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in Southern Africa

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## NHBRC SPECIAL REPORT

2016 DOHS  
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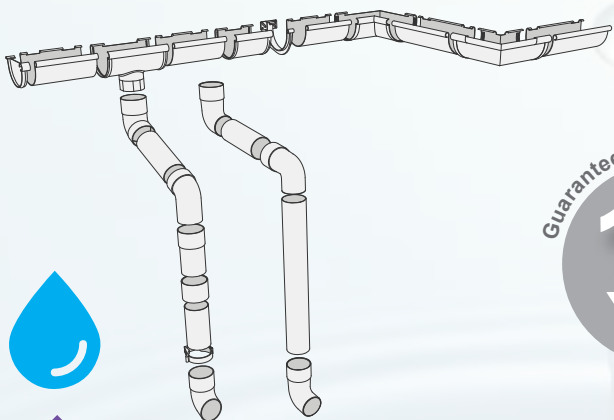
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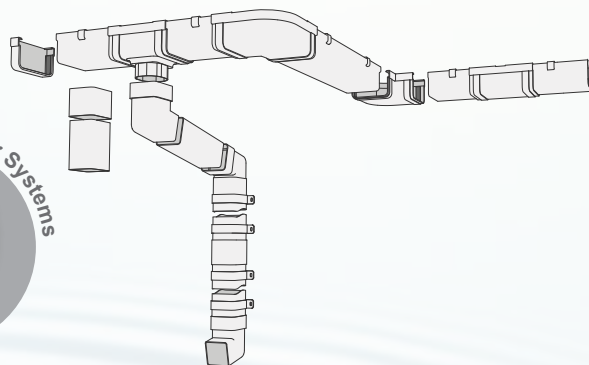


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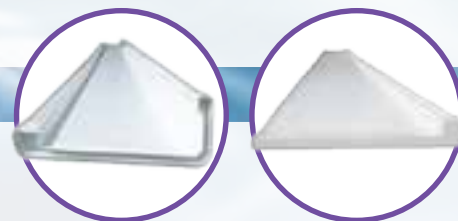
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# HOUSING

in Southern Africa

## CONTENTS

### NEWS

- 2 Ed's Notes
- 4 Living Rent Free
- 4 Urban Renewal Trends
- 5 R2,1 billion Housing in North West
- 6 Fake Sisulu Social Media Pages
- 8 €5 million for NMBM Upgrade
- 9 Bridge City's Mixed Use Vision
- 9 RDP Owners Step Up on the Property Ladder

### HOUSING

- 10 Rent to Own Options
- 11 City Sorts Out Billing Crisis
- 11 More than 170 000 Invoices Paid Within 30 days
- 12 Special Levy Liability
- 12 Save Costs and Attract Tenants
- 14 The Cost of a Ratings Downgrade
- 15 Tenant Behaviour

### NHBRC SPECIAL REPORT

- The 2016 Department of Human Settlements Conference
- NHBRC, Tools & Training
- The Role & Responsibility
- The Merits of IBTs
- IBT Grading Systems

### INFRASTRUCTURE & MIXED USE

- 18 Gauteng to Sell Government Properties

### BRICKS & PAVING

- 20 Affordable Housing and Public Infrastructure

### BATHROOMS, KITCHENS & PLUMBING

- 23 Kwikot Heat Pump and Solar Options

### FLOORS & WALLS

- 25 Contemporary Flooring Solutions



October/November 2016

**HOUSING**  
in Southern Africa

## ED'S NOTES

# Developers and analysts

The team at Nedbank Corporate and Investment Banking's Affordable Housing Development Finance division recently partnered once again with International Housing Solutions to invite industry stakeholders, media and developers to the 8<sup>th</sup> annual I H S conference.

**T**he IHS annual event held at the Johannesburg Country Club is one of those highlights on the housing calendar. Each year Rob Wesselo, Soula Proxenos and their team have excelled in rolling out a robust informative and entertaining day.

Typically the banking sector receives a roasting from developers on risk costs, decline rates on mortgage applications, and funding challenges. Anton Crouse from Cosmopolitan Projects led the roasting.

Keynote speaker and political commentator, Justice Malala offered insights on what we can expect from all the shenanigans at Luthuli House. The politically savvy Malala anticipates that President Jacob Zuma will not be usurped and the mighty Nkandla resident will only leave office after the general election in 2019. The factions in the ruling party are split between Nkosazana Dlamini-Zuma and Cyril Ramaphosa camps. Malala proceeded to track the President's bloopers and blunders since firing former Minister of Finance, Nhlanhla Nene, it was entertaining and compelling in a Greek tragedy fashion – as Zuma's actions wiped out billions of rands in the economy.

Malala's presentation showed President Zuma sitting on his cell phone chatting, while the head of the free world, United States President, Barack Obama, stood waiting at the table to speak. Zuma showed little or no respect. While the next slide showed Zuma bowing respectfully from the waist to Chinese President, Xi Jinping.

While these insights speak volumes, it is the fact that the people are not being heard by the ruling party – that caused three million ANC voters to stay away from the polls. Adding to this are the students who are not prepared to give up their quest for free education. Unfortunately all of these things threaten investment – for services, housing and utilities.

South African comedian Alfred

Adriaan's witty repartee and family jokes brought tears of laughter and livened up the audience in between guest speakers and panel discussions.

Nedbank economist, Nicky Weimar showed how the global and local economy impacts on what is currently happening in the housing sector and where we are going from here. Despite all the bad news and the potential downgrade to 'junk status' by ratings agency there is light at the end of the tunnel.

There are a lot of great companies in the housing sector, who persevere and roll out housing with tight profit margins, deliver affordable products, and use their business acumen to maximise and leverage deals that benefit end users.

One fascinating presentation about fibre optics showed that 'fibre optics is like the oil of the 21<sup>st</sup> century and a 10% increase in high speed internet connections increases GDP by 1,3% without it the economy will remain in the doldrums'.

Another huge housing event took place in Port Elizabeth as the Department of Human Settlements and the National Home Builders Registration Council (NHBRC) Centre for Research and Housing Innovation rolled out an exciting programme.



Carol Dalglish • Editor

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## Living rent free in Cape Town

Most residents have repeatedly refused to sign lease agreements. Thubelisha Homes was responsible for the construction of these apartments with funding from national government. The city did not oversee the development, nor was it involved in the construction. Many occupants live rent-free and refuse to enter into formal lease agreements with the city. While the city has continued to attend to repairs and maintenance of a health and safety nature.

After numerous meetings and workshops some occupants showed a willingness to enter into formal lease agreements. "The city delivered letters to each unit, this was our final

The City of Cape Town took over the management of the 705 units at Joe Slovo Park a few years ago and has been engaging with the Joe Slovo Committee to formalise their occupancy.

attempt to regularise this situation. As a result, 122 occupants out of the 705 responded. Council has now agreed that we will write off R560 000 in rental arrears and services debt of more than R6,9 million, including the amount accrued up to 31 August 2016," says Mayoral Committee Member for Human Settlements, Benedicta van Minnen.

She says that in a landlord and tenant relationship both parties have rights and responsibilities. Rent collected contributes to the



maintenance of the housing stock. "The amount written off will be included in the city's Bad Debt Provision. In future, the council's debt management process will be enforced." ■

## Urban renewal trends

South African cities are undergoing a transformation as urban space is being reclaimed and former abandoned, dilapidated, buildings restored through innovative residential developments and contemporary architecture, which enhance the skyline.

Urban renewal also enhances property values and creates profitable opportunities for residential, retail and commercial property developers and traders. It improves both business sentiment and perceptions, encouraging a sense of civic pride, as well as attracting investment. The South African CBDs' focussed regeneration is also a clear sign that the country's urban population is continuously expanding.

According to Wayne van der Vent, co-founder of Quoin Online, an online property trading portal, "Urban renewal leads to a substantial increase in overall property prices, while urban population growth places an increased demand on infrastructure and transport structures."

In Joburg's CBD, Braamfontein and Newtown nodes there is clear evidence of inner-city renewal with much of downtown upgraded and boasting a medley of arts, entertainment, retail, innovative hubs and



housing. The South African Property Owners Association says the Johannesburg commercial market showed the highest development pipeline ever recorded, with various flagship developments scheduled for completion over the next two years.

Durban is also undergoing major regeneration with reports indicating future projects including the reclamation of areas such as Albert Park, the CBD and Victoria Embankment.

In Cape Town, the CBD is changing its entire footprint. According to Cape Town's Central City Improvement District (CCID), official valuation was almost R24 billion in the 2014/2015 financial year, an impressive growth from just over R6,1 billion in 2006.

Game-changing trends of a growing urban population include a live-work-play destination where the residential population is estimated to have grown from around 750 to

almost 7 000 over the last 16 years.

Night-time economy – the central city has steadily been moving towards a 24/7 economy over the past five years as more people are working in businesses such as call centres.

The urban population continues to expand and an increasing number of the residents and visitors are looking for after-hour activities. There is now a higher demand for retail with longer trading hours, late-night restaurants and delicatessen-type food stores.

Office sharing – is on the rise in the CBD as small businesses and freelance workers continually hunt for rent space within a larger set-up where they can share facilities while working in a professional environment.

