

# Low Cost / Affordable Housing Projects & Disaster Relief Building Solutions

THE TOUGHEST, SAFEST & EASIEST, NO MATTER HOW EXTREME THE LOCATION

For more info contact: sales@MyBrick.co.za or +(27) 79 451 1991

www.MyBrick.co.za



#### WHO IS MYBRICK

MYBRICK (PTY) LTD is an innovative South African company specialising in Interlocking Technologies. This includes the manufacture of an advanced type of brick, by modifying the properties of soil with chemicals and hydraulic compression, making it more dense, increasing binding of the soil particles, creating an extremely strong and waterproof brick far superior to the traditional clay brick or concrete block. During the compression process, it is formed into a unique interlocking shape, which further enhances the ease of building with a minimum of skilled labour. This combination has made the MYBRICK Interlocking Brick the best brick available in the world. These bricks have been used, sometimes in extreme locations, to produce low cost, long lasting bricks for houses, apartment blocks, schools, hospitals & government buildings.

It has an experienced management team that have produced high quality building structures all over the world from these bricks, at a fraction of the cost and time than traditional building methodologies.

#### MYBRICK (PTY) Ltd are directly involved with

- manufacturing the most advanced Interlocking Brick Making Machines
- designing the moulds for the MYBRICK Interlocking Bricks
- RoadPacker CBS as supplier of chemical additives
- training and supporting clients worldwide
- advising on project management and consulting for building projects

They primarily supply machines to

- government initiatives for low cost / affordable housing projects
- building relief efforts after natural disasters
- contractors and developers of housing projects
- entrepreneurs



#### WHAT ARE THE BASIC STEPS

- 1. Receive comprehensive training on interlocking building techniques\* at supervisor level, if necessary, either at clients site or at the Cape Town MYBRICK offices.
- 2. Have a MYBRICK Brick Making Machine and RoadPacker CBS (the specialised chemical) delivered to site anywhere in the world.
- 3. Start manufacturing MYBRICK Interlocking Bricks immediately onsite and begin building high quality structures in record time.



#### LOW COST / AFFORDABLE HOUSING PROJECTS

The US based *Hoover Research Institute* estimates that the current 2020 world population is 7.8 Billion, with projections for 2050 being 10 Billion.

As the population increases,, large needs arise for housing, schools, hospitals, apartment blocks, government buildings amongst others. Due to the volume of basic services necessary, particularly in economically depressed areas, the focus is steadfastly on affordable & innovative building technologies that can supply volume without compromising quality, efficiently utilising local resources and unskilled labour.

MYBRICK supports and encourages low cost housing in any area where there is a lack of conventional housing. We are continually researching systems to improve building technologies at affordable levels and that are sustainable - including training, compaction, mobility, density, bearing strength, practicality & safety within the local communities where structures are needed. This provides high quality products at a low cost that meet the needs of the millions of low cost housing units required annually around the world.

There is no available technology that will allow you to quality build as fast as with the MYBRICK Interlocking Bricks, at such a competitive price.

MYBRICK works remotely with the contractors ensuring support and sufficient training is adequate. However our experts can come to the building site to assist or advise if required.

On large building projects, the advantages of using MYBRICK are:

- 1. A mobile Interlocking Brick Making Machine can be delivered directly to the building site, no matter where, or how remote,
- 2. Structures can be built in record time and at a fraction of the cost compared to traditional building with clay bricks or concrete blocks.
- 3. The Machine is on a heavy duty trailer so can be moved easily from one part of a construction site to another without major disruption to the project. It can also be easily moved to another site.
- 4. The Machines use the soil from site so they can begin producing bricks almost immediately.
- 5. Unskilled labour, including women, can be used with minimal skilled labour necessary.
- 6. Minimal cement is needed as the houses do not need mortar between brick layers and plastering is not necessary.
- 7. The MYBRICK Brick Making machines are the toughest on the market ensuring long use in the hardest environments. They are also the safest so will reduce any potential harm to any of the users.
- 8. Over a long period of time, the structures built will have no water damage or breakdown of the bricks, commonly found in large building projects due to inferior materials being used, or not using additional stabilizing chemicals. The unique MYBRICK compression process and chemical additives used ensures consistent quality.
- 9. The houses will also be comfortable for the occupants as the bricks are excellent insulators, keeping extreme weather conditions outside.





#### EMERGENCY DISASTER RELIEF

The world is experiencing unplanned increases in natural disasters due to global warming. Along with these disasters comes housing and infrastructure devastation that need urgent relief measures. The relief measures include fast build systems that can endure severe wet weather, insulate against high temperatures, be effective in seismic areas and use resources that are readily available.

MYBRICK can assist almost immediately. The MYBRICK Interlocking Bricks can be used in the creation of new permanent structures as they need very few raw materials. Once machines have been shipped to the disaster areas, they can provide the rudimentary requirements for a community to return to a normalcy as far as possible.

On emergency building projects, the advantages of using MYBRICK are:

- 1. Mobile Interlocking Brick Making Machine can be delivered directly to the area, no matter where, or how remote,
- 2. Structures can be built in record time using raw materials found near the area so they can begin producing bricks almost immediately.
- 3. The Machine is on a heavy duty trailer so can be moved easily from one area to the next, as required.
- 4. Unskilled labour, including women, can be used with minimal skilled labour necessary.
- 5. Minimal cement is needed as the houses do not need mortar between brick layers and plastering is not necessary.
- 6. Not only will the structures be extremely strong, but also comfortable for the occupants as the bricks are excellent insulators, keeping extreme weather conditions outside.

