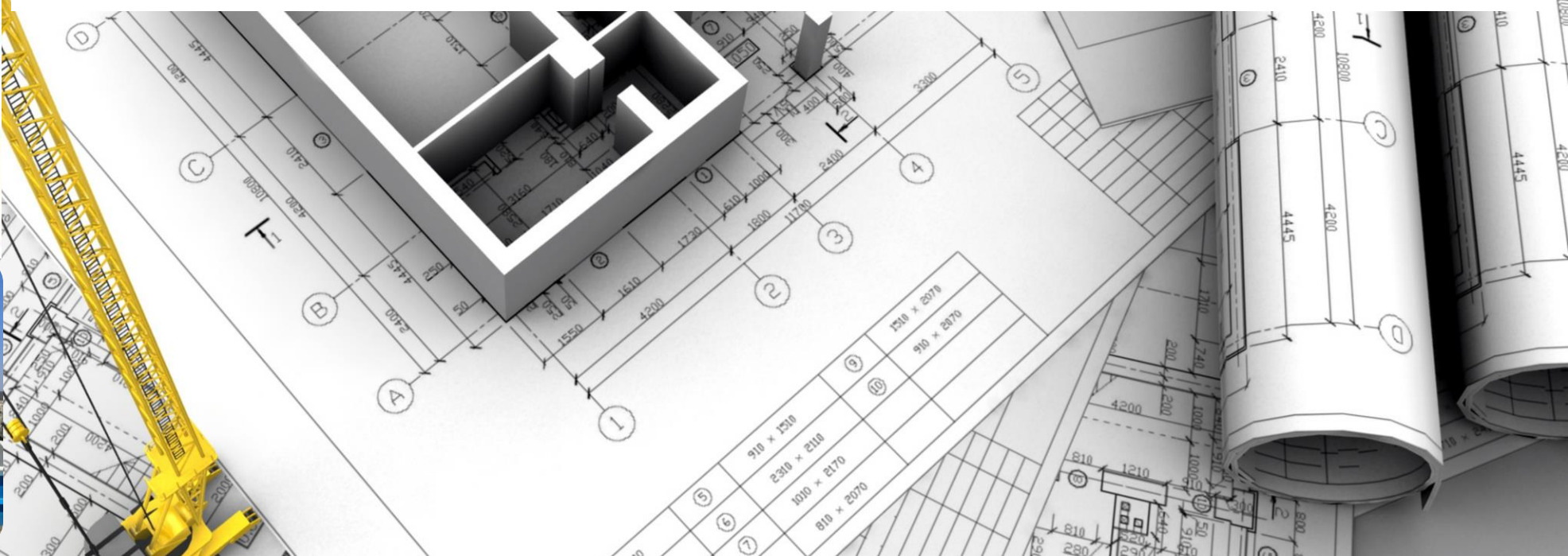




# EVEREST CONSTRUCTION BS N DEVELOPMENT BUSINESS PROFILE



# Overview of Everest Construction

- ▶ Everest Construction is a CIDB Grade 8GB specializing in Alternative Building Construction (ABT) targeted for turnkey building projects, Conventional Building, and refurbishment including various forms of renovations,
- ▶ Everest Construction is specializing in Alternative Technologies, that utilizes mainly non-conventional/environmental friendly/green energy methods within the built and engineering industry
- ▶ We do this through the provision of world class building methods, engineering services and advisory services (thought leadership) in global engineering trends including road construction, water purification and sanitation.
- ▶ We are a project-centered company that tailor-make solutions and services to address customer-specific business and project requirements



# EVEREST CONSTRUCTION BUSINESS DEVELOPMENT USE INTEGRATED PROJECT TEAM SYSTEM

Stakeholders,  
including end-users

**Integrated project team**

**Client team:**  
SRO project sponsor  
and support as required

**Managed by:**  
project sponsor and  
project manager

**Supply team:**  
Integrated supply chains of  
consultants, constructors,  
specialist suppliers and  
facilities managers

Independent  
client adviser/s



# PRODUCT OFFERING

- ▶ ABT solution makes use of Expanded Polystyrene (EPS) panels with a business model driven and based on addressing the ever-growing demand for environmentally friendly and energy efficient approaches to construction and structural development.

Everest Construction offers ABT turnkey solutions for the construction of the following:

- ▶ Housing (Low cost, medium cost, high income, hostels, student residences, etc.)
- ▶ Health facilities
- ▶ Communal amenities (Halls, service centers, churches, etc.)
- ▶ Schools, Crèches, Early Childhood Centers
- ▶ Retail shopping complexes/Malls
- ▶ Office complexes, warehouses, hotels, conference facilities
- ▶ Emergency facilities and mobile structures
- ▶ Any other structure as defined by the client

It supports initiatives of government and private sector in redressing the past imbalances and transformation of living conditions.



# OUR COMPETENCES

Everest Construction has a solid experience in ABT construction and know-how and has the capacity to implement projects and programs within the following competencies:

## 1. General Construction

- General Building
- Civil
- Waterproofing
- Plumbing
- Electrical works

## 2. Maintenance (Supply and Installation)

- Paving, Ceiling, Painting, Waterproofing, Roofing, Tiling, Plumbing, Brickwork, Office Partitioning and Dry-Walling
- Electric: Wiring, tubing and electric fencing
- Supply and installation of glass and aluminium products

## 3. Community Empowerment & Small Business Development

- Establishment and promotion of SSMEs
- Mobilization & empowerment of labour
- Engaging youths and women in construction



*Quality energy efficient buildings in a flash...*

# THE ALTERNATIVE BUILDING TECHNOLOGY SOLUTION

## Foundation

Any traditional foundation can be used with Panel Technology. The Imison™ Technologies use Expanded Polystyrene (EPS). The foundations are adapted for each project to cater for the local soil conditions. EPS can also be used in the foundation stage to insulate flooring as well, providing additional insulation benefits.



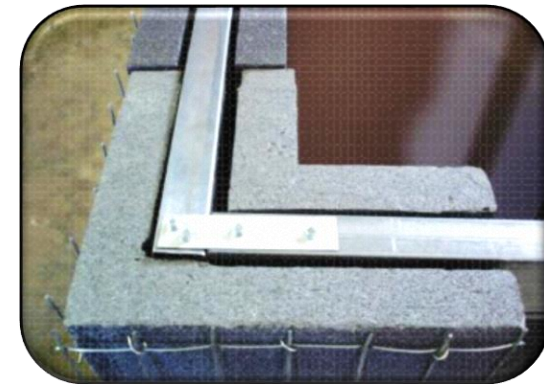
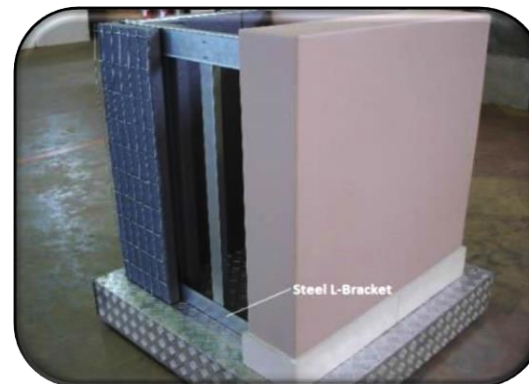
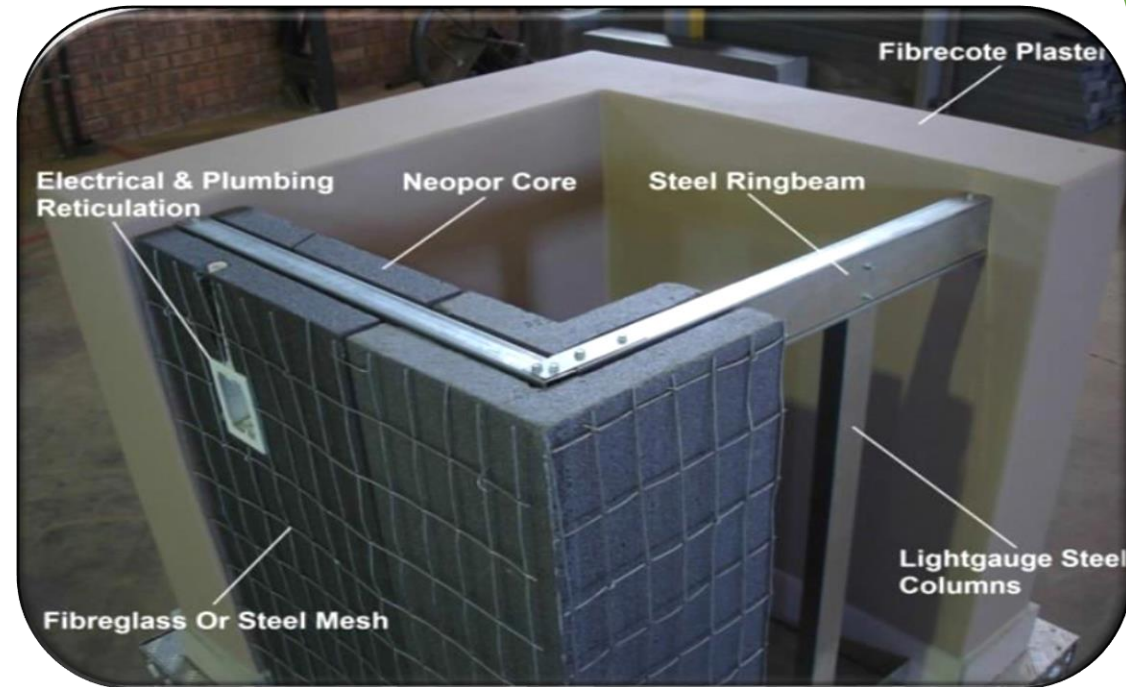
*Quality energy efficient buildings in a flash...*