"This is a situation also beneficial to landlords looking to increase the number of tenants." ■

## R2,1 bn housing in North West

The Deputy Minister of Human Settlements, Zou Kota-Fredericks recently announced that the North West Province has been allocated R2,1 billion for housing. The Deputy Minister says that 30% of the Department of Human Settlements budget has been allocated to women-owned and 10% for youth-owned businesses. "We want each province to implement these targets for women and youth.

Of the R2,1 billion for the North West Province R585 million is earmarked for mining towns and a further R30 million for the roll out of title deeds. Kota-Fredericks says that women contractors are breaking through the glass ceiling in construction and 13 new women owned entities in the province have been allocated 1 956 units to commemorate the 1956 Anniversary of the historic Women's March to the Union Building.

"We have launched a call for women owned business entities

to participate in the 2016 NHBC Women Empowerment Programme. Women from all provinces are invited to apply for this programme, which is run by the University of Pretoria's Gordon Institute of Business Science (GIBS) in Illovo Sandton. This women contractor development programme provides business and financial skills, project and construction management."

The 1 956 houses will be rolled out in Ngaka Modiri Molema, Bojanala District and Dr Ruth Mompoti.

The construction companies include: Reiti (124 units); Sechoaro (124 units); Blue Flame (123 units); OPT (124 units); Phela Umsebenzi (124 units); Maidu (250 units); Renanao (250 units); Mwelase (250 units); Magasa Civil (94 units); Thari e Ntsho (93 units); Siyanda (66 units); Agang (66 units); and Bondicept (68 units).

The Deputy Minister is encouraging women to become involved in the sector across the entire supply chain, from developing, building, quantity



surveying, engineering, real estate, town planning, property management and social housing institutions. She says, "We have also seen women owned businesses participating in these programmes and building beautiful high rise structures." ■

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## Fake Sisulu social media pages

The Ministry of Human Settlements has warned that there are a number of fake LinkedIn and Facebook accounts, which claim to be those of Human Settlements Minister Lindiwe Sisulu.

The Ministry says that these fake accounts promise people tenders, work and economic opportunities within the human settlements sector in the name of Minister Sisulu.

There are currently five LinkedIn

accounts under Lindiwe Sisulu and all of them are fake.

Facebook has 10 accounts under the username Lindiwe Sisulu. Of these, there is only one legitimate account, which has an underscore in between the username – Lindiwe\_Sisulu.

Industry stakeholders, media and members of the public are advised to block these accounts and also report them to the respective social media platforms. ■

## Are realtors a thing of the past?

President of the National Association of Realtors, in the United States, Tom Salomone recently addressed South African estate agents on the technology challenges facing estate agents today and what it takes to make a great agent.

Delegates at the Real Estate Business Owners of South Africa (REBOSA), Salomone said that the peak home buying years are between 25 and 45 years old. The sheer size of the millennial generation should mean a peak in home sales and a good time for realtors. There are now even more millennials than baby boomers. Census records indicate 92 million millennials versus 77 million baby boomers in the USA.”

According to Salomone technology is central to the millennial generation as primary home buyers, their reliance on tech is dramatically influencing the way property is bought and sold.

“Agents are increasingly finding more value in advertising on the property portals, as opposed to newspaper adverts as the buyers are online.” Jan le Roux, Chairman of REBOSA agrees and adds, “At the moment making use of tech like portals and social media is quite advanced in the US and it’s been very informative to learn how estate agents there are incorporating this into their marketing and sales. Real estate is a relationship-centric business.”

While it is imperative that agents become tech savvy in order to reach the millennial generation Salomone



says that the biggest question he is asked wherever he goes is, ‘Will technology render the role of an estate agent obsolete?’ “The answer is always a resounding ‘no’, there is a new threat every day; sometimes it’s a start up looking for more home buyers by under cutting agent commission rates, or by offering an online transaction platform that by-passes the need for an agent altogether! And we’re only at the beginning of this transformation, where new technology and business models seek to make inroads into gaining consumer trust, in managing the most important transaction in their lives.”

According to Salomone, even though 50% of buyers in the US start house hunting online, 90% will use

a real estate agent by the time they buy. He says that it is at this junction where estate agents have won the game for years, and will continue to do so.

“Practitioners must never underestimate the importance of the human factor in the transaction and that’s where we all need to master our skills. Relationships cannot be replaced by algorithms and technology platforms but we need continually update our knowledge of new technologies,” says Salomone.

Le Roux adds, “We firmly supports our estate agents and provide them with the best information and we were delighted that Tom Salomone shared his knowledge, insights and inspired REBOSA members.” ■





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# 5 MILLION EUROS FOR NMBM BAY UPGRADE

The Helenvale project aims to become a blueprint in addressing housing, living space, public space and infrastructure, in order to eliminate poverty and improve conditions. The Helenvale community has been deeply affected by poverty, crime, drug abuse and domestic violence.

The metro has been tasked with rolling out the funding over a period of five years. At a recent workshop with the various stakeholders the German Development Bank Senior Project Manager, Gabriela Götz, said that other cities can replicate the Helenvale model. This includes a 200 unit pilot housing project.

According to the MBDA CEO, Dr Pierre Voges, "Project timelines are behind schedule, as the city and the Helenvale community need to resolve challenges, unpack and analyse the medium term review. Participants included: the Nelson Mandela Bay Metro Executive Mayor, Athol Trollip, Acting Municipal Manager, Johan Mettler, community leaders, municipal and provincial delegates, social partners and community forums.

Voges reported R20 million had been allocated and only 30% of the projects had been completed. This falls short of the projected 50% target for this stage.

Strategic pillars include:

- Public space and infrastructure delivery stood at 40% completion (original projected target: 70%);
- Initiatives promoting safer schools was recorded at 45% (original projected target: 60%);
- Youth employment promotion stood at 25% (original projected target: 50%);
- Prevention of domestic violence was 30% (original projected target: 55%);
- Improvement of living spaces stood at 30% (original projected target: 45%).

Voges said that the recent local municipal elections had affected project timelines and delivery targets. "The last six months prior to the elections were extremely disruptive. Contributing factors included the long procurement process before appointing contractors; and leadership contests that included the ward committee and PAC in decision making processes. But the people voted, and now we must put our heads down and start work

The German Development Bank (KfW) has provided funding of €5 million to the Nelson Mandela Bay Metro (NMBM) for the Safety and Peace through Urban Upgrading (SPUU) initiative, through implementing agents, the Mandela Bay Development Agency (MBDA), for Helenvale.



**Athol Trollip, councillor Pieter Hermaans and Gabriele Götz, at the Helenvale Resource Centre in Port Elizabeth.**

again. Everyone is committed to working hard in order to catch up."

"We are worried about the pilot housing project, we need to resolve the council-funded portion. For every rand from KfW the metro must match it. The German funder needs this aspect resolved before we can unlock the next trench of funding for the project."

Voges points out that a major concern is the maintenance required for the buildings and infrastructure created in Helenvale.

However, Trollip said that the city and administration will work hard to make the SPUU a great success story.

He added that Helenvale is the picture of peace and community life one day, and then suddenly violence erupts the next. "We want to see this community

transformed. We appreciate KfW's partnership and the implementation so far by the MBDA. But we are concerned about the 200 houses in the housing pilot project promised to the community that has not materialised. We

cannot tell people they will get houses and then we don't build or deliver them. This will have to be investigated. No more empty promises!"

Trollip underscored the importance of community ownership. ■

'We are concerned about the 200 houses in the pilot project that have been promised and have not been built.'

# Bridge City's mixed use vision

**E** Thekwini Municipality recently acquired the development rights for five town centre sites that have been identified for social housing opportunities.

The social housing plans are an essential component of this vision, building on the 48 000 m<sup>2</sup> Bridge City shopping centre and the regional magistrate's court, which are already operational, and the 500-bed regional state hospital is scheduled to open in 2019. Construction will begin shortly on a 150-bed private hospital and nursing home will commence shortly, while enquiries for further residential, office and destination retail facilities are being processed.

Founded on the existing rail service under the Bridge City shopping centre and the Bus Rapid Transport (BRT) routes under construction will link the development to Durban, Umhlanga and Cornubia. The city and Tongaat Hulett aim to establish Bridge City as a fully functional, mixed use town centre able to meet the region's current and growing needs.

"The whole picture of what we envisioned for Bridge City is now coming together with the development of key sites within the town centre," says Brian Ive, the joint venture's Development Executive responsible for Bridge City. "Our plans for a functional mixed-use development that combines public sector sites and services and excellent public transport with private sector investment is now almost complete."

With a third of the town centre site around 91 000m<sup>2</sup> still available Ive anticipates that once the BRT

The Bridge City development north of Durban is gaining momentum as a new urban centre with plans for densification, new transport nodes.



infrastructure is completed in March 2017, more developers will be on board. "There are still opportunities for residential, retail and commercial developers. Commuters, consumers and residents are attracted to a town centre that offers a secure and clean urban environment."

Ive adds that Bridge City represents one of the most affordable fully serviced property development products on the market. "We have invested in this development together with the city because it is well located and we're actively seeking developers who share this vision. The goal is to develop a truly integrated mixed use development that represents the vision of a new urban future for South Africa." ■



## RDP owners step up on the property ladder



**R**ob McGaffin, Senior Lecturer Department of Construction Economics and Management at the University of Cape Town reveals that beneficiaries of fully subsidised houses have indeed started on the property ladder.

