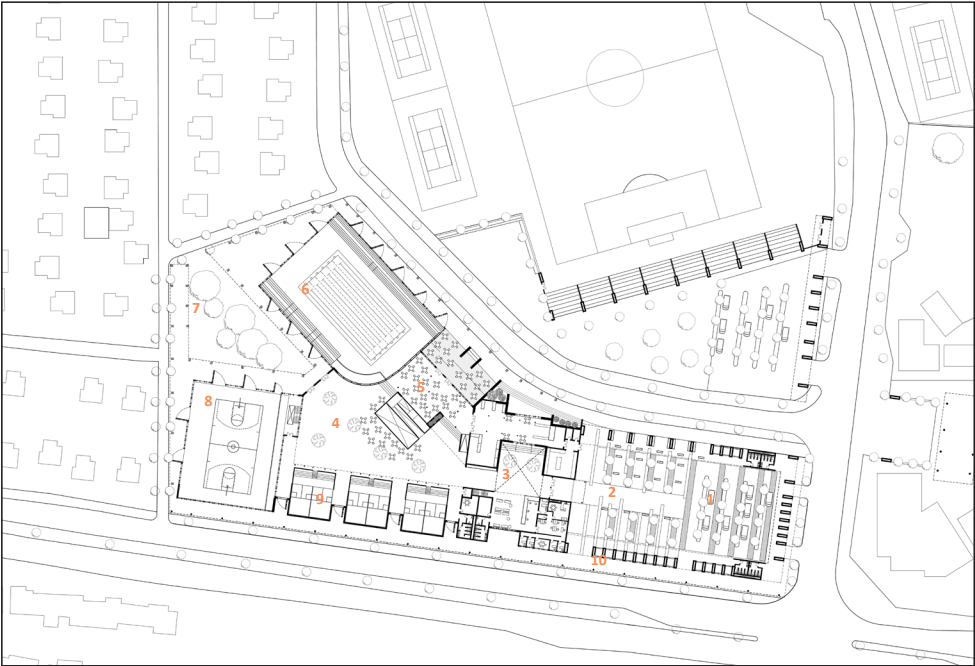
The sports hall moves to the western edge of the site, where it anchors the building in the corner. The pool is then moved to the northern edge, where it defines the street edge and gains north light. The foyer space opens up, and filters outwards.



Scheme 03



Review 3 Overview



Proposed Programme

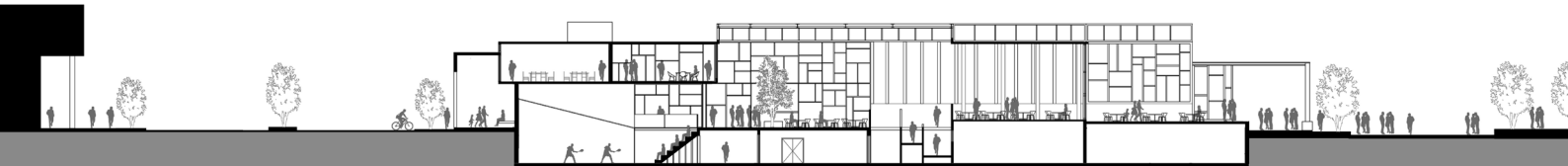
- Sports Centre [Pool,sports hall,cafeteria,squash courts, Homework area]
- Market [Market stall and covered walkways]
- Taxi Facility [Waiting area, drop off and collection area]
- Public Space

Review feedback

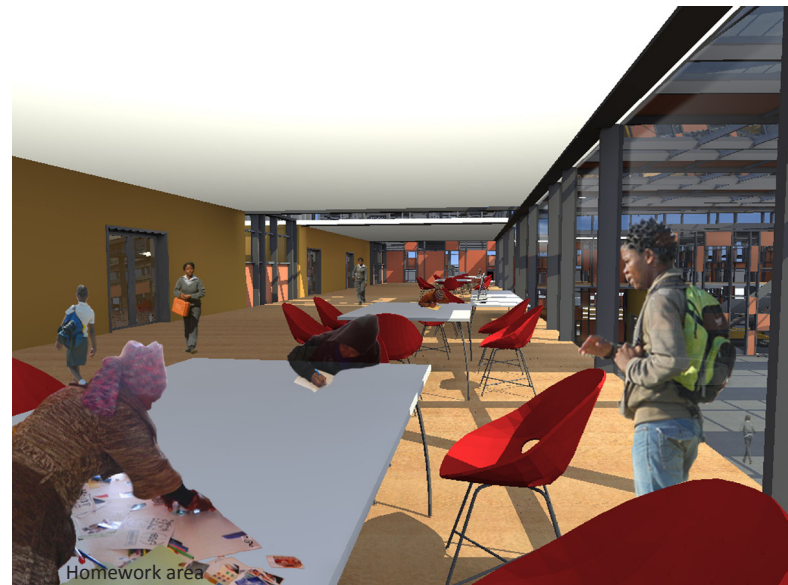
The jury thought that combining sports, trading and transports in a programme was suitable for the context and that the right site was selected. They felt that the layout did respond to the site and that the spaces linked well. They mentioned that the facade opening up as a door must be re-designed to allow people to walk past easily. And that the structure of the building was not visible.

- 1.Taxi Facility
- 2.Public square
- 3.Entrance Foyer
- 4.Main Foyer
- 5.Cafeteria
- 6.Swimming pool
- 7.Courtyard
- 8.Sports Hall
- 9.Squash Courts
- 10. Market stalls

Cross Section



..... Cosmo City Sports Centre Perspectives



Chapter 5

Design & Technology

5.1 Site response and massing of programme on site

5.2 Cosmo City Sports Centre

5.3 Construction and Technology

5.4 Design Summary

5.1 Design response to site