# THE ALTERNATIVE BUILDING TECHNOLOGY SOLUTION

## Walls

Imison™ is a Walling Technology, consisting primarily of:

- Neopor® (BASF Technology) Panels
- Light Gauge Steel Columns or In-situ Concrete Columns
- Steel Ring Beams and Tracks
- Fibrecote™ - High Density Plaster
- Mesh (Fibre or Steel)



# THE ALTERNATIVE BUILDING TECHNOLOGY SOLUTION

## Labour Intensive Assemble

Walls are erected on-site. The EPS in the walls is proven to have unique insulation characteristics. Panel Technology homes can be extended with both traditional bricks as well as panel walls.

## Roofing

Any traditional roofing structure can be accommodated in accordance to the needs of the clients.



*Quality energy efficient buildings in a flash...*

# THE ALTERNATIVE BUILDING TECHNOLOGY SOLUTION

## Walls

Our ABT solution integrates the following components:

- **Structural:** Steel (structural) Fibre-cote (22mpa concrete cement)
- **Insulation:** Neopor (insulating graphite infused EPS core)

**Fibre-cote™** patent is exclusively used in the construction process. It is the only plastering technique of its kind. Imison™ walls are finished with a high density, structurally classified plaster called Fibre-cote™.



*Quality energy efficient buildings in a flash...*

## Fibrecrete™

- High density structural plaster
- Applied at high velocity with a Fibrecrete™ applicator
- 150kg point load
- Ballistically tested to withstand a 7.62x390mm (AK47)
- Compressive strength of 2200+ kg per/m<sup>3</sup>
- Allows vapour diffusion



Stronger • Smarter • Faster

First Coat Fibrecote™



Stronger • Smarter • Faster

## Certification

**Everest Construction BS N Development™** has been certified and approved by Agrément South Africa to use ABT. Agrément is internationally recognized in more than 21 countries world wide. An Agrément certification is of the highest standards for alternative construction products

Agrément certification incorporates the requirements of:

- ✓ International Council for Building Research, Studies and Documentation (CIB)
- ✓ World Federation of Technical Assessment Organisation (WFTAO)
- ✓ Council for Scientific and Industrial Research (CSIR)
- ✓ Council for the Built Environment (CBE)
- ✓ South African Bureau of Standards (SABS)
- ✓ National Home Builder's Registration Council (NHBRC)



# FEATURES OF THE ABT MODEL

## Speed

- Construction is 0 - 75 % faster

## Strength/Durability

- 22 mpa concrete plaster
- Steel frame
- No structure crack
- 100% moisture seal
- No rot, mould or termites

## Appearance

- The finished structure looks and feels like the conventional structure.

## Weight

- EPS panels are 65% lighter than brick and mortar

## Insulation

- Thermal rating:
  - R-value: 4,97
  - U-value : 0,20

## Cost

- Early occupation due to faster project completion
- Less running cost due to energy efficiency of panels

## Maintenance

- It requires a new coat of paint as frequently as you would renew it on traditionally built home.

## Sustainability

- 95% unskilled labour
- 29% women
- Environmentally friendly material and processes

## Habitat

- Offers homes that are up to 6% cooler and healthier.

# FEATURES OF THE ABT MODEL :

## COMPARATIVE TABLE

ABT	BRICK AND MORTAR
<p><b>Expanded Polystyrene (EPS)</b> consists of 95% air and the rest is made up of carbon and hydrogen. EPS offers unique qualities in lightness, strength, moisture resistance and safety of use and is now recognised internationally as an alternative to traditional construction material. The Polystyrene contributes to energy efficiency and is an important innovation by BASF the world's leading chemical company.</p>	<p>Conventional method i.e. <b>Brick and Mortar</b> has since its invention been used in South Africa and the world for human habitat and other use. It is however been not the ultimate building technology and not closer to environmental friendly, fast and economically viable all that has been because that it has not been compared to anything but itself.</p>
<p>Fibrecrete and EPS has 2hours fire resistance</p>	<p>Brick and Mortar has at least 45minutes fire resistance</p>
<p>Fibrecrete has a compressive strength of at least 22MPA and a high density (2200+kg/m<sup>3</sup>) that is consistently achieved.</p>	<p>Conventional plaster has a cubed strength of 7 MPA and its usual density of 1800 kg/m<sup>3</sup>, which is not consistently achieved.</p>
<p>Fibrecrete can sustain a 40kg point load on a screw allowing even heavy household appliances like geysers to be hung on the walls</p>	<p>Conventional plaster can sustain the same load as ABT</p>
<p>The polypropylene fibres in Fibrecrete absorb water and slowly release it over a period of time to assist in the curing process. The drying shrinkage results achieved by Fibrecrete (160 -495 micro strain) is substantially lower than specified limits, and radically reduced cracking is achieved.</p>	<p>Bricks and Cement Blocks absorb water faster and release it even quicker which results in poor curing and expose it to cracking</p>
<p>The use of Expanded Polystyrene Core inside building panels eliminates the need of bricks and reduces cement usage by up to 90% - materials that cause 7% of environmental greenhouse gases.</p>	<p>Bricks and mortar is 100% cement built. There is 0% reduction in cement the materials that causes 7% of environmental greenhouse gases.</p>

# FEATURES OF THE ABT MODEL :

## COMPARATIVE TABLE

ABT	BRICK AND MORTAR
<p>EPS is accepted by the European Union's standards as an energy efficient construction material. The thermal qualities of EPS are also recognised by the SANS-204 standard for energy. EPS wall panels have the following thermal ratings:</p> <ul style="list-style-type: none"> <li>-R-value: 4,97 m<sup>2</sup> C/W</li> <li>-U-value: 0,31 W/m<sup>2</sup> C</li> </ul>	<p>There are no findings on the thermal properties on Brick and Mortar. This makes it still the less comparative though to ABT which still makes it less Energy efficient due to use of energy for cooling and warming</p>
<p>These properties make homes up to 6° warmer in winter and 2° cooler in summer (interior temperature - without ceiling insulation and with standard doors and windows), leading to electricity saving.</p>	<p>Highly insulated Brick and Mortar house achieved 3° warm and 0.5° cooler on a more open house</p>
<p>The construction panels are significantly lighter than bricks requiring smaller vehicles for transportation.</p>	<p>Bricks are 400times heavier than EPS panels and it requires a heavy loading vehicle for transportation</p>
<p>EPS panels give walls complete insulation against water (rain) transfer, preventing mould and rot.</p>	<p>Brick and Mortar is easily exposed to moisture which results in mould and rot</p>
<p>All EPS off-cuts are recycled. On site waste is 5 %</p>	<p>Brick and Mortar materials are 15% on site waste</p>

# FEATURES OF THE ABT MODEL :

## SCIENTIFIC TESTS

### Testing

- Panel technology has been tested by Government housing agencies, independent scientific testing agencies and technical divisions of banks.
- Certification was done by Agreement ([www.agreement.co.za](http://www.agreement.co.za))
- Agreement is a member of the World Federation of Technical Assessment Organisations ([www.wftao](http://www.wftao))

### Tests Done Include

- Bend,
- Ballistics,
- Wind,
- Demolition,
- Crack,
- Fire resistance



*Quality energy efficient buildings in a flash...*



**DAY 1**



**DAY 2**



**DAY 3**



**FEATURES OF THE ABT MODEL : 40 SQM HOUSE**



**DAY 4**



**DAY 5**



**COMPLETE!!!**

**DAY 6**

**DAY 1**



**FEATURES OF THE ABT MODEL : 62sqm**

**DAY 2**



**DAY 4**



**DAY 6**



**DAY 8 to 10**

**Plumbing  
Electricity  
Ceiling**



**DAY 3**



**DAY 5**



**DAY 7**



# BENEFITS OF USING ABT

- **Flexibility:** It is easily adaptable to requirements of the client and integrated with other technologies;
- **Speedy Construction:** It saves between 66 to 75 percent in construction time over regular construction;
- **Easy and Cheaper Transportation:** Panels for 12 homes (40sqm sized) can be delivered in one single truck load;
- **Quality and Durability:** Has proper certification (Agrèment SA certified, SABS NHBRC approved);
- **Energy Efficiency:** Outperforms conventional materials in energy efficiency incl. temperature balance;
- **Performs Technically** (weather proofing, sound, light, structural cracks etc.)
- **Environmentally Sustainable:** Resource efficient, recyclable, less toxic, local material, etc. which results in a cleaner living habitat;
- **Cost Efficient and Affordable:** As a result of lower construction costs, low energy consumption, easy transportation of material.