Unfortunately, government require beneficiaries of fully subsidised houses to hold onto their properties for a period of eight years. Statistics show that almost 90% of beneficiaries in George sold their properties thereby profiting illegally.

And, almost 60% of RDP houses in

Dunoon have either been sold, or let, despite threats by MECs to confiscate the houses and reallocated to the needy.

Other trends that emerged during McGaffin's presentation at the recent 8th annual International Housing Solutions conference in Johannesburg was the increasing demand for apartments. In a decade the demand for apartments by black households has doubled, escalated in Indian and Asian households and slightly dropped in white and coloured households. ■

# RENT TO OWN OPTIONS

Certain market conditions, such as tight credit conditions at the big commercial banks, have a knock-on effect on property affordability and often results in many buyers being unable to secure home loans.



**Barry Fourie**

In these situations, creative solutions like rent-to-own become an attractive option, according to Barry Fourie, Rawson Property Group.

Fourie says that many people don't even realise this is an option. It can be risky for both parties, so it's important to fully understand what you are getting into before agreeing to anything, but there are situations in which it can be a viable solution.

The main attraction of rent-to-own is the fact that it eliminates the need for a large cash payment up-front. "These days, 100% home loans are rare and most prospective buyers will need to budget for a deposit as well as the normal transfer, bond and attorney fees. These upfront costs can be significant – and if the buyer does not have the cash on hand, the purchase simply can't go ahead."

With rent-to-own, however, the costs are spread over a much longer period of time, making the purchase more viable for a financially stable person with limited access to immediately available capital.

"The way it normally works is the buyer and seller will sign a lease agreement that allows the buyer to live in the home, like a typical tenant, but with the intention of purchasing the property at the end of the lease. The details vary, but generally, in return for first right of refusal, an additional sum is added to the month-

ly rental and acts as a down-payment or a deposit towards the future purchase. This sum is often forfeited if the tenant decides not to buy the property when the lease ends, but, depending on the agreement, can count towards the purchase price if the sale goes ahead."

Fourie stresses the importance of ensuring all these kinds of details are properly recorded on the rent-to-own agreement, as well as on the property's title deed where appropriate. This includes the tenant's pre-emptive right (or right of first refusal), the agreed sales price of the property, and the method with which any down payments or deposits will be handled in

Rent-to-own can also be structured as a type of instalment sale, with an instalment agreement and a separate lease agreement running concurrently. "The buyer could rent the property for a period, at an agreed rate, while paying off the purchase price in separate instalments. The laws governing this kind of arrangement are quite complicated, however, and there are very specific obligations placed on both parties." He recommends taking legal counsel from a conveyancing specialist before entering into an instalment sale. Ironically, in the case of sectional title rentals, rent-to-own can be an automatic and unintentional bonus for normal tenants.

**'The buyer could rent the property for a period, at an agreed rate, while paying off the purchase price in separate instalments. The laws governing this kind of arrangement are quite complicated, however, and there are very specific obligations placed on both parties.'**

the event that the tenant accepts – or declines – the sale.

"Without these stipulations in place, there is nothing to stop an unscrupulous owner from selling the property to someone else without first offering it to the tenant, or raising the sales price so much that the tenant no longer believes the purchase is a good investment," says Fourie. "Likewise, the owner should be protected against dishonest or unreliable purchasers who don't hold up their own end of the bargain."

"If the owner of a block of flats, for example, decides to sectionalise the building, the owner is required to offer first right of refusal to the tenants that currently occupy the units. The owner has to give the tenant a period of 90 days before the unit can be sold on the open market. Existing tenants who wish to purchase the property would be required to apply for finance, pay a deposit and legal fees etc. The first right of refusal offers the tenant an opportunity to live in a property before deciding whether it is worth buying." ■

# City sorts out billing crisis

**M**ashaba says that this follows an investigation that revealed Gauteng government departments owe the City of Joburg R259 million in outstanding rates.

The Executive Mayor told the Premier of Gauteng, David Makhura, that government has to pay R259 million within 30 days or enter an acceptable repayment agreement with the city, as any other defaulting resident is expected to do.

“Failure to do so will result in the city taking immediate action – where possible – cutting services to defaulting departments. We urge the defaulting departments to urgently comply within this timeframe so that such action will not be necessary,” says Mashaba.

He cites the lack of discipline by the provincial government as unacceptable. “How can ordinary residents be expected to pay their bills when government departments do not?”

Provincial departments failing to meet their rates payments include the Department of Infrastructure and Development – R161 million; the Department of Human Settlements – R39 million; and the Department of Health – R59 million.

“These provincial government departments budget for rates and taxes, and they have not paid their dues to the city for a long time. This debt owed to the city has clearly accumulated over time and it is disgraceful that the previous ANC-led administration allowed the ANC-run provincial government to get away

Johannesburg Executive Mayor, Herman Mashaba has announced that the Gauteng Provincial Government has 30 days to resolve R259 million owed to the city.



with this for so long. This amounts to hundreds of millions of rand worth of lost opportunities to improve service delivery. It is becoming clearer by the day that the previous administration in this city had it priorities wrong.”

Between April and June this year, money owed by residents grew by R2,8 billion and the provincial government has been a large contributor to this, says Mashaba.

The Mayor has called for a billing indaba to address the billing crisis that has plagued, developers, builders, end users for decades.

“Firstly, we need to produce an accurate indigent list to protect our poorest residents and ensure that they have access to free services. Currently we have people unable to pay for services. Some of whom are hav-

ing their homes seized because they cannot afford the services that their neighbours receive for free. Secondly, we need to introduce measures to improve revenue collection in our city. There are far too many people who can afford to pay but are currently failing to do so as a result of flaws in the billing system, outdated account details, or simply ignoring their bills.

Increasing revenue collection will allow us to use this money to improve infrastructure and service delivery, especially to the poor who need it most. Finally, we need to review current mechanisms and introduce new mechanisms for processing and resolving billing complaints.

We have to be a more responsive and caring government than our predecessors.” ■

## More than 17 000 invoices paid within 30 days

**M**inister in the Presidency responsible for Planning, Monitoring and Evaluation and Chairperson of the National Planning Commission, Jeff Radebe, said the department and National Treasury have devoted more resources to addressing the challenges of payment to suppliers. About 17 668 legitimate invoices to the value of R340 million have been paid to suppliers within the required 30 days, as at June 2016. This follows the establishment of a special unit in the Department of Planning, Monitoring and Evaluation (DPME) to tackle the

problem of non-payment of suppliers within the required 30 days.

Radebe said the department and National Treasury have also devoted more resources to the effort of addressing the challenges of payment of suppliers. “A walk-in-centre has been established at National Treasury’s offices to attend to supplier’s queries. Additionally, the department’s special unit and its partners are rolling out a targeted support programme to identify struggling departments to understand and address the challenges that lead to non-payment or late payments of suppliers,”

During these visits, Radebe said the entire value chain of payment of invoices is assessed, blockages are identified and departments are assisted with the implementation of improvements measures. “Going forward, we will like to see a situation, where accounting officers must charge those affected officers for financial misconduct in terms of the PFMA (Public Finance Management Act) so that we can deal with this matter effectively.” ■



# Special levy liability

When a sectional title unit is sold, the pro rata ordinary or general levies for the period remaining of the current financial year automatically becomes the responsibility of the new owner, according to the Sectional Titles Act.

However, there is no provision in the Act that caters for the change of ownership during a period of special levy raising and payment, and this lack of provision sometimes makes a situation such as this complicated, says Mandi Hanekom, Operations Manager of sectional title finance company Propell.

The Act simply says that the person who is the registered owner of a unit on the date that the trustees raise a special levy is liable to pay it. There could be complications though when special levies are paid off over a period of time in instalments and



during this time a unit changes hands.

According to Hanekom, the way to establish who is responsible for the payment is to ask who the registered owner was on the date that the trustees passed the resolution to raise a special levy.

If the seller was registered as owner then he/she is still responsible for the full payment of the special levy – even if the instalment payments continue after the person has left the scheme. Hanekom recommends that the outstanding amount of the special levy is included in the sale price and that this amount is then settled by the new owner.

“The option is available to the seller to pass the responsibility of the payment of the remainder of the special levy on to the buyer, but this would involve getting the body corporate, as well as the buyer, to

agree,” says Hanekom. If the unit is transferred before the resolution is passed to raise a special levy the new owner can will be responsible. Even although the new owner was not aware or involved in any discussions about the special levy being raised.

In some instances, a loan to cover the full amount of the special project, instead of raising a special levy, is preferred. Hanekom concludes, “A lump sum loan is paid off via a slight increase in normal levies each month and this does reduce the complications of raising large sums of money from the owners of units. This also makes it easier for those wanting to sell, knowing that they won’t be fully responsible for the special levy, nor will the potential buyer be ‘put off’ by the prospect of a large lump sum having to be paid towards a special levy a win-win solution for all.” ■

## Save costs and attract tenants

Developers and contractors need to consider tenants’ needs and connectivity is one of the most desirable aspects in ensuring that the apartment, townhouse, house or development is lettable.

DFA Open Access Network CEO, Thinus Mulder, explains that optic cable networks improve data and cell phone communications for tenants. The company was established nine years ago and today DFA employees 700 people with a network investment of R7 billion covering 9 500 km from small cities and towns around South Africa.

