Design clarification
Ground floor plan
Lower ground floor plan

First floor plan
East elevation

North elevation
Existing buildings with functions on the site

All of the existing buildings will be incorporated into the design in order to strengthen the theme of recycling specifically on the reuse of dilapidated structures and their functions.

1: This is a mechanic workshop where taxis and cars are repaired and upgraded. Although the structure is architecturally of no value, the building was once a victim of a very artistic graffiti artist giving the skin of the building historical value of the true Marabi-culture meaning Marabastad culture in the locals' tongue.

2: Another mechanic workshop is used specifically for upholstery replacement. The roof of the building is in a poor condition allowing precipitation to soak the interior. A variety of bricks and brick bonds were used for the construction of the walls.

3: This is a mixed use enterprise of retail and funeral policy services rendered. The roof again is in poor condition.

4: This site is the existing grounds of the ZCC, believed to be holy ground. It is open to members throughout the week for prayers while having lunch in the presence of the priest.

Ground floor plan
Urban programming of the development

1: The taxi service centre:
The centre is located next to Seventh Street for easy access to vehicles driving from either of the one ways. Born or Bloed Street, in need of a quick service. Many taxis are using Seventh Street as the connection between the one ways which has generated the urban decision to place the service centre on the edge of the development next to the street.

2: Building material recycling depot:
Located next to the taxi service centre, it forms part of the light industrial function of the site. The depot is easily accessed from Seventh Street to inhibit heavy vehicular movement any further into the development.

3: Community centre and training facility:
These are public programmes of the development and are accessed from the public square. It’s placed central to the development where pedestrians, who would use these functions, are the focus. In urban mass or volume, the community centre is the largest and highest building to convey its importance as a beacon in the community where they will congregate.

4: Zion’s Church of Christ (ZCC):
The ZCC is an existing programme on the site and is the big attraction for pedestrians in the development. On Sundays all the main services are held when all the members attend. But it remains a popular destination for prayer throughout the week ensuring a very active vibrancy around it.

5: Public square:
This square is framed by the training facility to its west, community centre to its south, the ZCC creating the east boundary, with the neighbouring mechanic workshops to the north. It serves as a public spilt-out for all surrounding programmes activating the space.

Employment opportunities

Unemployment is a serious issue in Marabastad. With the re-development in the community this issue will be addressed and employment will be created by manner of an arrange of aspects within this building material recycling depot.

The employment opportunities lies within the following aspects:
- Employment of people for the actual building work.
- Employment of people in departments like general maintenance, training staff, recycling arts, security personnel, cleaning staff, salvage workers, labourers at the recycling depot, kitchen staff and management personnel.

Ground floor plan
Programmes:
Permanent and changeable/adaptable

1: The ZCC and the community centre with its training facility will be the permanent functions in the development due to their need in the community and their public importance.

2: The light industrial programmes are designed to be adaptable according to people's needs. Their programmes can change along with their informal activities it hosts or as the activities' scope changes.

1: The main pedestrian axis on Grand Street forms part of an important vista of Marabastad (AZIZ TAYOB ARCHITECTS: 2002/01). This pedestrian axis is linking the Jerusalem taxi rank to the west of the development, with the ZCC and beyond into the CBD. One gets east-west access to the development on this pedestrian axis that opens up into the public space in front of the community centre.

2: This second main pedestrian axis on Ninth Street links the whole Belle Ombre taxi-, bus- and train interchange with the Krugerpark flats south of Marabastad. This link opens up into the public space and activates the space with pedestrian inflow. It serves as the north-south pedestrian access to the development.

3: Private vehicles, taxis and buses access the site via Grand Street which leads to an open space with a traffic circle, parking and bus stop. Trucks and pick-ups coming to the building material recycling depot access the centre from Seventh Street turning up in Eighth Street, which becomes a service road, to return to Seventh Street via Grand Street.