*Quality energy efficient buildings in a flash...*

# DELIVERY PROCESS

Everest Construction Development has devised an adaptable process guided by participation, planning and implementation requirements within the conventional and the alternative construction project/programme management process as follows:

## Cooperation/ Partnerships

- ✓ Beneficiaries
- ✓ Communities
- ✓ Youths & Local businesses
- ✓ Funders/ Investors
- ✓ Suppliers/ Manufacturers
- ✓ Land Owners
- ✓ Government
- ✓ Traditional Leaders
- ✓ Professional/ Technical teams



## Planning & Design

- ✓ Prioritization
- ✓ Baseline studies/ Assessments
- ✓ Community facilitation
- ✓ Settlement Planning
- ✓ Facilities planning
- ✓ Designs and approvals
- ✓ Panel designs
- ✓ Outsourcing/ manufacturing/ supply



## Implementation

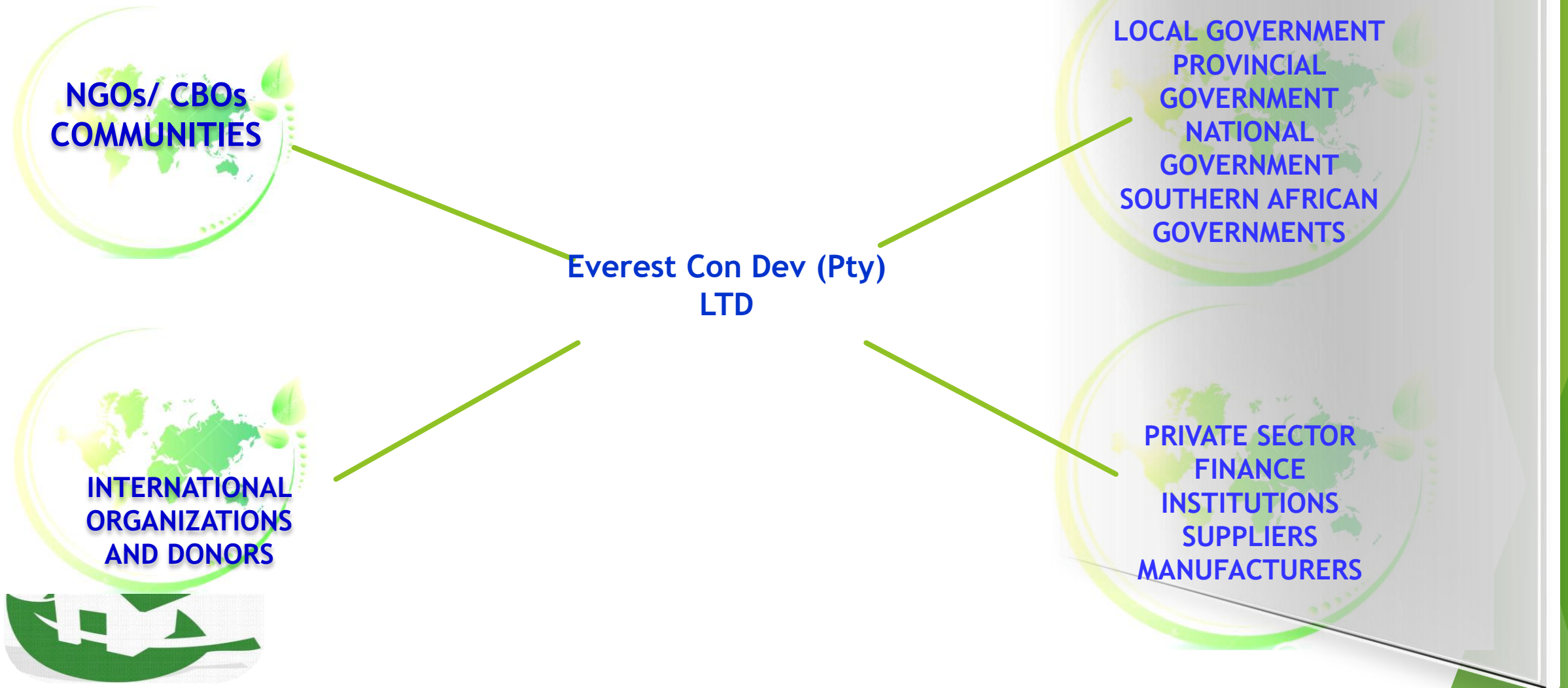
- ✓ Skills Development
- ✓ Small Business Development
- ✓ Construction
- ✓ Project Control Management/ Monitoring



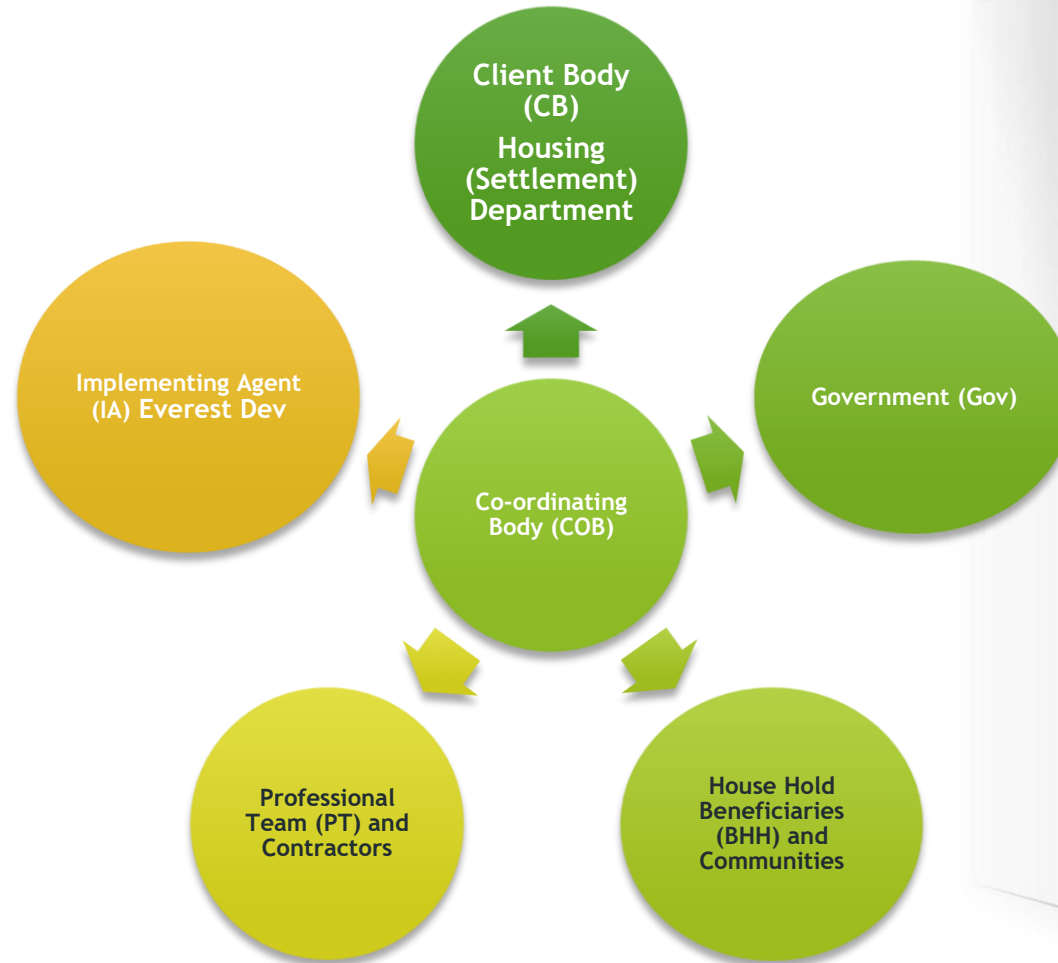
## Completion

- ✓ Product Delivery
- ✓ Inspection
- ✓ Handover/ Close-out
- ✓ Management of Warranties
- ✓ Technical & Financial Closure
- ✓ Impact Monitoring