The open access pioneer built and maintains all the countries major cellular networks. Mulder says that in new greenfields developments

installing all the utilities accounts for 70% of labour costs. The rampant theft of copper and wire, apart from hitting the bottom line, can take weeks or months to replace. Fibre optic is cheap to supply and fibre achieves 150 million cell calls simultaneously – fibre is cheap to manufacture, there is no energy cost to run and offers a high quality signal. The benefits includes no electromagnetic interference, non-flammable, no sparking, high security and quality signal. There is no network congestion or weather interference.

With 10% increase in high speed internet connections, economic growth (Gross Domestic Product) increases by 1,3% according to the World Bank. Mulder says that fibre is like the oil of the 21<sup>st</sup> century.



To improve the lives of residents in a development all it takes is a Wi-Fi aerial, container to aggregate traffic and link to CCTV, geyser control, no load shedding, Showmax costs R100 per month using fibre optics.

Optical fibre can connect all the essential services, sanitation, water, electricity and telecommunications.

There is no doubt that connectivity is a marketing and selling tool. ■

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# THE COST OF A RATINGS DOWNGRADE

With slow growth economic anticipated for 2016, Weimar says that many firms are retrenching to reduce costs and stay afloat. Fixed investment activity has been negative for the past three quarters and this has contributed to broad-based restructuring and 472 000 job losses. Income growth has stagnated and household debt is currently 76%.

The economy has fared better in the second quarter growing at 3,3%, but only 0.6% over the year. Protracted pressure on companies have hurt confidence and reduced the appetite to expand capacity. Capital expenditure by major role players in the government, public and private sector is also shrinking.

Nedbank's straight-talking, feisty, economist says that interest rates increases of 2% in two years is mild stuff. "The Reserve Bank is being gentle. You don't need big increases to feel the impact and economic strain," says Weimar.

The mining sector is bleeding losses as wage growth exceeds productivity growth. Another factor contributing to the country's woes is the giant Medupi power station. Electricity costs have escalated over 300% since 2008. Medupi is fast becoming a world record for the longest construction time and it is still not finished, eight years later.

"The lack of general economic infrastructure is not enough to fuel growth – the International Monetary Fund shows that existing power is the best growth for domestic and global conditions of between 1,3% to 1,5% and unless we can finish power

Nedbank Corporate Investment Banking Senior Economist, Nicky Weimar, sheds light on the South Africa economy and what to expect if international rating agencies downgrade the country.

stations quickly we can't grow faster. There is also not enough clarity on the country's economic policy going forward. Investors raising capital need to know that the policy landscape will not change."

With government deficits climbing to 50% of Gross Domestic Product – three major ratings agencies have given us sovereign risk downgrades with S&P and Fitch one notch above junk status.

Pulling no punches, Weimar says, "Government has to get its act together – tax is not growing – government needs to cut back on the size of the civil services and hierarchies. Government cannot stimulate the economy. We have no fiscal ammunition left and government has been a drain on the economy."

State paralysis, lack of leadership and not speaking with one voice, has seen Independent Chapter 9 institutions trying to keep politicians accountable. "Labour remains a contentious issue but the root of the problem is the central bargaining system," says Weimar. Adding that there is a perception the President is at the heart of the problem. In government there are two camps, all the President's people who receive patronage and use government resources to benefit a few politically connected people – and the opposite camp. She questions why government would want to fiddle with the highly



A A A	B B -	C C -
Baa3	A A -	BBB-
C C C	<del>DOWN GRADE</del>	B B +
B B B	Baa1	default

regulated banking sector, which is on a par with international best practices.

The Minister of Finance, Pravin Gordhan, needs to show progress and curtail government spending, as well as to illustrate policy certainty on a number of issues. This includes negative land holdings, expropriation, minerals and resources, the private security bill, and the investor rights bill that does the opposite. This legislation is being relooked at and Gordhan has to show that bankrupt parastatals are making progress. "The market will not accept interference and the removal of Pravin – this reduces the power of Treasury to reduce government spending."

The dominant factor driving the price of the rand is based on how the global market perceives risk in the emerging market and how foreigners perceive risk and return on investments. Nedbank's economic forecast anticipates GDP growth of 0,2% in 2016, 1% in 2017 and 1,5% in 2018.

A downgrade has serious implications for the country – should two ratings agencies downgrade the country then investments worth R600 billion will leave the country and then the situation will become volatile. ■





# TENANT BEHAVIOUR

Michelle Dickens, Managing Director of TPN credit bureau shared insights on the South African Property Rental Market and rental payment profiles.



The database statistics are based on one million tenants.

This gives a clear picture on tenant behaviour, age, defaults and how tenants pay their rent, defaults etc.

Millennial tenants are long terms tenants born between 1980 and 1985. Millennials rent for longer than any previous generation. Almost 80% of tenants rent for less than R7 000 per month, this is the sweet spot for developers. Tenants start moving out of rental accommodation at the age 30. Research shows that most females divorce at the age of 39 and for men at 43.

Rental vacancies nationally are approximately 5,07%; in the under R3 000 per month the vacancy rate is 4,75%; in the R3 000 to R7 000 market it drops to 4,31%; the R7 000 to R12 000 market the vacancy rate is 5,55%; and rentals over R12 000 per month the vacancy rate is highest at 12%.

Demand outstrips supply in the Western Cape demand is severely constrained, demand sits at 92% and supply only 37%. Tenant behaviour shows that most tenants are in good standing and paying rent is a priority. Rental escalations are heaviest in the Western Cape at 12,13% compared to 3,23% in Gauteng and 3,59% in KwaZulu-Natal.

Dickens says, "Rental payments are the first ones that tenants make in the Western Cape because there are so many people waiting for affordable accommodation."

Payment profiles show that rental payment behaviour differs between provinces with the Western Cape showing that 78,22% pay on time; compared to 60,21% in the Free State.

In Gauteng 7,55% of tenants pay during the grace period compared to 3,77% in the Western Cape. In KwaZulu-Natal 13,99% of tenants paid late with the Western Cape recording only 7,53%. The Free State recorded the highest number of tenants making partial payments at 12,25% and the best provincial performer was the Northern Cape at 7,52%. Provinces where tenants did not pay rent is led by the Free State at 8,67% compared to the Western Cape at 2,81%. Finally the best performing province was the Western Cape showing 89,52% of tenants are in good standing compared

buildings in the inner city retrofitting is expensive and we find some utilities are inordinately high and divided across the units created conflict with tenants. It is much easier to recover 90% of utility consumption."

Ingrid Van Biljon, Principal Owner of Zeiri Properties and CEO of International Housing Solutions Property Management says, "Tenants are picky and it is a highly competitive market. Tenants will move if they can save R200 per month. Where there is limited space available such as the CBD they will remain. But on new developments tenants have a much wider choice and can move around. The value adds such as fitted kitchens, cupboards, vanity and mirror, and security play a large role in terms of rentals and what the landlord or investor offers."

Grant Harris, International Housing Solutions Property Management Managing Director, points out that high rise versus suburban – credit risk is lower in the inner city and control access with biometric single point of access. The battle on the townhouse side is that the collection procedure is far more difficult.

Rob Wesselo, Managing Director of International Housing Solutions concludes, "Our society is getting used to renting, with the age demographics shifting and tenants renting for longer, they don't have to buy and it may not always be the right decision. Rentals in affordable housing is low risk and city properties have 1% vacancies and arrears. The product is becoming more vanilla and we are excited to see where this part of the market takes us." ■

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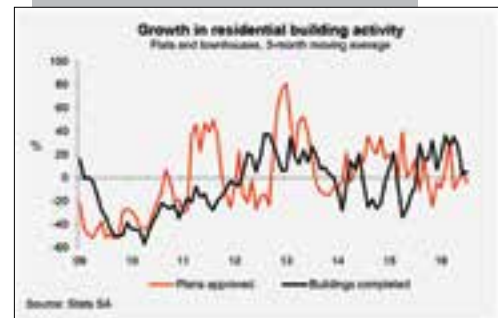
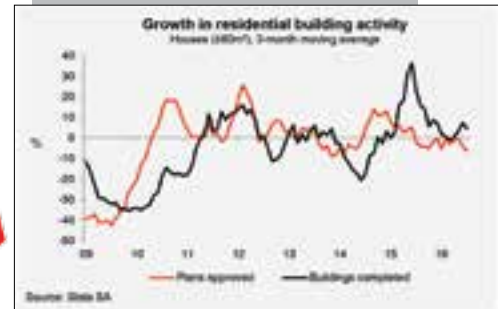
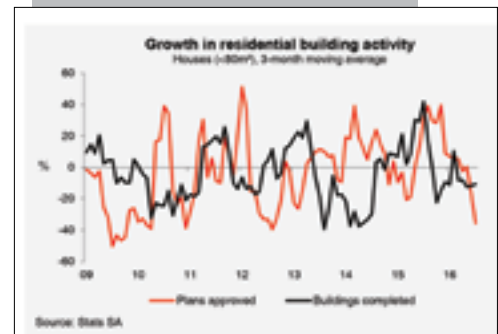
to 78,98% of tenants in the Free State.

Dickens says that the worst payers are those rentals over R25 000 per month. She concludes that the best tenant behaviour is in the R3 000 to R7 000 market, with low escalations and low vacancies. But the R7 000 to R12 000 category is the one to watch in the future.