Parking

Due to the informal nature of Marabastad, regarding where vehicles drive and park, the decision was made that areas for parking will be allocated rather than formal parking bays made. Informal parking can take place along Grand Street and on the island created by the circle in the public space. Formal parking is provided along Grand Street circle. The bus stop is provided with space for 2 buses waiting for passengers. This can also be used by the taxis.
Taxi service centre

Platforms:
“The taxi industry operates uncontrolled motor repair workshops in the area, which are the source for major oil pollution.” (AZIZ TAYOB ARCHITECTS: 2002:103). This is due to the lack of facilities to operate successfully. A platform is a roof covered informal mechanic workshop space to provide shelter for the local mechanics to change vehicle tyres and weld exhausts on the taxis in a demarcated and controlled environment. It centralises the informal mechanic activities in order to make the trade more manageable for the community. The roof is high enough and supported by steel columns on concrete footings with no infill walls allowing taxis to drive through underneath the roofs to be protected from the elements. This enhances the informal activities and allows growth by providing an infrastructure that will maximise its profit and clientele, because of the lack of current infrastructure. The roof structure is designed to be robust.

Workshop:
This is an existing mechanic workshop that will continue to function, tapping in on the general improvement of the facilities created for the new taxi service centre. Currently it is large enough to service 2 vehicles in need of repairs inside the building.

Storage space:
Ample divided storage space underneath the platform roofs are provided for the informal mechanic’s equipment and spare tyres. It is secured with a steel mesh frame that is used throughout the development as a security measure. The equipment stored on trolleys as well as the tyres can just be chained to the mesh frames.

Canteen and tuckshop:
This is mainly for the workers of the building material recycling depot at lunch time. Its location in the development, also ensures continued customer inflow from the busy taxi service centre and the mechanic workshop. It is large enough to be equipped with pool tables seeing that it is a popular attraction in Marebastaad. The kitchen with its refuse area has access to the service road of the recycling depot. The refuse is then conveniently taken away by the municipal waste trucks passing through the recycling yard.

Ground floor plan
3D View of roofs and platforms

Roofs over platforms at taxi service and recycling facility
Building material recycling facility

Platforms:
These platforms and the platforms at the taxi service centre are similar architectural language and design specifications. Once again it is provided to protect the activities from the elements. The building rubble is dumped at platform 1, where it gets to be categorised in different building material. The sorting process continues at platform 2, where the material is cleaned from debris, rubble or attached mortar, plaster etc. From here it is moved to platform 3 as cleaned categorised material ready for reuse. Platform 4 is dedicated to the collection of material for reuse by the public and other buildings companies that get access to this platform from Eighth Street, the service road. The proposed building technology training facility south of the development under discussion, has access to the reusable material, from the south of the platform. Students enrolled at this neighbouring training facility, collects the material with wheelbarrows from the south access point of platform 4.

Incubator space:
This space is provided and reserved for one of the many informal activities on site. It is the workshop or studio space for local recycling artists to use the dumped building rubble from platform 1, of the recycling depot, to create artwork. It is an informal level of recycling from the recycling depot to the public square, used by pedestrians. It is located next to the main north-south pedestrian axis and opens up towards the public space. It is enclosed with moveable steel mesh frames, as a security measure, to open up to the public and the recycling yard.

The mesh frames allow the pedestrians passing the incubator space to look into the workshop space and recycling yard even if closed. This generates interest and stimulates a recycling awareness with the public passing by.

Skills transfer can also take place in this incubator space where unskilled locals can receive training from the skilled artists. Due to its public function the community of Marabastad can be stimulated through observation of the activities that take place here.

Pedestrian recycling depot:
Due to Marabastad’s sense of informality, different levels of recycling are introduced in the recycling centre. The recycling depot and incubator space’s focus is on building materials that pedestrians barely will carry along with them. It is for this reason that a paper, plastic, glass and tin recycling depot is located next to this pedestrian axis for the stimulation of interaction from pedestrians to take part in the process of recycling. Pedestrians can quickly enter the depot to discard their categorised trash. This facility is conveniently located close to many small businesses and informal trading that generates waste paper/cardboard, which hawkers can collect. One can also take it to the centre where one will collect a meal ticket to exchange for food at the soup kitchen, located within the community centre.

Administration and security control room:
A security system is located at the gate to regulate and check the trucks leaving the depot. Its control room is located in one of the existing buildings to oversee the workers on the platform. Here the workers will also receive their salaries.