# PARTICIPATION MODEL



# POSSIBLE COLLABORATION IN AREA OF DELIVERY



# Specializing in General Construction

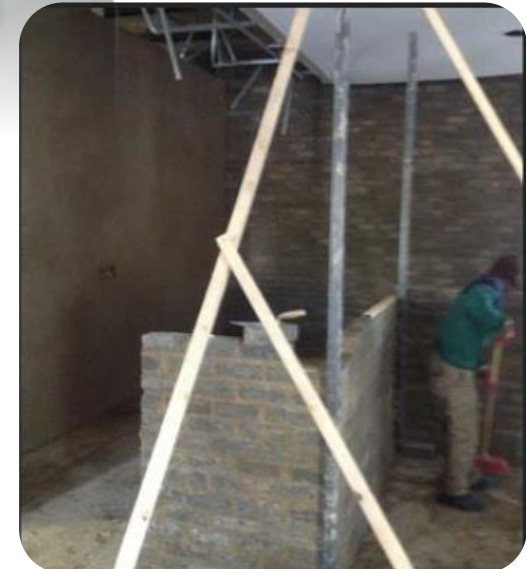
- ▶ General Building
- ▶ Civil
- ▶ Waterproofing
- ▶ Plumbing
- ▶ Electrical
- ▶ Water and Sanitation

If you are considering building or renovating, but the whole process seems so complicated, expensive and fraught with anxiety that you feel like shelving it, then contact us.



# Maintenance: Supply and Install

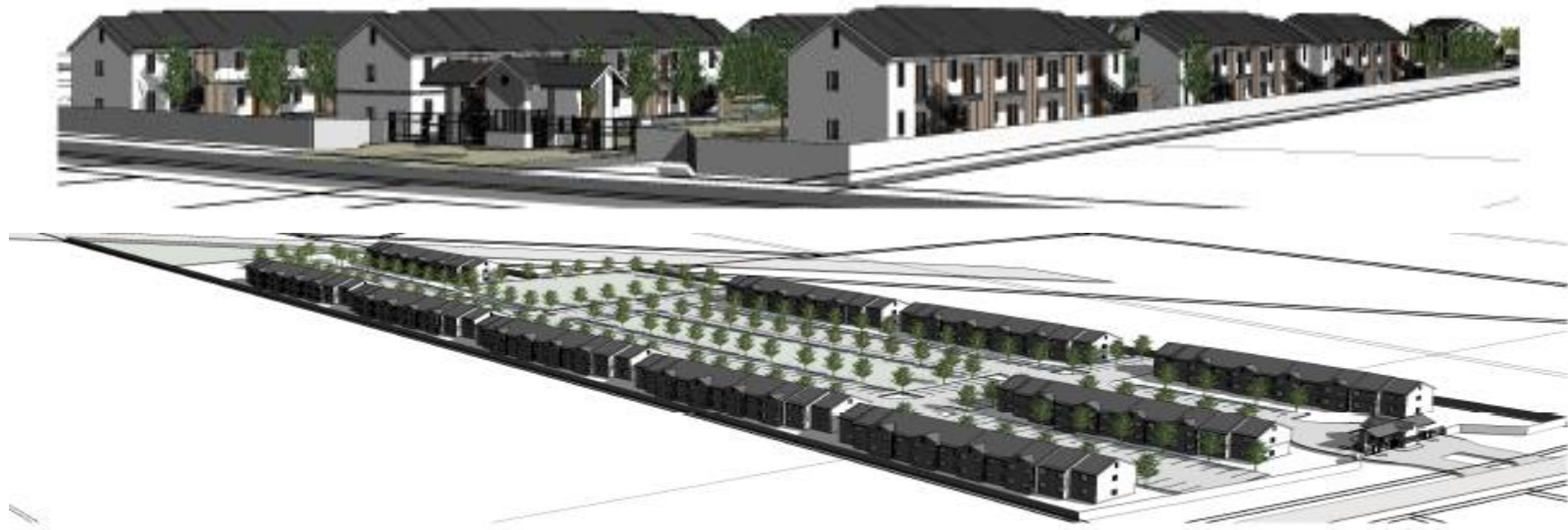
- ▶ Paving
- ▶ Ceiling
- ▶ Painting
- ▶ Waterproofing
- ▶ Roofing
- ▶ Tiling
- ▶ Plumbing
- ▶ Brickwork
- ▶ Office Partitioning and Dry-Walling
- ▶ Electric: Wiring, tubing and electric fencing
- ▶ Supply and install glass and aluminium products