Managing Director of Trafalgar group of Properties, Andrew Schafer says that arrears in some portfolios showed less than half a percent arrears because of shortage of accommodation. Schafer says, "In older

# DECLINING TREND IN RESIDENTIAL BUILDING

Conditions in the South African market for new housing seem to be deteriorating, based on trends in the first seven months of 2016.



According to Jacques du Toit Property Analyst Absa Home Loans says, “Levels of building activity have in fact contracted markedly in all segments of housing in both the planning and construction phases in July this year compared with a year ago.”

These trends are based on data published by Statistics South Africa in respect of building activity related to private sector-financed. The number of new housing units for which building plans were approved contracted by 8,4% year-on-year (y/y), or 2 947 units, to 32 197 units in the first seven months of the year.

The contraction was largely evident in the two segments of houses, which showed a combined contraction of 13,5% y/y, or 3 083 units, to 19 826 units over the 7-month period. The segment of apartments and townhouses, however, recorded subdued growth of 1,1% y/y over the same period.

Du Toit points out that the number of new housing units reported as being completed increased by 2,6% y/y in the period January to July, with the segment for houses smaller than 80 m<sup>2</sup> contracting and the segment for flats and townhouses still increasing by almost 24% y/y over this period. With negligible growth in

respect of the planning of flats and townhouses so far this year, the construction phase is showing diminishing year-on-year growth in the seven months up to July.

The real value of plans approved for new residential buildings of R28,42 billion showed a decline of 1,9% y/y in the period of January

‘Against the background, household finances and building, consumer confidence and levels of residential building activity are expected to remain largely subdued and may deteriorate further towards the year of the year and in 2017.’

to July, with the real value of new residential buildings reported as completed standing at R17,29 billion a 1,3% y/y decline over this period. These real values are calculated at constant 2015 prices.

Building alterations and additions to existing houses contracted by

6,4% y/y in the first seven months. The contraction on maintenance shows the increased financial pressure on homeowners.

The average cost of new housing built increased by 7,4% y/y to an average of R6 451 per m<sup>2</sup> in the first seven months of the year compared with R6 009 per m<sup>2</sup> in the same period last year. The average building cost and the year-on-year percentage change per m<sup>2</sup> between January to July:

- Houses of under 80 m<sup>2</sup> R4 240 per m<sup>2</sup> cost, increased by 10,5% y/y
- Houses of over 80 m<sup>2</sup> R6 532 per m<sup>2</sup>, rose by 3,8% y/y
- Apartments and townhouses R7 466 per m<sup>2</sup>, an increase of 9,3% y/y

“Against the background, household finances and building, consumer confidence and levels of residential building activity are expected to remain largely subdued and may deteriorate further towards the year of the year and in 2017,” concludes du Toit. ■



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## New EPWP long-term employment initiative

The Expanded Public Works Programme (EPWP) initiative will provide unemployed South Africa the opportunity to earn income while acquiring skills that could make them more employable.

The Engineering and Asset Management Branch of the City's Water and Sanitation Department has been chosen to implement the 18-month project. The R8,9 million project will train 110 semi-skilled workers, who will be partnered with skilled, qualified artisans.

The candidates are recruited from the City's apprenticeship database. In some instances these are candidates who require practical application of their theoretical training, or currently registered on the job seeker database.

"This is a great project because apart from the all-important job creation aspect, it will help the City build relationships with FET colleges and other tertiary institutions. This also helps to address the desperate need for practical, on-the-job training for graduates who often struggle to find work because they do not have the practical skills to back up their academic qualifications," said the City's Mayoral Committee Member for Social Development and Early Childhood Development, Suzette Little.

Candidates will be trained in first-aid (Level 1), health and safety awareness, as well as the use of power-tools. The candidates will undergo quarterly assessments to measure performance and to

The City of Cape Town's pilot Expanded Public Works Programme aims to take the programme a step further and offer job seekers and unemployed graduates a better chance of securing long-term employment.



determine whether remedial action is necessary in order to assist them.

"We are so excited about this project because it means that we are able to increase productivity and efficiency by partnering EPWP workers with qualified artisans. It also opens up new avenues of recruitment for the Utility Services Directorate," said the City's Mayoral Committee Member for Utility Services, Ernest Sonnenberg.

The City's Utility Services Directorate, along with Transport for

Cape Town (TCT) are two of the biggest 'employers', accounting for just over 50% of all work opportunities..

The City's EPWP implementation has received a number of accolades at national level in recent years. In the 2015/16 financial year, the accolades included: the National EPWP KAMOSO 2015 Awards: Best Municipality in the Social Sector and the Woman in Construction Award: Most Innovative Woman Training Programme Award. ■

## Gauteng to sell government properties

Gauteng Premier David Makhura says that the provincial government will sell all the properties it owns, including the Premier's official residence.

The Premier made this announcement while responding to questions at the Gauteng Provincial Legislature recently.

In March, he made a commitment to the legislature that the future of the official residence would be considered once the Department of Infrastructure Development had completed an audit of all assets, including non-core assets belonging to the Gauteng Provincial Government.

"The asset register and valuation of all government fixed property has

now been completed. The majority of these properties are occupied by public servants. Thirty-one properties will be disposed at the first online auction will take place towards the end of October 2016."

Makhura said he was confident that this decision will not only save the provincial government money from maintenance but it will help raise additional resources to fund the provincial government's programme of Transformation, Modernisation and Re-industrialisation (TMR) priorities such as student bursaries and the youth employment programme, Tshepo 500 000.TMR

"We will only keep the property portfolio and land assets which add

value to service delivery, infrastructure development and our overall agenda TMR," said Makhura.

"Ekurhuleni Metropolitan Municipality prioritised Winnie Mandela Informal Settlement for the provision of electricity as part of creating liveable settlements under the Informal Settlement Re-blocking Programme."

Makhura added that electrification of Informal Settlement is a priority programme for Gauteng municipalities. The Departments of Human Settlements and Cooperative Governance and Traditional Affairs (Cogta) are providing the necessary support to national government departments and state-owned enterprises. ■

NATIONAL HOME BUILDERS

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REGISTRATION COUNCIL

## ASSURING QUALITY HOMES



The residential market received a shake-up at the recent inaugural 2016 National Human Settlements Conference held in Port Elizabeth.

The event promoted cutting edge technologies and a stellar series of presentations from the National Home Builders Registration Council (NHBC).



# A PARADIGM SHIFT

Minister of Human Settlements, Lindiwe Sisulu opened the conference at the Boardwalk Conference Centre in Port Elizabeth. The event was due to take place at the Nelson Mandela Metropolitan University but was swiftly shifted as students around the country mobilised and continued their plight for free education.

Sisulu says that the recent higher education imbizo has emerged with proposals for a solution and solicited the private sector to find a lasting solution.

She says, “These events have impressed upon us the importance of access to higher education opportunities. As the debate rages on, we would like to borrow from our own experience, some of the concepts that we in human settlements have adopted in order to deal with our housing matters.

These include: a qualifying criteria; progressive realisation of a goal; and respect for the rights of others. It is necessary for me to contextualise this conference against the backdrop of education, because we are gathered

here in the pursuit of knowledge. The determination to professionalise this sector was sown at about the time we ourselves were busy with reconceptualising our own position in 2004, shifting our paradigm from housing to integrated settlements. We struggled to find the academic support to take us to where we needed to be. But as we forged ahead, we found that it was necessary that we create this new discipline if we are to sustain ourselves and grow.”

**The aim is to generate pragmatic solutions to challenges facing human settlements in both urban and rural settings.**

Sisulu adds that with government funding several universities came on board to offer various courses and the Nelson Mandel Metropolitan University has produced a four year curriculum in the field of Human Settlement Studies. The university will also host the Chair for Human Settlements in the discipline of Education.

“We sold this new idea to several universities and I will never know what was more attractive: the idea itself or the money that it brought with it. Whatever it was, we are the winners in these partnerships. We will create and strengthen our professional crop of staff in the housing sector.”

Other leading institutions such as the University of the Witwatersrand is offering a course that will lead to a Master of Built Environment degree. The Human Settlement Post Graduate Certificate at Wits is accredited at NQF Level 7. The University of South Africa is offering a degree of Bachelor of Human Settlement in Public Administration. This course has the capacity to train about 1 000 officials who started in January 2016.

The global crisis on housing continues with the issue of shortage of housing, especially affordable housing. The recent election of the Mayor of London was hotly contested around the housing crisis. In South Africa the enormity of the problem is still ahead of us. We need well thought through solutions, scientifically tested and executed by

competent people,” says Sisulu.

Adding, “Together with the CSIR and other departments we can find solutions to problems of escalating costs of building and using traditional methods. We can test the viability of our catalytic projects methods, conduct studies of new methods of dealing with old problems and urban planning. The list of possibilities is endless.”

This inaugural 2016 National Human Settlements Conference represents another step forward in our journey to professionalise and elevate the human settlements research, education and practice. The theme is an interdisciplinary effort for transformation towards sustainable and environmentally-friendly cities and neighbourhoods. It straddles across the social, economic, built and natural environments, calling for immediate action by all role players in providing tangible solutions to pressing questions that face all government spheres, cities and neighbourhoods.

The conference will explore research capacity opportunities that remain untapped. These include the local and international resources for augmenting institutional research capacity that requires collaboration across and between sectors and countries.