Internal circulation spine:
This spine is provided for safe movement within the recycling depot for the managers and workers who are not busy working on the platforms. It is also a volumetric gap between the platform’s roofs and the training facility’s roof, on the first floor plan above the incubator’s space, to allow for a more elegant connection between different buildings and functions.

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Ground floor plan
Recycling facility section

West elevation of incubator space and training facility
Community centre

Foyer:
The foyer is directly accessible from the public space and the north-south pedestrian axis and serves as the transition space between the public space and the community hall. It hosts the ramp that connects the ground floor level activities with the functions on the first floor level.

Multi-functional hall:
The hall is designed to accommodate 400 people and can be used for various activities where people want to gather in large numbers. Two moveable stage locations are provided. It is located either at the internal east wall of the hall or the south wall. This maximises the multi-functionality of the hall. If the stage is positioned against the east wall the audience is arranged in the conventional layout of many rows with not too many chairs in each row. When the stage is positioned against the south wall, the stage will be visible from the foyer as well as the public space, enlarging the audience capacity. Natural lighting filters through the space from the north and south at roof height, where the ventilation louvres are positioned for natural ventilation.

Possible functions of the hall could be:
• Performances and concerts
• Weddings
• Dances
• Community meetings
• Larger ZCC (church) gatherings
• Election stations
• Indoor sports
• Expo’s or exhibition space

Board room:
The board room is accessible from the ramp. It has a landing, according to building regulation specifications, at its double door. This facility can be used by the training section or administrative offices both located on the first floor plan.

Ground floor plan

Community centre 3D
Cafeteria and soup kitchen:
These functions are located on the lower ground floor and are accessible from the community centre’s foyer via a ramp or from the public space. It is linked volumetrically with the foyer space and is defined by the two ramps. The one ramp is the foyer access and the other ramp is the access link to the first floor and cuts through the cafeteria space on a higher level. The cafeteria is used for any event happening in the hall, the above training facility and administrative offices, the church and the public. The kitchen serving the cafeteria is run by the church (ZCC), generating income for its soup kitchen to help support the community members in need.

Ablutions:
The ablutions are only provided for the people using the hall and cafeteria. It is accessible from the foyer through the cafeteria and from the changing room.

Storage and changing room:
These rooms support the hall functions and are accessible from the hall. The storage room is for chairs, tables and equipment and the changing room is to be used by a performing artist or group.

Refuse area:
Located at the back-of-house of the kitchen and its external entrance. It is not protruding from the building in order to maximise the use of the pedestrian axis between the church and the community centre. It is secured with a moveable steel mesh frame.
Community centre section

North elevation of community centre
East section of community centre

West section of community centre
Zion’s Church of Christ

Ritual space:
According to their religion, evil spirits need to be cast away from members with water, before they enter the holy ground from the north. A bucket with water used to be positioned at the entrance where the priest will splash the water in the people’s faces and on their backs. This ritual took place on Grand street in the public visual axis vista proposed by the Aziz Tayob Architects Framework for Marabastad, incorporated into this dissertation.

The need to shift this ritual ceremony off the public vista was crucial to create a more intimate ritual space for the congregation. The recycled wall frames the ritual space, and with a bench, it defines the transition from public to semi-public area. The recycled wall placed between the ritual ground and internal courtyard of the church forms a backdrop to the ritual. A straight recycled wall physically cuts the public Grand Street vista off from the ritual space, creating a defined procession route into the church. At the start of the straight recycled wall a water tower is located, within the ritual space, to serve as a multi-functional element in the landscape.

In urban sense the tower serves as an orientation element creating a pedestrian movement beacon on the different pedestrian axis routes. It announces the ritual space whilst at the same time defining it too. The tower is constructed with steel columns that support a water tank on a platform deck. The water tank is clad with a skin of polycarbonate sheeting fitted with lights on the inside, to glow and also serve as a beacon at night. In the spiritual sense it is a cry to heaven creating a symbolic vertical connection between God and His people.

On the pragmatic and functional level it stores the water, collected from the church ablution’s roof, for the actual ritual ceremony.

The ritual space ends with the extended roof of the ablations over the space to bring the scale down to intimate pedestrian level where a north-south wall directs the procession to enter the holy ground from the north.