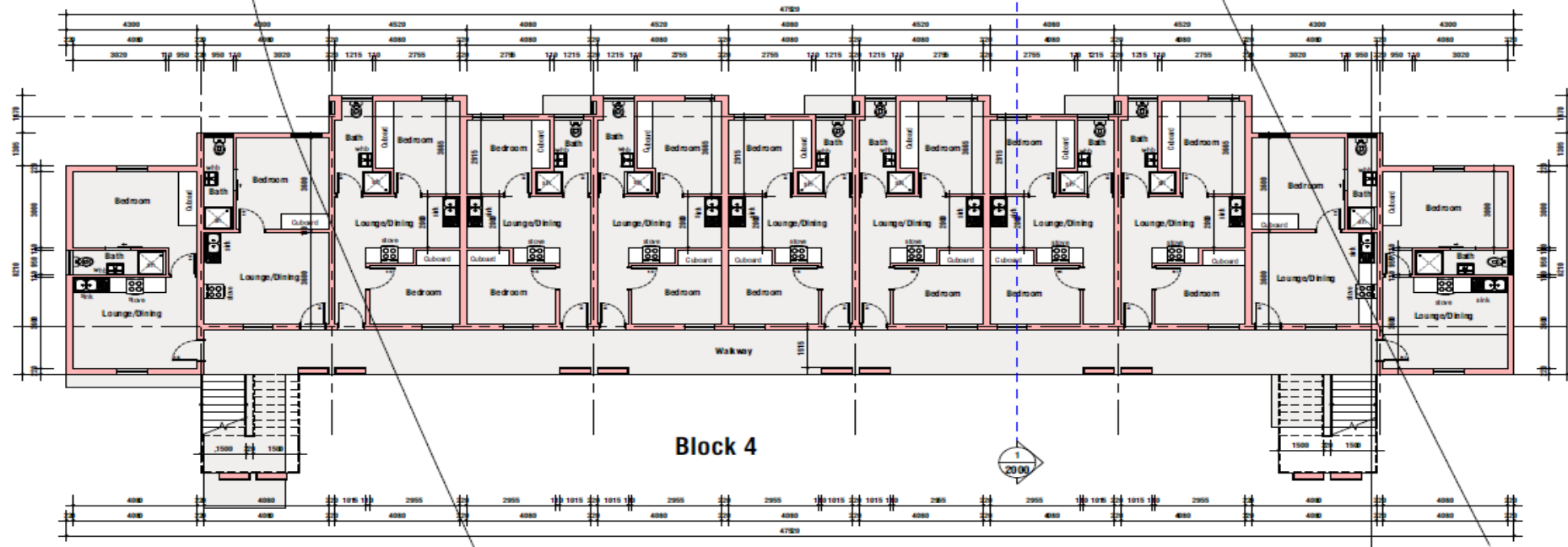


# ENDORSEMENT OF THE TECHNOLOGY



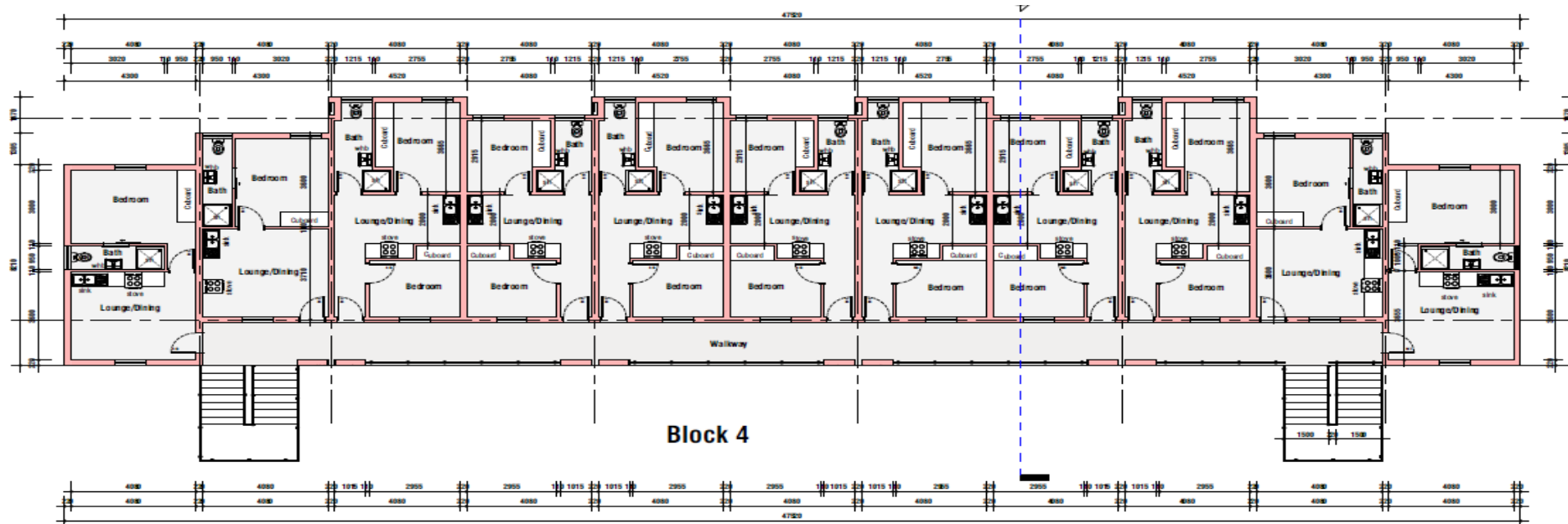
# Everest Concept Plan in relation to Social Housing Guidelines/Typologies



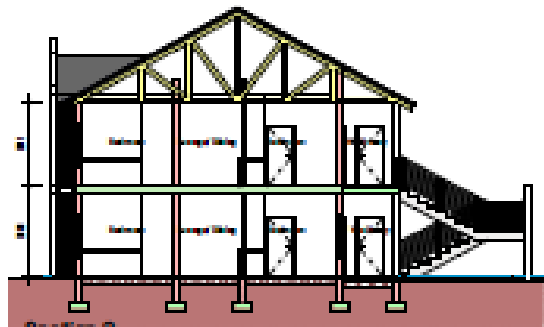


**GROUND FLOOR PLAN**

SCALE: 1 : 100

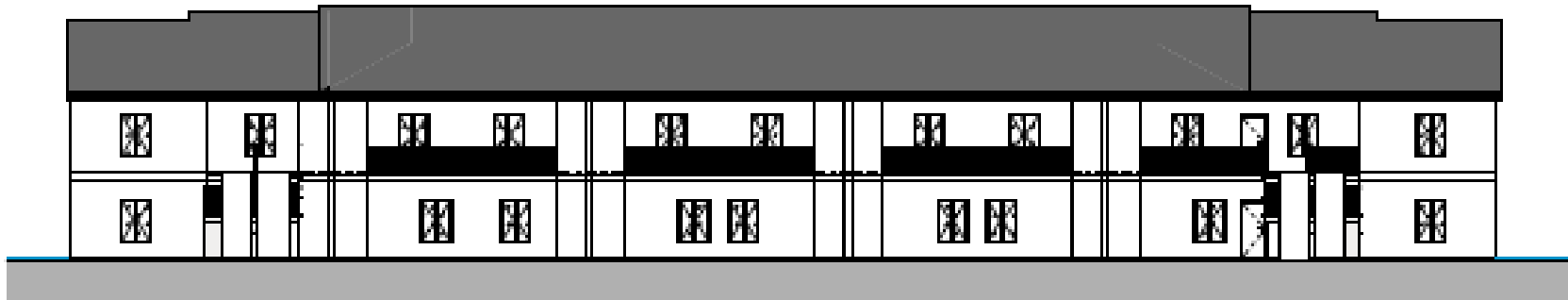
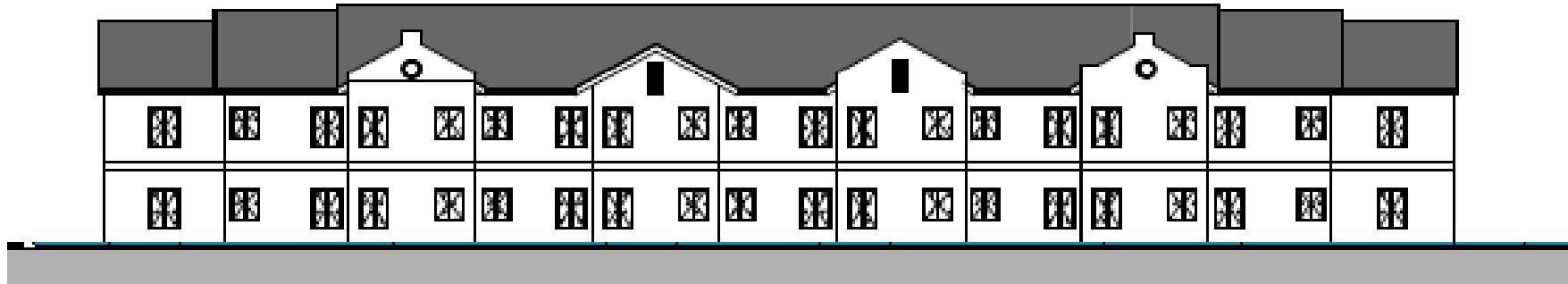
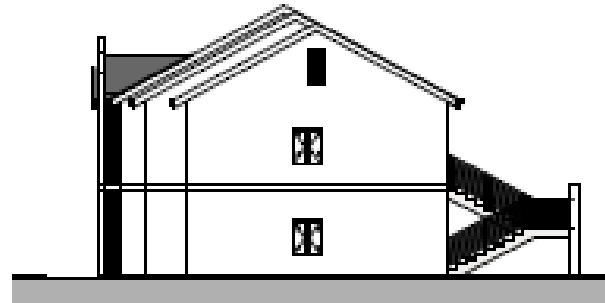
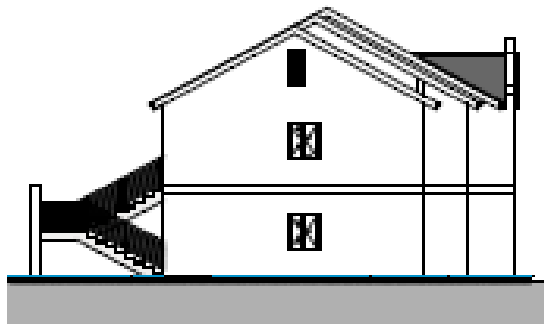


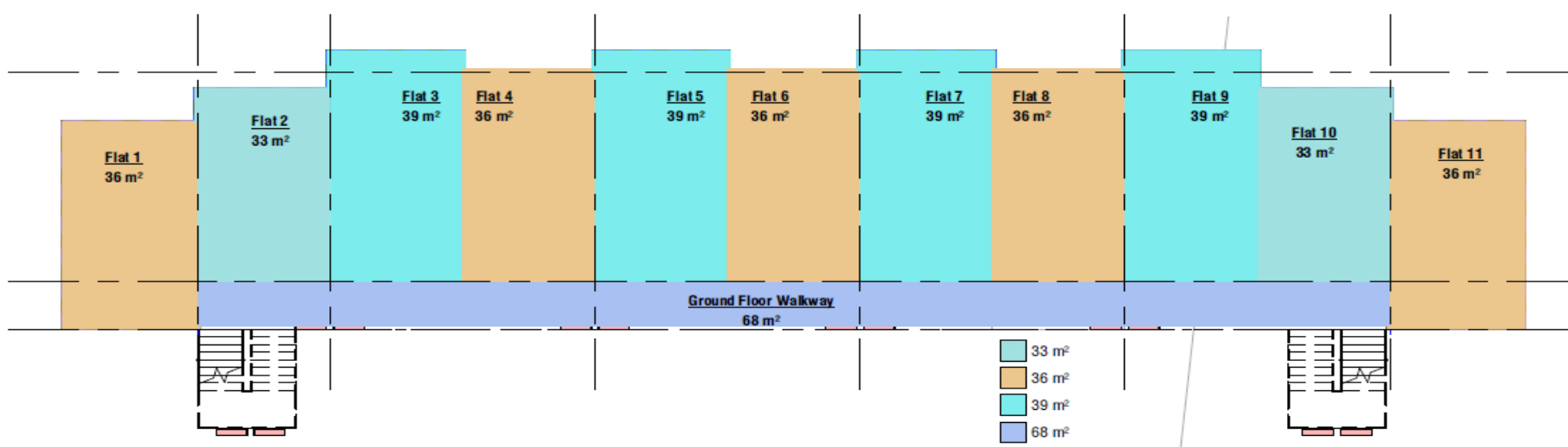
**FIRST FLOOR PLAN**



Section 2

scale 1:100





### 01 Ground Floor

68 m <sup>2</sup>	01 Ground Floor	Ground Floor Walkway
36 m <sup>2</sup>	01 Ground Floor	Flat 1
33 m <sup>2</sup>	01 Ground Floor	Flat 2
39 m <sup>2</sup>	01 Ground Floor	Flat 3
36 m <sup>2</sup>	01 Ground Floor	Flat 4
39 m <sup>2</sup>	01 Ground Floor	Flat 5
36 m <sup>2</sup>	01 Ground Floor	Flat 6
39 m <sup>2</sup>	01 Ground Floor	Flat 7
36 m <sup>2</sup>	01 Ground Floor	Flat 8
39 m <sup>2</sup>	01 Ground Floor	Flat 9
33 m <sup>2</sup>	01 Ground Floor	Flat 10
36 m <sup>2</sup>	01 Ground Floor	Flat 11