The aim is to generate pragmatic solutions to challenges facing human settlements in both urban and rural settings. Demonstrate best practice science, technology and building innovations to expedite housing delivery and sustainable human settlements development. Consolidate the key priority research areas for the human settlements sector that should be pursued by all the role-players. Foster strategic partnerships in pursuit of sustainable human settlements development across all scale.

It is intended to be a catalyst in the realisation of the country’s ambitious vision of the development of a capable state. In this respect, the capacity of the state will require to be enhanced at individual, institutional and intra organisational level. This is central to the efficient functioning of the state.

There is a need to radically scale up and augment the existing capacity of the sector. Much of the capacity challenges in South Africa relate to historical under investment in education, the lasting impact this has had on the education, skills pipeline and economic landscape. The implica-

tions of the current substantial shortage of skilled professionals in the built environment and human settlements sector will severely impede South Africa’s ability to plan and deliver infrastructure, which in turn has a constraining influence on economic performance.

She notes the challenges how do we strengthen capacity at a sector wide level? How are these initiatives to be implemented? What role can universities play? Historically and currently universities play a vital role in a country’s development. Universities are key institutions or engines of skills, capacity and knowledge generation. The change from Housing to Human Settlements demands a systemic response by all actors involved in the sector. The current state of play in South Africa is to ensure processes are in place to support professionalisation and that these culminate in the passing of legislation governing and regulating human settlements practice in the country.

Establishing professional, globally benchmarked, standards have the potential to introduce uniformity in business practices and with it increased investor confidence. This will require the training of professionals to these standards across the range of built environment professions.

She encourages industry stakeholders and private sector to work with academic institutions to ensure students receive mentorship or internship opportunities.

Saying that the Department remains committed to facilitating a framework to create opportunities, incentives and rewards for those professionals who attain pre-defined professional standards. “Not only will this raise and unify standards, it will increase prestige, mobility and status of human settlements practitioners. This will in turn have the effect of boosting consumer and investor confidence in the state and those operating in the human settlements sector.”

A crucial aspect of any process of meaningful social and economic change is the collecting of data, research methods, techniques of data analysis and dissemination, including audience of peers for scientific



Lindiwe Sisulu

review and critique.

The Department of Human Settlements’ capacity enhancement strategy includes: Focused multi-disciplinary education in the area of human settlements education; Development of a trans disciplinary Research Agenda which responds with an evidence based approach to challenges facing the sector; Development of a menu of short courses to support



Continued Professional Development of especially mid-career professionals; and Codification and development of the body of knowledge relevant to Human Settlements Development and Management. Sisulu concludes: “This conference is responding in a practical and meaningful way to the current need for further research into sustainable human settlements development and management. This approach provides opportunities to a number of academic departments and disciplines to contribute to the creation of knowledge.” ■



# FROM HOUSING TO HUMAN SETTLEMENTS

## implications of a policy shift

Professor Sipho Seepe recently addressed housing stakeholders at the inaugural Department of Human Settlements Conference in Port Elizabeth.

In a bid to address spatial legacy and the country's apartheid past, Professor Seepe cites examples of the goals of government's 1994 goals – 'breaking down apartheid geography through land reform, more compact cities and decent public transport. And the development of industries and services that use local resources and meet local needs'.

There are no quick fixes, he informed stakeholders and media. "Given the resources and required transformation it will invariably be incremental."

The conceptual shift from RDP houses to Breaking New Group BNG was to use housing as an instrument for the development of sustainable human settlements, in support of spatial restructuring. The uniform and monotonous RDP houses on the urban edge without the necessary social facilities and supportive infrastructure needed to change for more diverse housing programmes and offer a variety of products. Better located mixed income and mixed use housing projects, social and rental housing and to revitalise depressed property markets at the lower end of the rental market.

Government's roll out of Catalytic Projects will allow things to be done differently, faster and smarter.

Core issues will be addressed such as apartheid spatial patterns.



Establishing sustainable human settlements that demonstrate social, economic and spatial integration.

Ensuring value for money through exploiting economies of scale

Ensuring more diverse forms of housing to respond to various household needs.

Ensuring economic spin offs including creating more job opportunities.

Professor Seepe says that the remaining challenges include:

State subsidised houses are not being integrated into the property market.

Delay in registration and issuing of title deeds.

The growing Gap market for households that are above the fully subsidised income band but not enough to qualify for bonds.

Lack of incentives for public and private investors to invest in rental housing.

Government lacks the operational capacity to manage rental stock

Despite improvements in state subsidised housing, projects are not

achieving living areas with different typologies.

The focus remains on housing rather than developing quality environments supported by the necessary social and environmental services.

The National Upgrading Support Programme to upgrade informal settlements has made slow progress. This is due to the rigid local regulations and ambivalent attitude towards informal settlements in sectors of government

There is need for a national discussion, says Professor Seepe, on the future funding of housing in South Africa. And, on the respective roles of the state, private sector and individual households in providing housing and creating integrated and sustainable human settlements.

He concludes, "The system of state-provided housing has benefited many poor households but may have undermined the incentive for people to upgrade their own housing circumstances. This may have increased a dependency on the state for the supply of private goods." ■





## The Zanemvula Mega project

This forms part of the informal Settlement Upgrading and Human Settlement Project in the Nelson Mandela Bay Municipality.

The project consists mainly of the replanning, upgrading and improvement of Soweto-on-Sea and Veeplaas.

The greenfields projects of Chatty Extensions and Joe Slovo West will yield 20 000 fully subsidised housing units over a 15 year period. To date 8 071 units have been delivered across the various projects since 2006.

The project is being facilitated by the National Department of Human Settlements, the Provincial Department of Human Settlements has made funds available, approved the

The Housing Development Agency has been appointed as the Implementing Agent for the Eastern Cape Department of Human Settlements Zanemvula Mega Project.

project, provided an inspectorate, monitoring the progress and enrolling the projects with NHBRC.

The Nelson Mandela Bay Municipality as the land owner is responsible for identifying town and precinct planning, beneficiary identification, bulk infrastructure, funding and amenities.

The Housing Development Agency is the implementing agent and project manager.

Chatty 1060 Human Settlement project is a component of the Zanemvula Mega Project and

consists of 1 060 residential units. It is situated 25 km from the Port Elizabeth CBD, between Uitenhage and Port Elizabeth. The project will house 4 250 people who were previously residing in the floodplains of Soweto-on-Sea and Veeplaas.

The 40 m<sup>2</sup> units comprise of two bedrooms, open lounge and kitchen, plastered and painted internally and externally, gutters and rainwater collector. The project has incorporated eight SMME contractors and allocated contracts to five women and four youth contractors. ■

## The aim of African cities

Dr Taibat Lawanson, the Department of Urban and Regional Planning, University of Lagos, Nigeria shared his presentation, 'Towards and inclusive African Urban Development Trajectory' to create the Africa we want...and aspire to.

Addressing delegates at the inaugural National Department of Human Settlements Conference, Lawanson honed in on the United Nations Habitat Urban Agenda the vision is of cities for all, referring to the equal use and enjoyment of cities and human settlements, seeking to promote inclusivity and ensure that all inhabitants, of present and future generations, without discrimination

of any kind, are able to inhabit and produce safe, healthy, accessible, affordable, resilient sustainable cities and human settlements, to foster prosperity and quality of life for all.

Lawanson says that African cities should be centres of dignity, opportunity and innovation, wellbeing and prosperity. He says that people want a hand up and not a hand out.

He addresses how we can move African Human Settlements toward this preferred vision. Lawanson suggests: Recognise and harness local customs and processes for development such as communities of trust, social networks, Ubuntu etc. Empower local residents with skills and opportunities to better their lives and environ-

ments. Strengthen local knowledge institutions, revise curricular and reform praxis to reflect contemporary realities and problem solving mindsets. Co-production of urban knowledge with citizen participation at all levels of urban decision making and implementation. Simplify bureaucratic processes regarding land and planning administration. Empower local authorities to fulfill their mandates. Encourage the growth of local enterprises, innovative practices and the creative industry. Develop and integrated planning and sustainable development framework that localises Agenda 2063, SDGs, Habitat Agenda and African Urban Agenda to actionable goals and timelines. ■



Abbey Chikane

Acting CEO of the National Home Builders Registration Council, Abbey Chikane says that it is important that we relook at the housing policy and improve on it. He addressed media, delegates and industry stakeholders at the recent inaugural 2016 National Human Settlements Conference.



# WHAT BR WILL NOT TAKE

Chikane says, “The South African population dynamics require that we rapidly implement innovative building technologies. It has been almost five years since the launch of the Legacy Building project using innovative building systems and there is still market and consumer resistance amongst low cost housing householders.”

The project aimed to explore the use of innovative building technologies (IBTs) in enabling the development of sustainable human settlements as well as addressing the backlog in housing delivery.

He adds, “South African construction firms by and large have shown resistance to building houses using innovative building technologies. There is clearly more that needs to be done to educate consumers in order to drive demand of IBT.

An IBT house looks like any other houses but its building materials are typically thin and hollow compared to conventional materials although no less durable”

While the issues stem largely from the perception that the materials

and systems with which they are built are not as sturdy as the trusted, hundreds-of-years-old bricks and mortar, this has caused stakeholders in the housing sector to tread carefully in employing these technologies on a wide scale.