Ablutions:
The facility is for the use of the congregation only and consists of a small open kitchen, toilets and showers. The entrance is located north of the ablations in order to create a solid wall facing the internal courtyard giving it a solid boundary for definition of the space.

Internal courtyard:
This is the transition from the ritual space to the holy ground in the presence of the priest. Seating benches are provided around the trees, similar to those loceted in the public space to unify the development. This is a relaxing space where church members come and enjoy their lunch during the week while they pray in the priest’s presence. On Sundays the congregation will use this space for singing and dancing before the start of the service underneath the existing church roof structure.

Existing church roof structure:
Detached from the existing steel portal frame roof columns are new walls to define the private church space from the courtyard whilst at the same time respecting the existing old structure. The Steinkopf Community Centre has influenced the stepping down in height of the building’s walls to pedestrian scale. The highest walls are situated behind the priest’s podium, then it become lower on the sides down where the pedestrians are in the courtyard.

Priest’s residence:
The priest stays on site, throughout the day and week, so as to give help or counselling when needed. The existing priest’s residence is a fibre cement kit-of-parts building located at the entrance of the church grounds. It is moved from there to the private courtyard for the priest in a masonry clay brick home to differentiate between the progression levels of public to private from north to south of the ZCC grounds. The priest’s residence is enclosed by the recycled wall, to introduce the theme of recycling to pedestrians moving through the development from the south-east, where the proposed social housing scheme is located.

Prayer room:
This is provided for private counselling and small prayer groups to be used during the week. It’s located in the semi-private domain of the church where it will be quieter.
Procession elevation of the ZCC

West elevation of the ZCC
Public square

Function:
The square is fed with pedestrians passing through on the two main pedestrian axes through the development. It is framed by the surrounding activities to give it a sense of urbanism and it is these surrounding activities that activate the space. The square acts as an orientation space for a pedestrian to either enter the church, community centre or recycling depot.

Traffic circle:
According to the Marabastad Commercial Association there exists a need for more drop-off points for taxi’s at various locations in the area to minimise centralised road congestion. Because of the fact that Grand Street is a cul-de sac, a circle, with an 8 degree internal radius, to turn vehicles is introduced in the space with taxi and bus stops. This will allow the users of the surrounding functions to have direct transport access to and from the development.

Surface treatment:
The square is paved with reused half bricks from the recycling depot and interlocking brick units for the road and circle to allow for a continuous permeable covered surface.

Street furniture:
Low masonry walls, 450mm high, with concrete copings are placed around the trees all along the circle to both prevent vehicles to go beyond the road and to provide ample seating in the square.

Recycled wall

This is a 1000mm thick wall constructed with wax impregnated cardboard bales and/or compressed soft drink cans. It runs along the pedestrian axis introducing the theme of recycling to newly arrived visitors to the centre. Throughout the design it has a function of movement direction indication and announcement of public entrance into the different facilities. At times the element is a bench and at other times it creates a boundary like a wall. In solid wall stretches, there are gaps to provide framed sneak peaks of the function behind the wall. This allows the pedestrian in Grand Street to be introduced to the process of recycling in the building material recycling depot, creating a sense of interest. The element is rigid (formal) at the taxi service centre and takes on a free form (informal) inside the public space to illustrate the unpredictable or informal movement patterns of people through the space, ending in the ritual space of the ZCC.

The wall's sides are not finished off, to keep the rough look and feel of the surface and is coped with concrete. It is the symbol of the combination of informality and formality; the informal paper bailed or compressed in material used in combination with the formal material, concrete. The recycled material represents the informal activities of the context and the concrete represents that added formal structures. Together it represents the theoretical premise of the design; the formality creating a platform for the informality to function.

Water treatment

1: Rain water is harvested from the taxi service centre and recycling facility platform roof, and is stored in tanks located between these roof structures. The water is used by the service centre for washing of cars and cleaning of the platform. At the recycling facility the water is used to clean the dumped building material and to wet the platforms to prevent dust clouds to be blown into the training facility.

