

BRICKFIELDS: SOCIAL HOUSING - ENCOURAGING DIVERSITY

URBAN SCHEME DESIGN - 3 BLOCKS IN NEWTOWN

LOCALITY: SOUTH AFRICA

- South Africa - largely considered the leading nation in Africa
- Other nations look to SA to bring financial aid as well as more long-term foreign investment
- These nations also look to South Africa as a role model for bringing about social, economic (and sustainable) development
- Therefore, SA MUST exercise world-standard best practice in all fields of sustainability
- SA has a long history of gross inequalities. This has left the current generation with a number of issues, not least of which are a lack of housing and a large amount of unemployment
- SA not only has to deal with bio-physical issues of sustainability, but is particularly challenged with the socio-economic and socio-cultural issues as well

LOCALITY: GAUTENG

- Gauteng is the economic heart of SA. It is responsible for a larger portion of the GDP than any other province
- It is also home to one of the greatest inequalities between rich and poor in the world. This has resulted in extreme wealth existing in close proximity to extreme poverty - and a comparatively small middle-class

LOCALITY: JOHANNESBURG

- Johannesburg is where these inequalities meet
- It is home to more diversity than most African cities. As a result - large ethnic of people not only compounds housing and employment problems, but brings a huge amount of opportunity to a city

LOCALITY: NEWTOWN

- Newtown is a precinct in the Central Business District (CBD) that has been targeted by Blue IQ as a point of significant investment
- It has been branded as the 'cultural precinct' and could be characterized as a mixed-use environment - craftsmen, theatre, retail, warehouses, transport etc.
- Blue IQ identified a site adjacent to the Nelson Mandela bridge as well as the Metro Mall tax-rank for a 700-UNIT SOCIAL HOUSING COMPLEX

SCHEME EVOLUTION OUTLINE:

The Brickfields Social Housing Development consists of three blocks in Newtown. Before focusing on the detailed design of one of these blocks, it was necessary (as an academic exercise) to establish a general urban strategy for all three. The idea of a perimeter block, each with a certain prescribed number of towers was given as a basic requirement. Our strategy evolved in three stages and worked on the following ideas:

STAGE 1

Messing (3D Above): The first messing diagram looked at ideas of sun orientation as well as having the hard edge of the towers facing the CBD. Smaller towers were located on the North facades and oriented towards the public square.

Zones (Plan - Right): This plan identifies certain areas within the perimeter blocks that the public could have controlled access to. This was done in an attempt to encourage diverse interaction with the general public and give the city itself access to that all-important and rare green space. As one can see, the middle block is where the most public interactions and activities take place - this would feed off the very pedestrian-friendly internal streets. The corner block was identified as having a human scale that was conducive to leisure.

Access 1 Flow (Plan - Right): These semi-public spaces would bring flow of people and this plan shows the possible routes that one could take through the scheme. As one can see, the blocks are fully conducive to easy pedestrian access and movement but access can also be monitored and controlled from the various access points.

Interactions - Economic Nodes (Plan - Right): Interactions have been identified as nodes of potential economic activity (yellow circles).

STAGE 2

Messing (3D Above): The second messing diagram started looking at providing a face to the CBD. It also wanted to use the towers as elements that serve as scale markers for movement through the blocks. This evolution also started looking at the internal spaces and how they relate to the public space.

Parking (Plan - Left): Basement parking means one can clear ground floor for pedestrian movement only. Also, by keeping the majority of parking under the outside blocks, we could free up the middle block for large areas of green planted space. More than 600 bays were provided so the basement could offer parking for other users of the CBD (because the scheme is so close to the taxi rank, the basement could also serve as a point from which people could move from private transport to public transport).

INDIVIDUAL BLOCK DESIGN - NORTH-SOUTH STRIPS

Internal blocks

- north facing internally located
- facing south to north
- massing gradually steps back every floor to create feeling of space for the residents
- height increases from north to south to increase lighting and views to the Mandela bridge

north block

- located on the northern edge of the site
- massing to intrigue passing traffic, having it slow down
- low rise walk-up blocks to allow adequate lighting and views from within precinct

north - south STRIPS

SOFT ENVIRONMENT:

- The North-facing strips were designed with specific emphasis on creating a controlled environment with a 'residential feel'. This was particularly challenging as the blocks had to be of an extremely high density to accommodate the number of units required.

SUN ORIENTATION

- located on the south north
- Both the ground and the strips have been stepped so that the front strip (north) is the lowest and the back strip (south) is the highest. This maximizes the amount of sun that they "catch".

MIXED INCOME / SIZE

- The north-south strips are characterized by a wide diversity of residents - income, age, cultural background and number.
- The structural grid was designed to accommodate a range of one, two and three bedroom units at potentially any point in the scheme. It was also designed to accommodate change and growth.
- One, two and three bedroom units are distributed strategically throughout the scheme so as to encourage a diversity of incomes and ages. It is believed that this strategy is essential to allowing for the chance interactions that bring about innovation and development.
- The mix of typologies also creates a healthy urban environment and prevents "Ghettoization" which is brought about by forcing too many people from the same demographic group into a monotonous environment. This has been one of the major flaws in past examples of social housing.

FORM

- The diversity mentioned above is reflected in the form of the building.
- This was not a purely aesthetic exercise and brings about a number of advantages.
- The "shattered" facade gives the building a "rustic" feel that a flat facade of the same height.
- This "shattered" facade provides terraces of different sizes at different places in the building. The wide array of visibility that these terraces offer encourages outdoor living and this in turn creates a significantly better living environment.

GREEN SPACE - COURTYARDS + SKY GARDENS + ROOF GARDENS

- The scheme tries to not only maximize the amount of green space but also optimize people's access to these spaces.
- As such, they are distributed evenly throughout the scheme offering almost everyone either direct access to them or at least a view of them.
- Most of the gardens are placed on top of a slab, which, although would be an expensive exercise, was seen as essential to a successful scheme.

GROUND FLOOR PLAN

- Ground Floor Plan shows:
 - o Economic activities on the street edges - including retail and public transport
 - o Public activities on the courtyard edges - including crèches and an internet cafe
 - o Three bedroom family units in the internal strips

STEPPED PLAN - TYPICAL WITH SKY GARDENS

- This Plan has been stepped up through the scheme to allow the sky gardens at various different levels. It shows:
 - o Circulation through the strips - which not only makes full use of three storey walk-ups but also encourages access at different levels to any part of the scheme
 - o The sky gardens are flanked by administration facilities to give them a more public feel.

ROOF PLAN

- The roof plan shows the differentiation between sloped roofs and usable landscaped roofs. These landscaped areas give lower residents some connection to nature and also serve (in certain areas) as profit generating green space for food production.

CONTROL OF HEAT GAIN AND LOSS

NORTH FACING ADJUSTABLE TYPOLOGY

VERTICAL CIRCULATION

GREEN SPACE - COURTYARDS + SKY GARDENS + ROOF GARDENS

Vertical Pivot System

Wall Slider System

Light Control Angles by User

Needle Brick Type

SHATTERING SYSTEM

CONVENTIONAL WINDOW

1 BED ROOM

2 BED ROOM

3 BED ROOM

PUBLIC BUILDING

TARGET ISSUES KEY

- QUANTUM CHANGE AND TRANSFERABILITY
- ECONOMIC PERFORMANCE AND COMPATIBILITY
- ETHICAL STANDARDS AND SOCIAL EQUITY
- CONTEXTUAL RESPONSE AND AESTHETIC IMPACT
- ECOLOGICAL QUALITY AND ENERGY CONSERVATION