CONTENTS

Editorial advisory board 8
Editor's note and contributors 10
LIGHTSWITCH: Sixteen on Countesses 12
Notable 14
PROJECT: Qatar National Convention Centre 26
OPINION: COP18 34
PROJECT: Alexander Forbes 38
PIONEER PROFILE: Paul Carew 50
PIONEER PROFILE: Marloes Reinink 56
PROJECT: The Mamohau and Itekeng Drop-in Centres 63
TECHNOLOGY: Wind and REIPP update 72
PROJECT: 360° Kransberg 80
BOOK REVIEWS: Just Transitions, The Hunger Season, 2 Billion Strong 89
Subscription 95
SHOWSTOPPER: L'Assemblée Radieuse 96

issue 12 // www.earthworksmagazine.co.za // 7
THE INTRIGUING ECONOMY OF Adobe building

In South Africa, the dichotomy of mud house living sits between those sophisticated and informed urbanites aspiring to a low carbon footprint lifestyle, and those others burdened by poverty, who do so out of necessity. Sites throughout the country include many manor houses, barns and labourers cottages built in agricultural regions, which reflects the rich traditions of past generations.
There are more people in the world living in houses built of mud, than in any other type of material, combined,” says Malcolm Worby, founder of the non profit trust Homeless and Poor People’s Initiative (HAPPI).

MARGINALISED COMMUNITIES

The sustainably built adobe drop-in centres of Mamohau and Itkeng, each site with two buildings, came about as the result of HAPPI’s skills training projects. Mamohau and Itkeng are two of ten drop-in centres funded by African Solutions to African Problems (ASAP), which develops and supports community-based organisations of women providing holistic care for orphans and vulnerable children affected by HIV and AIDS in SA.

Built in remote rural locations, these centres are constructed with adobe bricks and natural materials sourced locally by community members of Masupha and Thabaneng rural villages. Situated about 45 km from the Eastern Cape village of Matatiele and 5 km apart from each other, the centres are close to the Lesotho border at the foothills of the Drakensberg Mountains. The results are evidence of the continued efforts of HAPPI and ASAP to ease the plight of orphans and vulnerable children belonging to large local communities and marginalised by geography and language.

Founder Priscilla Higham says: “ASAP currently manages ten drop-in centres, from where the ASAP model is implemented to provide services to the children living in rural villages.”

Through the HAPPI skills training projects overseen by Worby, who is contracted by ASAP, wonderful results are seen in creating significant community assets. Higham says organic food gardens are established to improve nutrition and they supply both training and equipment.

She explains: “Financial support is provided to
keep children in schools, to facilitate access to health care, to provide training for the child carers, and to initiate psychosocial support interventions for children." She says youth development and library projects, as well as delivering ongoing capacity building training, including project management and financial oversight, also form part of the ASAP model.

**HOME-GROWN SOLUTIONS**

As a sustainable building design expert, with a wealth of experience gained from completing numerous adobe building projects locally and abroad, Worby says HAPPI was founded primarily to facilitate skills training-based projects to local communities. The comprehensive programme is centered around sustainable building methods, as well as sustainable living, with education and positive upliftment at the core of each project. Making this all possible is the implementation of the ASAP model, based on approximately nine years of practical experience that embraces the value of home-grown solutions, where sustainable development begins with people who benefit from ownership and the realisation of their ideas.

In Worby's view, the HAPPI skills training programmes are pivotal to developing the limited and often non-existent skills found among local communities of the region. He says results show significant progress benefiting communities in all aspects of life, from basic labour skills to employment opportunities, also enhancing growth of local economies. He says the ASAP model is designed so that over time, individuals acquire sufficient skills to produce basic building designs and plans to continue building using this cost-effective and natural method. Also not to be underestimated is the positive impact on communities of the pride which stems from newfound abilities.

Members of the local community are enabled to
incorporate building design elements to cater for typical weather conditions with harsh winters and long summers. In developing the individual skills of builders and members of the community, optimum orientation of structures now form part of a building plan. An industry skill often taken for granted, he says, is the basic knowledge of how to consider the impact of prevailing breezes so as to produce, on a limited budget, effective cross ventilation and cooling during hot summers, while maintaining sufficient insulation for winter.

Other important skills training provided during these projects, says Worby, are the production of the adobe bricks, bricklaying and carpentry work. The adobe building method tried and tested by Worby in different parts of the world including in New Mexico in the USA, has proven ideal when considering the natural resources that facilitate the process. Women from the local community would mix together combinations of sand, clay, and water, followed by the forming of the rectangular adobe bricks, before laying them out to dry in the sun.

For Worby this method, with similar sustainability features as mud brick buildings that have lasted for thousands of years around the world, produces weather-resistant and durable structures requiring minimal maintenance. He says the advantages of this method are particularly notable in extreme climates, and, when compared with conventional brick and mortar as well as timber structures, it offers greater thermal mass qualities.