472 m<sup>2</sup>

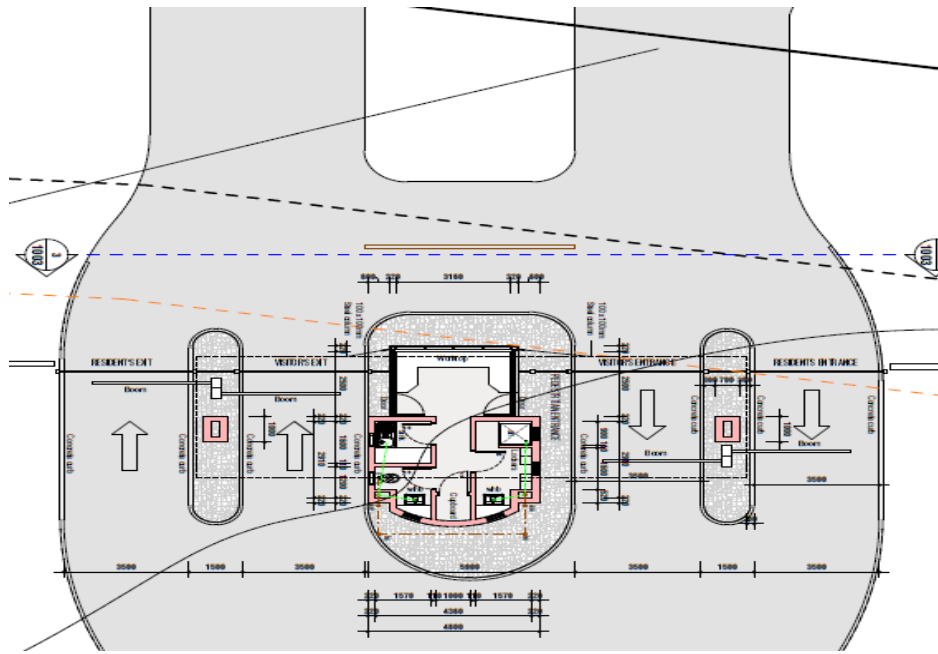
### 01 First Floor

36 m <sup>2</sup>	01 First Floor	Flat 12
33 m <sup>2</sup>	01 First Floor	Flat 13
39 m <sup>2</sup>	01 First Floor	Flat 14
36 m <sup>2</sup>	01 First Floor	Flat 15
39 m <sup>2</sup>	01 First Floor	Flat 16
36 m <sup>2</sup>	01 First Floor	Flat 17
39 m <sup>2</sup>	01 First Floor	Flat 18
36 m <sup>2</sup>	01 First Floor	Flat 19
39 m <sup>2</sup>	01 First Floor	Flat 20
33 m <sup>2</sup>	01 First Floor	Flat 21
36 m <sup>2</sup>	01 First Floor	Flat 22
73 m <sup>2</sup>	01 First Floor	First Floor Walkway

476 m<sup>2</sup>

948 m<sup>2</sup>





# COMPLETED PROJECTS

HALLMARK BUILDING -  
MANONENG



PROTEA HOTEL HATFIELD



COSMO CITY CHURCH



COSMO CITY CHURCH



*Quality energy efficient buildings in a flash...*

# COMPLETED PROJECTS

MED -HIGH INCOME  
HOUSING, ECOPARK



LOW COST HOUSING



*Quality energy efficient buildings in a flash...*

# COMPLETED PROJECTS

MYRA PRIMARY SCHOOL - NORTH WEST



SIVUYILE PRIMARY SCHOOL - EASTERN CAPE



*Quality energy efficient buildings in a flash...*

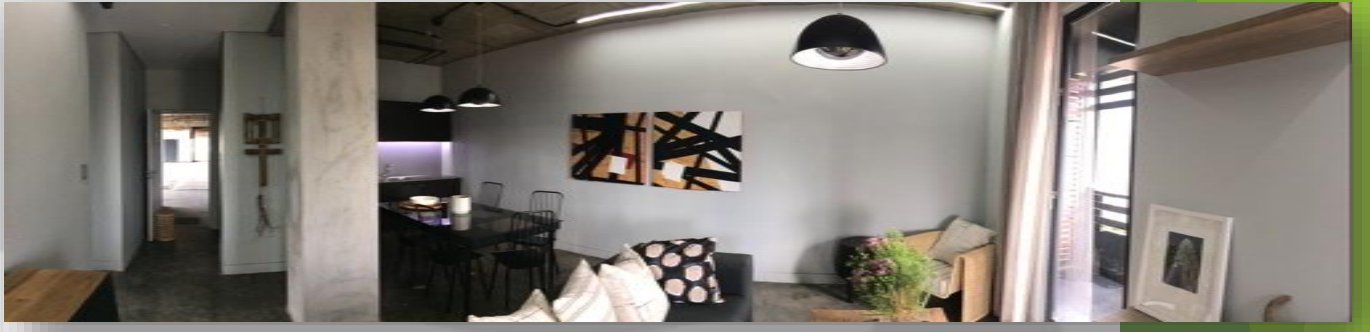
Frank's Place



# Frank's Place



**Record sales**  
**60% SOLD in 14 days**



# Randburg Square



Studios @ Burnette



# Pixley House



# Windsor on Vaal



Schools



Schools





Eco Estate



# Kallumbila

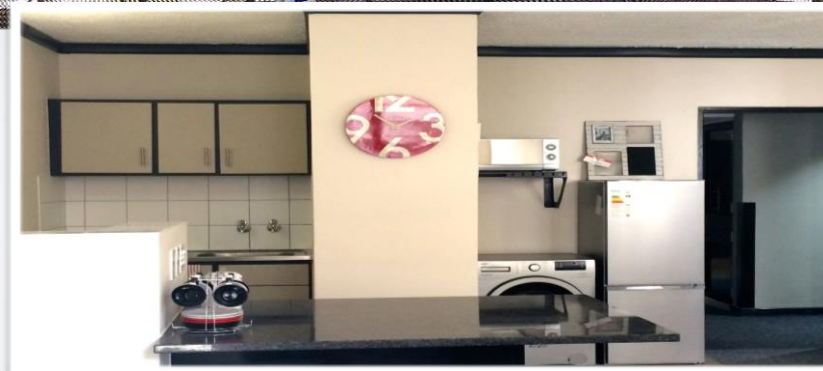
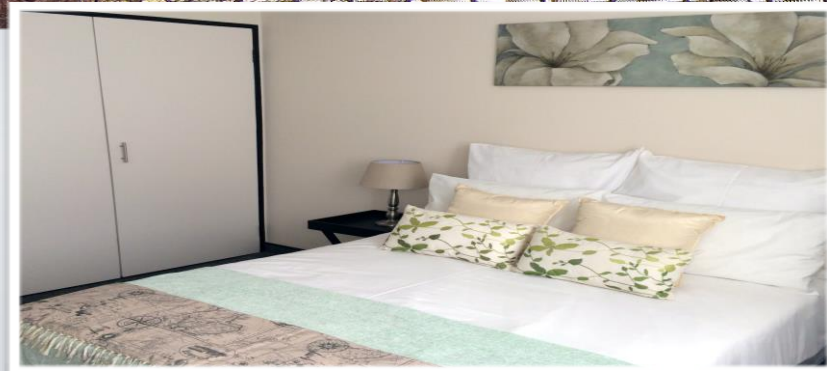
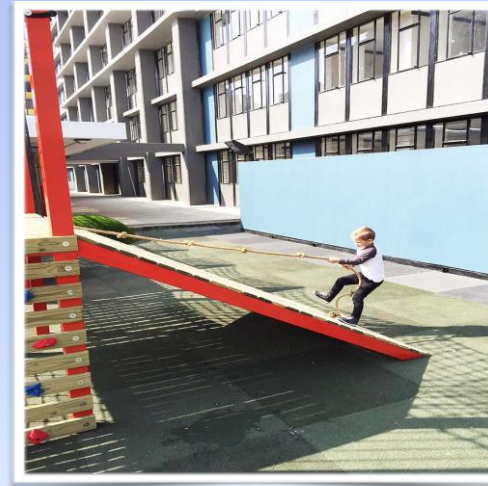