Once a few MYBRICK Interlocking Brick Making Machines and additive have been delivered to the disaster area, the local government representatives can immediately begin to produce homes, schools and even hospitals to accommodate the homeless population.





#### MACHINES SUITABLE FOR LARGE HOUSING PROJECTS & EMERGENCY DISASTER RELIEF





Heavy Duty For Large Projects Up To 5000 Interlocking Bricks Per 8 Hour Shift 200 sqm Of Walling Per 8 Hour Shift Available In Diesel Or Electric 300 Litre Heavy Duty Integrated Pan

**MODEL M7XXL** 



Heavy Duty For Medium To Large Projects Up To 1500 Interlocking Bricks Per 8 Hour Shift 75 sqm Of Walling Per 8 Hour Shift Available In Diesel Or Electric 200 Litre Heavy Duty Integrated Pan



#### DETAILED CONSTRUCTION PROGRESS OF A 55 SQM HOUSE WITHIN AN AFFORDABLE HOUSING PROJECT





## **ARCHITECTURAL PLANS**





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Elevation

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#### THE MYBRICKS INTERLOCKING BRICKS USED IN THE ENTIRE HOUSE

- were manufactured using the MYBRICK Mobile Machine
- used 5% -10% cement mix in each brick (total of 120 pockets of cement)
- used the RoadPacker CBS Chemival Additive (total of 13 liters)
- used normal ground soil
- used no cement between each brick layer (except the 1st row)
- used 1 skilled bricklayer & 4 unskilled workers from area





4500 x 200 mm Outer Wall MYBRICKS 1500 x 150 mm Inner Wall MYBRICKS 400 x 200mm Corner MYBRICKS



## THE TOTAL MYBRICKS USED

## **STAGE 1 – FOUNDATION**

First the foundation was laid and 10 days were allowed for curing. During this period, the MYBRIKS were manufactured using the Mobile MYBRICK Brick Making Machine.





## **STAGE 2.1 – WINDOW LEVEL**

On the cured foundation, damp course was only used below the first row of bricks. This was carefully laid checking horizontal levels and alignment with fish lines. The first line is always critical for the construction and great care was taken to make sure that the bricks joined perfectly on the 1<sup>st</sup> row.

Reinforcing bars were inserted in the MYBRICKS linking the roof attachment to the first row of bricks.

Thereafter the laying was quick, efficient and the linking together of the walls was secured easily through a T junction and corner brick. Reinforcing bars and electrical wire were inserted directly in the passages of the MYBRICKS.





## STAGE 2.2 – DOOR LEVEL

The building now continued at a fast pace. Windows and inside walls took their position and shape. The quality of walls started showing with excellent face brick effect, tight fit and great finishes. It was difficult to imagine dry stacking blocks have been used. Progress goes to above door level.





## STAGE 2.3 – ROOF LEVEL

The lintels were positioned going to roof fitting level. A column for supporting the veranda's roof was made by using the corner MYBRICKS and a reinforcing pipe in the center. Roof wires were attached to reinforcing bars 4 rows lower and were brought to the top to attach the roof trusses. The roof was now ready to fit.



Wires passing trough the bricks and secured with mortar







## **STAGE 2.4 – INSTALLING THE ROOF**

A solid light "Dezzo" light weight galvanized structure was fitted in a few hours. Lafarge tiles were used for cover. By the end of the day, the house was ready for final finishes.





#### **STAGE 2.5 - INTERIOR**

While finishing the gable walls, ceilings were fitted and plastering of bathroom and kitchen wall went on, followed by final touches to the face brick effect and finalizing of the electrical circuit. Grouting was done on the exterior walls.







## **STAGE 2.6 - FINISHING**

Final painting, touch ups, dressing, cleaning the site and checking all installations.





## **PROJECT BRICK COSTING**

PROJECT COSTING FOR THE BRICKS & FINISHES	QTY
Raw Material Cost	NIL
Transport of Bricks	NIL
Cement pockets used in entire house, including mortar, bricks, grouting & finishes - EXCL foundation	130
RoadPacker CBS Chemical Additive (in Litres)	13
Skilled Labour	1
Unskilled labour	4



## A LARGE PROJECT EXAMPLE (10 000 SQM SITE)

#### **Assumptions:**

Site Size	10 000 m <sup>2</sup>
Services to site (25% of total site size)	2 500 m <sup>2</sup>
Balance of land site for house builds	<b>7</b> 500 m <sup>2</sup>
Each residential stand size	100 m <sup>2</sup>
Number of 55m <sup>2</sup> houses possible, each on a 100m <sup>2</sup> stand	75

MYBRICKS REQUIRED FOR 75 HOUSES	Per House	Qty of Houses	Total
Outer MYBRICKS	4 500	75	337 500
Inner MYBRICKS	1 500	75	112 500
Corner MYBRICKS	400	75	30 000
TOTAL MYBRICKS Required			480 000

MATERIALS REQUIRED FOR THE MYBRICK MANUFACTURE	Per House	Qty of Houses	Total
Cement Pockets used in the MYBRICKS manufacture	120	75	9 000
Cement Pockets used for grouting, rims, fine touches, finishes, etc	10	75	750
Bonding Agent in Litres	13	75	975

#### **MYBRICK BRICK MAKING MACHINES**

- Model M7XL produces up to 1500 MYBRICKS per 8 hour shift

- Model M7XXL produces up to 5000 MYBRICKS per 8 hour shift













#### FOR MORE INFORMATION CONTACT:

Derek Grobler sales@mybrick.co.za +27 79 451 1991 www. MyBrick.co.za