As much as the human need for shelter is one of the most fundamental of human needs, these needs

*As much as the human need for shelter is one of the most fundamental of human needs, these needs – and the needs of our societies as a whole are not static.*

and the needs of our societies as a whole are not static. Chikane points out, “While the world around us has changed significantly over the past few centuries, building materials have remained relatively the same. Innovations in housing have the

potential to stretch the use of a house far beyond merely providing shelter and create housing that can adapt to its physical and social environments.”

He cites, “Changing energy demands and urban migrations patterns showing almost 80% of our population will live in cities. This makes it necessary to produce housing at a faster rate. The varying and changing climatic conditions are all reasons why we must continue to make innovative building technologies a priority for the housing sector.”

Government has set a target that will see at least 60% of all houses constructed by 2017 built using IBT systems. The National Building Registrations Council is the agency of government tasked with driving the adoption of innovative building technologies.

As it is the case with many innovations, early adopters of new technologies are always a small percentage of total population. The new technology needs to prove itself first before it can enjoy broader acceptance, but when one looks at the benefits of technology – which are all around us – there



# UGHT US HERE

# US THERE

is no doubt as to the improvements that innovation is able to bring to enhance our quality of life.

The target set by government to dramatically increase the number of houses constructed using IBTs has experienced some challenges along the way. However, critical success factors have been identified and they will include amongst others:

Buy-in from current and would-be homeowners. One of the solutions that have been preferred for this includes building community and public buildings which would display the reliability of these building systems over a period of time. Acceptance of IBT houses — however it is achieved — is key to achieving government's target.

Training and skilling of the housing sector: from construction companies to housing inspectors. There are already efforts being made to ensure that these houses are constructed to the required standard. Skilling across the entire value chain of housing delivery will seal any gaps and eliminate the possibility of poor quality construction.



Wide consultation with all players in the construction of the IBT houses and buildings - from city planners and municipalities to architects and designers, constructors, as well as quality assurers. This will ensure cohesion and knowledge sharing.

Ensuring that the IBT construction process creates jobs and other economic opportunities is key to its successful adoption. The process should also allow for the transfer of skills that will improve the future prospects of the individuals, enterprise and

Scommunities working on the project. Large-scale adoption of innovative building technologies – the more these systems are used, the more we will see economies of scale come into play resulting in reduced costs. As their popularity and acceptance grows so also will the demand.

Concise and to the point Chikane says, "A house denotes comfort, security, warmth, safety and security. A house also brings a sense of pride and ownership fulfils physical, social and psychological needs." ■

# ASSESSING 'AS BUILT'



Dr Jeffrey Mahachi

Innovation pioneer and National Home Building Registration Council technical guru, Dr Jeffrey Mahachi told delegates at the 2016 National Human Settlements Conference that the housing sector in South Africa is facing many challenges to meet the ever growing demands of the poor.

**T**here is a need for the country to find more sustainable and innovative ways to solving many of the housing challenges.

The National Home Builders Registration Council (NHBRC) has been tasked to promote the uptake of Innovative Building Technologies (IBT) and find ways to enhance performance issues, especially if certified systems are used for large scale projects.

Industry doyenne, Mahachi says, "Due to a shortage of technical skills at the levels where housing projects are procured and managed, more guidance is required to ensure good quality houses are rolled out. However, it is not known how the 'as-built'

IBT systems perform in terms of its certification, of which the theoretical evaluation is accepted to be enough verification on the outcome of the end product."

An assessment tool was developed that evaluates the physical condition of constructed IBT homes. This study aims to determine the condition of IBT houses through establishing the latent defects any time after the construction process.

The presentation mainly focusses on the results of a starting phase of inspections and pilots the tool for a number of IBT systems in the country. Using descriptive statistics one can measure the dispersion around the central tendency of the inspected IBT houses.

The results indicated a median and mean of the overall performance in terms of defects that is acceptable, but provides a variance or dispersion that is negatively skewed and can be a cause for concern.

South African housing shortage continues to grow amid delivery of homes still more focused on the quantity and less on the quality. Government and human settlements' stakeholders have committed to deliver 1,5 million housing opportunities by 2019.

A few recent initiatives include the enhancement of norms and standards that took effect on 1 April 2014 to include energy efficiency interventions. Human Settlements aims to encourage the use of innovative building systems produced locally to contain costs.

Sustainability has been entrenched in South Africa's policies and legislation since the country's emergence as a democratic state in 1994. One means of regulating innovation in building technology in terms of the Housing Consumers Protection



# IBTs

‘Human Settlements aims to encourage the use of innovative building systems produced locally to contain costs.’

Measures Act is checking for an Agrément Certificate or rational design assessment. The Agrément Certificate is generally accepted as the best known way of ensuring relevant attributes have been complied with due to its broad assessment.

Certification implies that attributes of performance (in terms of the National Building Regulation), habitability and the Quality Management System have been assessed.

The performance parameters include fitness for purpose of materials, behaviour in fire, structural performance, water penetration and rising damp, thermal performance and energy usage, condensation, acoustics durability and quality management. In this study the results of the inspections of IBT as-built houses and compared to the theoretical expectations of the Agrément certification.

The Department of Human Settlements is still sceptical on the implementation of IBT houses as they have to date not been well-accepted by relevant beneficiaries.

The issues raised by Human Settlement’s department are due to structural problems, possible high construction costs, poor accessibility to the supplier, lack of proper maintenance plans, and lack of inspection skills.

Besides these factors, it needs to be highlighted that innovation is slower in housing than in other industries. Two measures commonly used to support this argument are the industry’s small investments in research and development and the long adoption/diffusion times for new technologies.

Other challenges to innovation frequently cited by the industry include the industry’s complex and fragmented structure; its highly competitive and risky nature; the difficulty in accessing and sharing information; local variation in regulatory



Continued ►►►

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requirements and their implementation; the low levels of skill, training, and investment throughout much of the industry and its workforce; and the difficulty of protecting innovations and appropriating their financial returns.

Government aims to use IBTs to construct 60% of new social infrastructure projects by 2017. One of the NHBRC projects is to develop a dynamic IBT database. This database will assist provincial departments in selecting better quality IBTs from a performance perspective. This method does not disregard the need for other procurement interventions such as choosing more suitable IBTs for specific climatic zones (not part of this study). However, a method is followed to evaluate IBT homes already built to determine a score on general performance using a South African Condition Assessment Tool (SACAT). As part of descriptive statistics the study describes the results of how 'as-built' IBT homes perform and then compared with the expected results of theoretical analysis.

A method of determining how 'as-built' IBT homes are performing is to assess the extent of defects using a tool that inspectors can use. Defects are defined as being deficiencies in design, material, construction or subsurface. A defect can be either patent or latent. Patent defects can be clearly recognised during inspection, the construction period of the project's defects liability period. Latent defects appear over time, usually once the building has been occupied. Building defects can be a result of design errors by professionals, a manufacturing flaw, defective materials, improper use of installation of materials, not conforming to the design by the contractor, or a combination.

## Methodology and data collection

A condition assessment tool for small and large scale housing projects was developed to objectively assess the technical quality of the housing product. This was achieved through visual inspection at the post-construction phase of a housing project. The scoring was according to critical defects (symptoms) identified comprising of the defect importance, intensity and extent. This assessment will allow for choosing from those IBT systems

on the ground that qualified (with a qualifying score) to be placed on an IBT database. It needs to be highlighted that it was not the intention of the tool to ascertain the exact reason for the deficiencies for this phase.

With the investigation of the different tool types one third of the housing associations use condition rating to record the technical status of the building components. But condition assessments vary for the hierarchical classification of building components, classified defects and the use of condition parameters. Several condition assessment methods lead to variable condition rating results, while examining the same defects.

Of interest is a condition assessment tool standardised by the Dutch Government Building Agency in 2002, which most building inspectors will

'A defect can be either patent or latent. Patent defects can be clearly recognised during inspection, the construction period of the project's defects liability period.'

be able to apply in the case of innovative building technologies. The aim was an objective assessment of the technical quality to provide property managers with unambiguous reliable information about the technical status based on assessed defects. This standard tool was aimed at property owners, tenants, consultants, contractors and inspectors of control bodies. Application of the standard can include the following: Visualisation; Maintenance planning; Prioritising of maintenance budgets; Control of physical conditions; and Communication about the actual assessed physical condition and desirable condition.

Condition assessments should be performed visually by trained inspectors using some small equipment and measuring tools. An inspector will pass through the following condition parameters: importance of defects, intensity of defects and extent of defect. The extent of the intensity of a defect combined with the importance of the defect lead to a condition rating, probably with a defect score.

The main components of the study's assessment tool covered the sub-structure, superstructure, roof, services and finishes concerned with health, safety and the environment.





In total, two rounds of inspections were carried out on unoccupied IBT show houses at Eric Molobi Housing Innovation Hub before the tool was piloted on a list of IBT houses in provinces in which beneficiaries lived.

Scoring differed from the literature in that the extent and intensity were five-point scales with one being critical and five or six minor. The importance of the elements (component type) was weighted in terms of the defects that can directly harm the function of the building component.

Once all the elements were evaluated the scores were carried over to be weighted again in terms of the key components that are a high risk to the NHBC mandate, which focuses on the structural strength and stability.

The overall score was indicated as a percentage and categorised in grades of A, B and C. A good score would preferably be accepted as an A Grade.