2: All paving is done with reused half bricks, to create a permeable surface for the water to drain into the underground water table. The paved surface is continuous throughout the public square, and is sloped inwards towards the tree lanes to retain the water at the tree bases for natural irrigation during the rainy season. Excess run-off, drains towards the canalised Steenhoven Spruit that acts as the main storm water collector on the site. (AZIZ TAYOB ARCHITECTS: 2002:100)
Entrances

The main pedestrian entrance of the development is at the junction point of the community centre and the recycling facility on the north-south pedestrian axis. To announce the entrance the first floor bridges the training facility with the administrative office space to create a bridge link. This provides covering on ground floor where the entrances are located. Reception is located within each entrance. The entrance at the recycling facility has its own reception where as the entrance to the hall has a reception for both the administration offices and training facility located within the foyer.

The hall has an entrance directly from the public space as well. The reason for two entrances are that the community hall should be able to function completely isolated from the recycling facility in order to be used by the community, accessible from the public space. The training facility with its administrative offices of the recycling facility has access to the community centre from the north-south pedestrian axis where the recycling facility entrance is also located. The hall has a direct entrance from the pedestrian axis too, so that it can be used depending on the specific function active in the hall.

Public entrance to the incubator space is provided along the north-south pedestrian axis.

The ZCC members need to enter the holy ground from the north, thus an entrance is provided from the ritual space, linked with the public square, to enter from the north.

Public ablutions

According to the framework compiled by Tayob, a shortage of public ablution facilities exists in Marabastad. Unfortunately, due to the slum-like conditions of the suburb that manifests itself in physical destruction, the existing public ablution facility in Mogul Street is severely vandalised. This gave an indication to the location of these facilities in the development and how it can be controlled and managed.

1: These ablutions are provided at the canteen and tuckshop for the customers of the taxi service centre. The public wanting to use the ablutions is regulated through the canteen to minimise vandalism. The canteen is responsible for the maintenance of this facility.

2: These ablutions are also accessible to the public, but through means of the recycling facility entrance to regulate the public. It has access from the recycling depot for the workers and the artists at the incubator space. Locker rooms with showers are provided for the workers of the recycling depot who will have keys for this facility.

Security

Marabastad’s social problems are trapped in a vicious circle of crime and violence. The area is regarded as a crime hotspot, and crime features as one of the most prevalent problems listed in public opinion surveys. (AZIZ TAYOB ARCHITECTS: 2002:106) It is for this reason that the whole development is designed to be robust in nature and material selection in order to minimise vandalism to the buildings. To prevent burglaries or unwanted visitors with ill intentions to enter the premises, steel mesh frames are provided at all entrances and windows as burglar bars or security gates. It is designed to form part of the language of the building’s robust and simplistic architectural style to ensure safety and security without the appearance of a jail.
North-south pedestrian axis

Recycling facility entrance 3D
Training facility

Reception:
The general training facility reception is located within the foyer of the community centre at the entrance from the pedestrian axis. The reception on the first level is for registration and administration purposes. Spatially it forms part of the waiting lounge that is the connection bridge link.

Waiting lounge:
This lounge is used by students of the community who enrols at the training facility for skills development and literacy programmes. This is the connection bridge that spans over the north-south pedestrian axis connecting the training facility with its administration offices on the first floor level. It protects the entrances below against the natural elements and serves as a portal to the development on the north-south pedestrian axis.

Training rooms:
According to the Tayob Framework for Marabastad 1998, the use of different training facilities and support programmes to uplift the community on a social level, are crucial for the economic growth of Marabastad. It is for this reason that the training facility is designed to accommodate a variety of activities like adult literacy, skills development and consultation. It is mainly provided for adult literacy programmes in association with the recycling facility.

The manuals used for literacy training is developed by literacy agencies registered with the Department of Education and the Independent Examinations Board. This programme can be used to teach adults English reading, writing, listening and speaking skills – using the theme of waste. The same manuals can be applied to teach more than just literacy skills, it can also teach life skills. The life skills learners are taught, include how to do surveys of their areas to identify waste related problems and recommend solutions, as well as how to plan and chair community meetings. (GARNER, G. 2001:43) Their skills can be implemented and put to the test by taking part in the upliftment programmes of Marabastad.