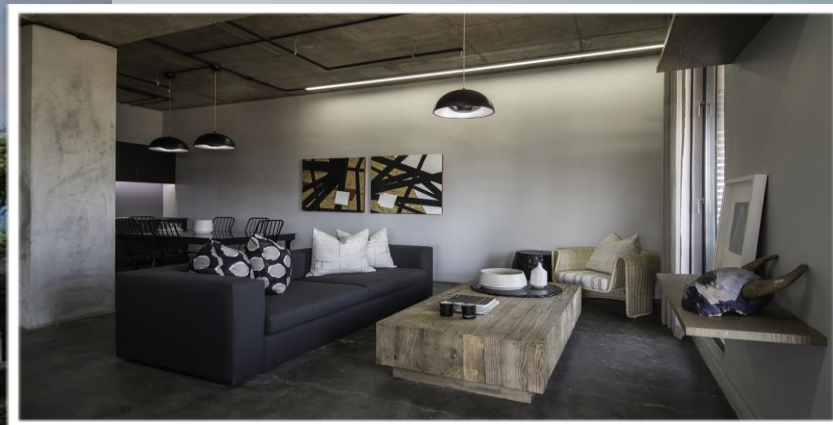
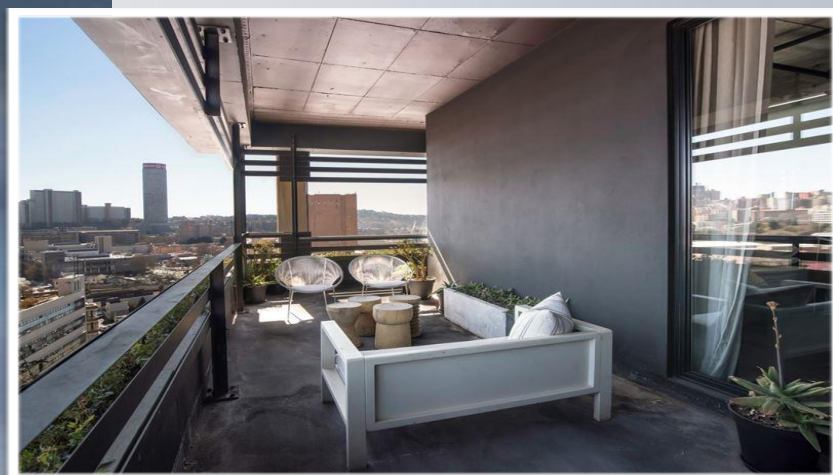
# Kallumbila Hotel in Zambia

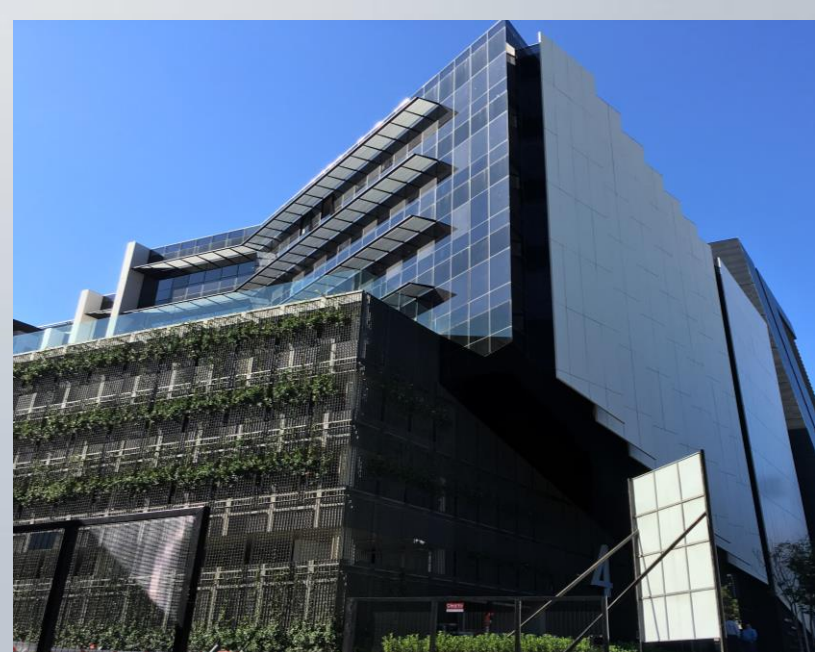
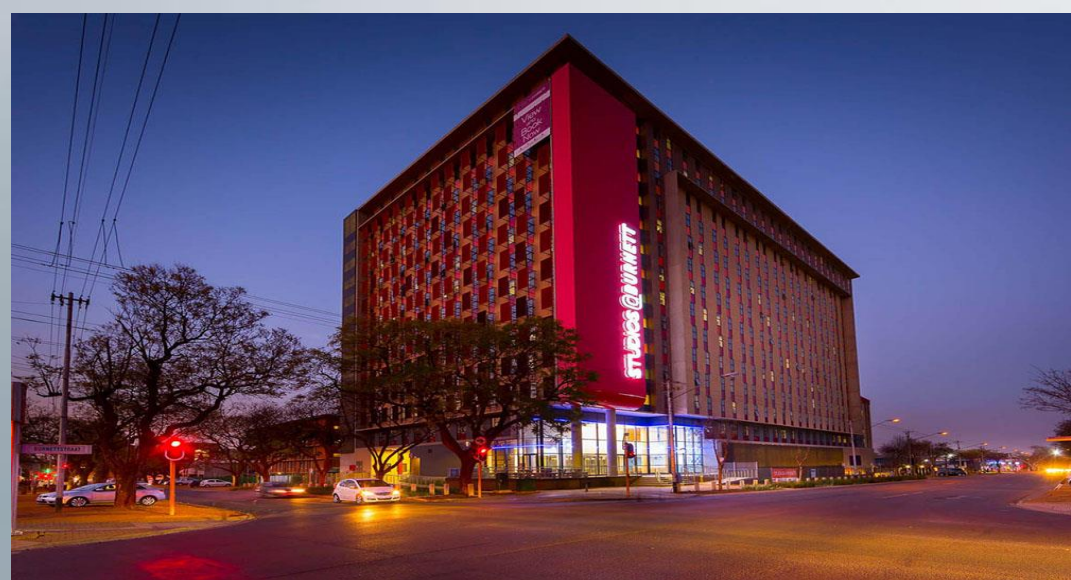