**SHARED EXPERIENCES**

Travelling by road to reach the villages of Masupha and Thabaneng, make for treacherous and time-consuming journeys by motor vehicle - which might bring greater appreciation of alternative means of transport. Worby tells of the project’s builder, the late Mr Tsukutlane Matekase. He was a longstanding member of the local Sotho community and fondly remembered as “Mr. Mike”, who was regularly spotted making the 10 km journey to his workplace at Thabaneng on his Basotho pony.

In describing the sequence of events during
**SUSTAINABILITY FEATURES**

- Site location selected for minimal impact
- Orientation optimum cooling, heating, rain protection
- Foundations stones gathered by women locally
- Damp proof cover bitumen painted on top of rock foundation
- Adobe material soil/clay sourced from building site
- Mortar same clay as bricks
- Water rainwater harvesting set-up for building purposes; the tank has since been moved to collect water from a tank higher up the slope as a water supply for the drop in centre.
- Door and window lintels constructed on site from sustainable wood
- Wood sealants recycled motor oil/paraffin mix
- Manual building labour sourced locally, no machinery, electric tools, or generators
- Plaster interior and exterior, clay and dung
- Interior wall finishes lime wash
- Battens supplied and cut locally
- Thatching all materials sourced locally
- Roof overhangs shade and rain protection
- Floors mixture of mud/cement
- Doors and windows custom designed, using sustainable wood source
- Wood sealant mix of mineral spirits and linseed oil
- Exterior paint non-toxic low volatile organic compounds
- Cement minimal
- Permaculture gardens rainwater harvested on rooftop, channelled to lower site

---

**a typical drop-in centre project, Worby says the process is initiated by the granting of land by the local village chief. Once the allocated land has been made available, a local builder is nominated by the community who assumes the management of team members. Following a skills training programme presented by Worby, the appointed builder is made responsible for working within an allocated budget that includes materials and wages, for the duration of the project. By paying labourers the going rates of the area, a by-product of the programme is the promise of an improved local economy.**

What comes through strongly in these projects, says Worby, is the attempt to encourage the preservation of the cultural heritage of communities in different geographical locations. Bearing in mind the historical traditions of their culture, building plans are designed in a style that is representative of the community. They also take charge of the sourcing and gathering of materials, while the local builder is responsible for the hiring of reliable labour within the local rural villages. Illustrating the enthusiasm and dedication of community members, is the way some of them make their way to building sites on foot regardless of the season.

Male members of local communities provide physical labour during construction, ranging from...
the preparation of materials to installations. On-site activities take place using only hand tools. This includes the cutting of timber poles, as well as door and window lintels made from sustainable local wood planks and treated with used motor oil or paraffin mix for protection.

The low-impact carbon footprint and optimal cost effectiveness of these projects are also seen in minimal quantities of cement used in the overall construction of the drop-in centres, measuring around 14 m by 6 m, and 300 mm thick walls. Small amounts of cement are mixed with mud for the mortar used in the foundation walls, and to create the 100 mm thick floor. Bitumen is painted on top of the rock foundation walls to create a damp proof course.

Worby regards the role fulfilled by local women for this project as vital. Women gather building materials - from the rocks used in the foundations, to the water and the thatch that is cut and bundled prior to building and covering rooftops. They also mix the mud used to make adobe bricks, make the bricks, plaster the walls, paint the exteriors in exquisite Basotho patterns, and lime wash interior spaces.

The remarkable efforts of the women of the local villages are illustrated by how teams of four women were able to produce 3 000 adobe bricks within a seven day period, averaging over 400 bricks per day.

Once building structures for the two drop-in centres were completed, they were equipped with new traditional styled furniture designed by Worby, including tables and benches made by a local carpenter. Also planned for the near future, is electrical connectivity and solar panels to facilitate lighting and powering of a portable television set, laptop computers and cell phones.

ASAP pays monthly stipends to women from the village as remuneration for cooking and caring duties for the children.

Other HAPPI community based skills-training projects currently underway include Ibba Girls School in South Sudan, a teachers' resource centre for Red Earth Education in Masindi, Uganda, two drop-in centres constructed out of sandbags in Mongu, Western Zambia and three drop-in centres near Mount Frere for ASAP. Future projects for 2013 include a low-cost housing scheme and a school, both in Zambia.

**SOURCEBOOK**

Project facilitator and building skills training Homeless And Poor People's Initiative Malcolm Worby 072 997 4404 www.happi-online.org


Natural and sustainable building design Malcolm Worby Designs 072 997 4404 www.malcolmworby.com

Builder Tsaikutane 'Mr. Mike' Matekane

Thatcher Zakana Chophi Thabaneng village

Cabinet Maker Elliot Murrall St Paul's Matalele district

Building material supplier Sirrah Hardware Matalele 039 737 4281 sirrah@futurenet.co.za

Windows and doors WP Timber Products Stutterheim 043 683 1349 info@wptrimbers.co.za

Issue 12 // www.earthworksmagazine.co.za // 71