The learners can be taught managing skills and responsibility by entrusting them with the management and success of the pedestrian recycling depot next to the incubator space. Part of the responsibility will be to help with the organisation of the food coupons received by hawkers who bring in waste paper/cardboard to the centre.

The training rooms can be used by local welfare bodies for upliftment assistance to the community. The Pretoria Homeless Consortium developed a help centre in 1998 as a programme of the Pretoria Inner City Partnership to operate from Marabastad. This Consortium can use the training rooms for the following service they provide: Counselling and guidance, talks by visiting experts, medical services by visiting nursing staff from the Prolang Clinic and skills training workshops in cooperation with the Gauteng Department of Social Welfare. (AZIZ TAYOB ARCHITECTS: 2002:193) Academic institutions in Pretoria could offer skills to the community, such as legal aid. “As Marabastad is redeveloped, the promotion of outreach contacts between the Marabastad community and other communities of Johannesburg could help heal, at a social level, the rift that has historically existed”. (AZIZ TAYOB ARCHITECTS: 2002:194)
Administration offices

Offices:
This is the supporting administration facility for the successful management and supervising of the training facility. The Department of Education or registered literacy agency have the offices available to rent and is provided with private offices, open plan office space, store room and utility/copy room.

Ablutions

The ablutions are provided for the use of the training facility students and its administrative department personnel. Locker rooms are provided for students who do not have the privilege of running water at home or for students and personnel who need to refresh.

Security

The security of the training facility and administration offices lies in the success of the management of the reception areas located on the ground floor. Moveable steel mesh frames serve as security gates at the start of the ramp in the foyer when the community hall is used to prevent the public from moving through the foyer up the ramp. These same moveable steel mesh frames are the security measures at the exits of the fire escape staircases on the ground floor level.

Ramp

The ramp is located in the foyer of the community centre and is the main access, from the ground floor, to the first floor level. It protrudes the building surface at the east end, creating a landing that is cantilevered from the building to give a person a glimpse of the ZCC and the lush Steenbaven Spruit. It is the connection point between the reception in the foyer and the above training facility with its administration offices.

Fire escapes

Fire escape staircases are provided according to building regulations. They can be easily accessed from the administration offices and the training facility. The training facility’s north fire escape is located at the end of the wide passage and is treated as a feature element of the north elevation of the facility. It protrudes the building’s skin and its landing juts through the recycled wall element on Grand Street. It gives the elongated rectangular building a soft dissolved ending and creates interest on the pedestrian east-west pedestrian axis that is an important vista.
3D View of incubator space and training facility

East elevation of incubator space and training facility
Taxi service centre
Recycling facility
Training facility
Community centre
Neighbouring green building workshop
ZCC

3D View of the development
Building material selection

The materials are selected from those commonly used by the local community in Marabastad. The materials, selected for this development, are categorised into “formal” and “informal” materials. The “formal materials” are referring to the conventional material selection for large developments within urban context, whereas the “informal materials” are representative of materials used for self-built houses.

**Formal material selection**

Steel construction:
A steel construction frame is used to form a grid for infill. Steel is used due to its availability and recyclability properties.

Masonry clay bricks:
Bricks are used as infill, due to its availability and re-use properties, and can be done by semi-skilled labourers.

IBR profile metal sheeting:
This is used to continue with the existing light industrial architectural language of the community.

Concrete:
The use of concrete is limited to foundations, a few columns, flooring and a roof gutter.

**Informal material selection**

Wax impregnated baled corrugated cardboard/paper:
The theme of recycling is introduced, by means of these cardboard bales, to the material selection of the development. It can be replaced with new bales once it requires maintenance, with little cost involved.

Compressed tin cans:
This is used in combination with the cardboard/paper.

Glass reinforced panels:
GRP of a variety in colour is used as glazing at the training centre. It’s to allow a spectrum of colours to bright up the interior of the training rooms to give it an informal training atmosphere.

Shading net:
This is applied as a shading device on the east facade of the training centre. It is a relatively cheap material and it draws from the informal market gazebo stands on the site. It plays the informality of the material off against the formal steel and brickwork.

Steel mesh:
Due to the high crime rate in Marabastad, security is of great importance to the development. Steel mesh is introduced for use of a security measure, but allows people to still observe the activities on the other side of it.