# Midrand Estate House



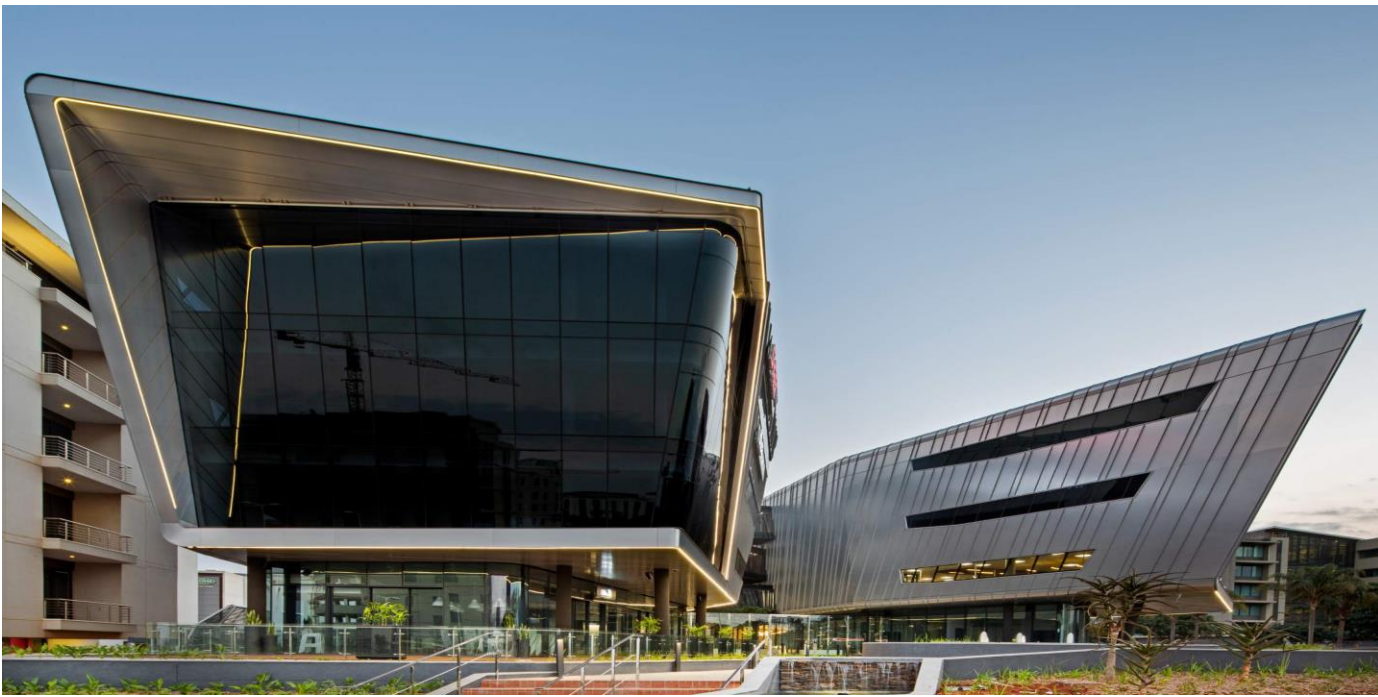








KPMG OFFICES UMHLANGA DURBAN



KPMG OFFICES UMHLANGA DURBAN

# WATER IS OUR PASSION



Don't waste it

# Everest partnership with Yoruba Solar

- ▶ EVEREST has partnered with YORUBA SOLAR (PTY) LTD, which is a private company that was formed and registered in 2015 by Malibongwe Godfrey Fondini and Xolani Kiti based in Grahamstown, Eastern Cape.,
- ▶ The company was established as an initiative to bring water amenities in particular underground water to self-sustained communities such as rural areas and surrounding areas
- ▶ Our Partnership conducts Geophysics study (borehole siting) drilling + supervision, borehole yield testing, equipping, refurbishing old boreholes, rain water harvesting and irrigation system.
- ▶ We are a project-centered company that tailor-make solutions and services to address customer-specific business and project requirements



# Services Offered

▶ Borehole site survey

▶ Borehole Drilling

▶ Borehole testing



▶ Borehole installation

# Services Offered

- ▶ Solar Powered Boreholes
- ▶ Electric boreholes
- ▶ Refurbish old boreholes
- ▶ Irrigation System
- ▶ Plumbing /Pipping



# Borehole siting, survey and water production



# Borehole siting, survey and water production



# Borehole siting, survey and water production



# Borehole siting, survey and water production



# Borehole siting, survey and water production



## Everest Construction® has the solution: The AQUAmax® Wastewater Treatment Systems

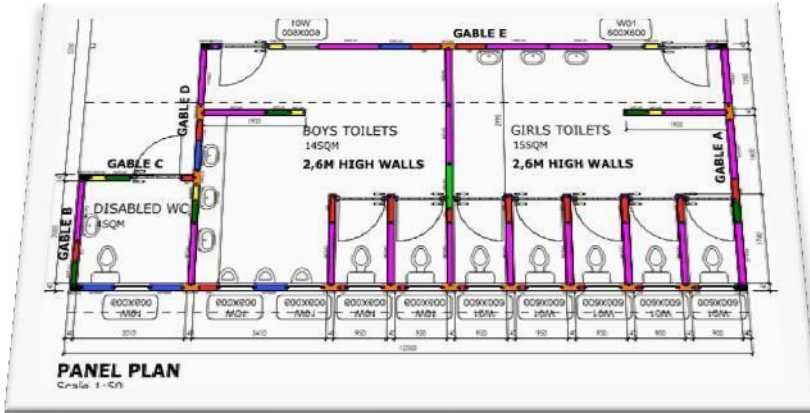
Clean fresh water - (essentially our planet's essence of life) is under threat in the immediate future, due to failing Wastewater infrastructure and contaminated water sources.

- South Africa and Africa as a whole face huge challenges in fresh water supplies and basic sanitation requirements. Approximately 11% - 1.4 million-households in South Africa have No sanitation services
- A further 3.8 million households have sanitation services which do not meet basic standards.
- This holds true for most of Sub-Saharan Africa

Everest Construction® has the solution: The AQUAmax® Wastewater Treatment Systems



# TOILET PROJECTS FOR GP DEPARTMENT OF EDUCATION



## Development Targets

- **Modularly structured - PRO Series** is based on standardized aeration and pumping modules
- **Comprehensive delivery package - The Package** includes all necessary assembling parts (from the first screw up to the control unit)
- **High capacity aeration systems aerators - Surface Aerators or bottom aeration** with high aeration capacity at low energy consumption
- **Powerful control units - proControl<sup>®</sup> 2** – the control centers of the plant. Comprehensive functions, preset values, logbook, etc. RCD
- **Service friendly - All Units** can be easily removed and serviced from directly over the plant

## Sewage treatment plant

for commercial applications like restaurants, hotels, holiday resorts and small communities and villages



AQUAmax® PROFESSIONAL G  
4 – 53 PE



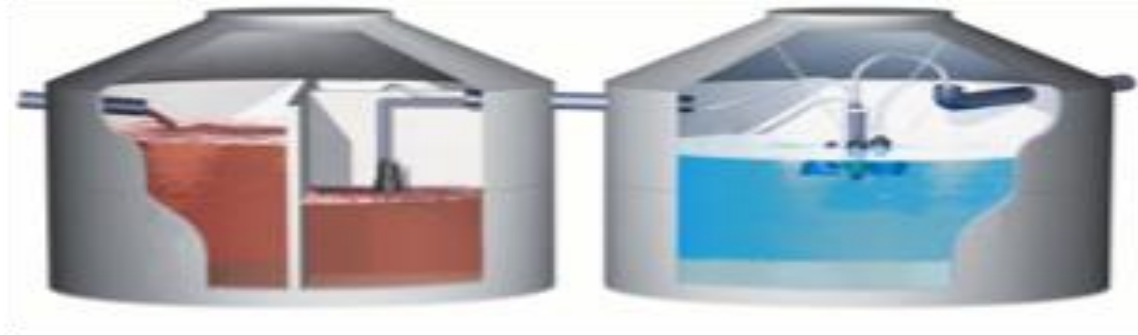
AQUAmax® PROFESSIONAL XL / XXL  
60 – 2.000 PE

# Suitable tanks for our plants

independent of material and geometry our plants can be installed in nearly all types of tank – from concrete via plastic up to GRP tanks.



# Water and Sanitation



**AQUAmax<sup>®</sup> PROFESSIONAL G**  
**4 – 100 People**



**AQUAmax<sup>®</sup> PROFESSIONAL XL / XXL**  
**100 – 3.000 People**



# Our plants in operation

Possible areas of application:

- Hotel/catering/commercial operations
- Food processing companies
- Residential areas/villages/towns
- Public buildings/installations
- Tourism facilities

## Kopanelang Thuto Primary School Project Sasolburg Sewage treatment plant

**Project description: Sewage treatment plant for 1800 School Kids and Teachers in one SBR stream. Pre-treatment by a collecting Tank, Primary tank, then Buffer tank, 1 x SBR Reactor, UV-Unit for disinfection and 6 water re-use tanks for flushing of toilets and irrigation of sports field and Greenhouse where vegetables are grown for feeding the children.**



# 2000 pupil Kopanelang Thuto Primary School project Sasolburg Sewage treatment plant



# Sasolburg Sewage treatment plant



## Re-usable water for Irrigation



## The benefits of the decentralised solution offered by Everest Construction

- Exceeds the Green Building Council of South Africa's (GBCSA) Water Saving Requirements.
- Saves from 40% up to 100% of fresh water resources by re-using all treated black water for flushing toilets, irrigation and heat rejection.
- No sewerage connection or new expensive municipal wastewater infrastructure required. This is a saving for municipalities of R3million per kilometre in infrastructure for sewage piping.
- Individual expansion is possible with decentralised wastewater plants that are modular and built on-site with unique modular building blocks.

# Alternative Building Technology Construction Video Links

- ▶ **Alternative Building Technology**

- ▶ <https://twitter.com/EverestConstr/status/1008400017193885702?t=5-lPCvjtczsgpoDBvWh3Sw&s=08>

- ▶ **Testing**

- ▶ <https://www.youtube.com/watch?v=WMkz5UR1GfE&feature=youtu.be>

- ▶ <https://www.youtube.com/watch?v=jowjTV3kvLI&t=55s>

- ▶ **Wastewater Treatment Plant**

- ▶ <https://youtu.be/3v5Xczm4l9w>



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