The theoretical expectation would be that IBT homes with certification should be able to attain these scores.

**Table 1 – Performance grades**

Grades	Percentages
A	≥81%
B	61% - 80%
C	≤ 60%

Those scores that were on the borderline were given an additional opportunity to qualify by adding percentages of between 1% and 5% to the total end score. This resorted to 1% extra for a house 0-5 years old; 2% extra for house 6-10 years old; 3% extra for a house 11-15 years old and 5% extra for a house 16-20 years old.

The decision to add a score related to age depended on the superstructure's wall element score. If the wall element score was 75% or more the system would qualify for an additional percentage to possibly get a qualifying score. The older the system was, of which the superstructure was still functioning well, the higher the additional score.

The tool was piloted through preliminary inspections and its uniform application. The purpose of the testing of the tool was to determine the outcome of the scores inspected by five inspectors in terms of the degree of convergence of the scores to preferably be within at least 10 points and whether the tool reflected the

severity of the defect in terms of health, safety and the environment.

The tool was calibrated for the first two rounds by means of changing the weighting of the components. In this context the structural safety was weighted higher than the other components. The tool however, did not exclude the minimum energy efficiency requirements, which was included in terms of checking the roof insulation, and whether there were air leaks around openings.

In total, two rounds of inspections were carried out on unoccupied IBT show houses at Eric Molobi Housing Innovation Hub before the tool was piloted on a list of IBT houses in provinces in which beneficiaries lived.

These houses were taken from a list of IBT system owners interested in getting on the database. From the information received 12 houses were inspected for the piloting stage in four provinces.

## Discussion

The description of the dataset for the pilot study suggests that there are questions as to the true central tendency. Further investigation is required by extending the study to draw inferences from a larger sample size that is a better representation to make generalisations. Not only should the sample size be increased, but IBT homes should be monitored at a relevant frequency to compare the results of the same homes that can establish possible degradation over time.

Future investigations could also provide more insight as to whether the IBT database is really necessary and could shed light on the components of a home that will require more scrutiny during general inspections of IBT systems. The full results will be made available on the NHBC website when the regulatory body implements its dynamic IBT Database.

Extracts from 'Assessing the condition of 'as built' innovative building technology homes against theoretical expectations' by Jeff Mahachi and Dominique Geszler, NHBC. ■

# THERMAL COMFORT OF

According to IBT fundi, Dr Jeff Mahachi from the National Home Builders Registration Council (NHBC), one of the fundamental reasons for erecting buildings is to create a shelter against the variations of the outdoor climate.

He highlights that innovation in the building system in terms of materials or methods of construction has the potential to be able to achieve improved thermal performance due to its integrated nature of the technology components for relevant climatic zones. There has been little research on the performance of IBT envelopes in the South African low-income and gap housing market. More attention should be paid when designing and constructing homes to address comfort temperatures and energy efficiency savings that will induce benefits in the longer term.

Due to the shortfall of housing for the poor, more efficient ways of delivering homes are being sought through the use of IBT. To contribute to wider development goals of sustainability, it is critical to create a shelter against the vicissitudes of the outdoor climate that simultaneously addresses environmental concerns such as energy efficiency. The aim of climate conscious design is thermal comfort, on which this research is based. Thermal comfort or thermal neutrality is the series of conditions in which householders feel neither too hot nor too cold. The research includes whether the indoor temperatures of the constructed IBTs fall within acceptable comfort temperature ranges. The NHBC

Innovative building technologies (IBTs) demonstrate significant value-adding attributes to construction products and building systems, which could play a more significant role in the delivery of subsidised houses in South Africa.

logged data for summer and winter including minimum and maximum, average temperatures and humidity at 25 IBT houses at the NHBC Eric Molobi Housing Innovation Hub in Soshanguve, Pretoria.

Temperature and humidity loggers were set up in IBT houses ranging in size from 30 m<sup>2</sup> and 110 m<sup>2</sup> and the data collected was to ascertain whether the indoor temperatures were within American Society of Heating, Refrigerating, Air-conditioning Engineers (ASHRAE) 55-2013 adaptive method comfort ranges of naturally ventilated buildings. The adaptive chart relates indoor comfort temperature to prevailing outdoor temperature and defines zones of 80% and 90% satisfaction. The results indicated that only a marginal percentage of the maximum and minimum dry-bulb temperatures, over a one month period, complied with ASHRAE standard 55-2013. However, the average dry-bulb temperatures for all the IBT homes in summer complied, whereas most IBT houses in winter did not comply. This is the temperature of air measured by a thermometer freely exposed to the air but shielded from radiation and moisture. Holm and Engelbrecht state that building design that achieves thermal comfort with a minimum

of artificial heating or cooling is an energy-efficient building. It is also likely to be the building with the minimum negative environmental impact and the lowest running energy cost. A fundamental reason for erecting buildings is to protect householders against extreme climate changes and create indoor environmental conditions that are better than outdoors and within the comfort range.

International standards commonly used to evaluate thermal environments include ISO 7730 (2005), ASHRAE 55 (2013) and EN 15251(2007). ASHRAE Standard 55 (Thermal Environmental Conditions for Human Occupancy). These standard that provides minimum requirements for acceptable thermal indoor environments.

The study aims to monitor the thermal comfort of 25 different IBT houses at Eric Molobi Innovation Hub to establish the live-ability of houses in terms of comfortable internal temperatures. It therefore establishes whether the IBT houses are thermally comfortable in terms of the indoor temperatures versus outdoor temperatures. Bearing in mind that the IBT houses are show units, the performance of the envelope of the building becomes relevant in the exercise. To obtain optimal results





# 'AS-BUILT' IBT HOUSES

the windows were closed during the data collection process. However, this approach does not reflect the real temperatures in the case of an occupied house where open windows allow for cross ventilation. Cross ventilation could possibly improve the indoor comfort, but cannot be plausibly determined in this phase of the analysis. Reasons why the relevant IBT houses were not thermally comfortable were also not established for this investigation.

## Methodology and Analysis

For the sampling, calibrated Keytag KTL – 508 Temperature and Humidity data loggers were used, which came with a certificate of compliance. For this phase, two instruments (north and south) were set up per house in peak winter and summer periods for one month. Being part of the first stage of the project some interesting deductions were made on this analysis in terms of thermal comfort considering indoor and outdoor temperatures for naturally ventilated buildings according the ASHRAE 55 (2013) Adaptive method.

The data was analysed using the web-based tool for thermal comfort calculations according to ASHRAE Standard 55 (2013), developed by the University of California at Berkeley. The main features of the Adaptive method, applicable to naturally ventilated buildings, included input variables such as dry-bulb air temperature, mean radiant temperature and prevailing mean outdoor temperature. The adaptive chart/tool relates to indoor comfort temperature

to prevailing outdoor temperature and defines zones of 80% and 90% satisfaction.

The tool's operative minimum and maximum comfort temperature benchmarks automatically adjust according to the input data, which ranged between approximately 15 °C and 32 °C. The operative temperature can be defined as the average of the mean radiant and ambient temperatures weighted by their respective heat transfer coefficients.

The personal factors and humidity are not significant in this method since adaptation is considered, and the only variable is the outdoor temperature. The mean radiant temperature of the enclosing surface of a space is determined by the emissivity and temperature of the surfaces. According to Holm and Engelbrecht small floor areas and low ceilings force radiant temperature to be closer to the dry-bulb air temperature and therefore for this investigation taken as the same value.

The input data for the thermal comfort tool was the real-time data collected from the loggers for the indoor and outdoor temperatures for each house to individually establish whether the temperatures fell within the relevant ASHRAE 55 comfort ranges (benchmarks) for the relevant winter and summer periods.

Due to the variables for each house being different, direct comparisons are not made in this phase of the research. The mean radiant temperature for the first exercise is taken as the indoor dry-bulb air temperature.

## Conclusion

For this investigation, focus was on the thermal performance of IBT houses and whether they complied with the ASHRAE 55 Adaptive model thermal comfort ranges.

The poor winter results revealed that more research is required on design of IBT houses for thermal performance in different climate zones. Considering these houses were built before 2011, when the SANS 10400XA standard on energy efficiency requirements came into operation, there is now a better benchmark according to which IBT houses can be designed for ensuring thermal comfort.

The question on whether the relevant IBT houses comply with comfort ranges has been addressed, but still need to uncover the reasons for the relevant performance. Through the use of a certified energy efficiency software one will be able to complete the modelling of the at least one IBT house falling within the relevant different categories (light weight to heavy weight) to establish the variables that contributed to the performance.

The variables that could have had an influence on the thermal comfort can range from issues related to orientation, window position and sizes, thermal mass, insulation, cross ventilation and shading. One can then also ascertain whether radiant temperature would have made a significant difference in the results.

The thermal ratings will be available on the new dynamic new NHBRC IBT Database. ■



# NHBRC'S IBT ANALYSER

**IBT Analyser is a relational database system that uses quantitative and qualitative data packaged in a data cartridges. This software tool enables decision makers and the professional team to select the appropriate IBT system for a user-defined set of criteria.**

The essential purpose of the NHBRC software tool is to effectively and efficiently assist in the selection of appropriate IBT systems, within a specific climate and with the consideration a number of other quantitative and qualitative criteria. In the past this was almost impossible, because it is too time consuming to study Agreement certificates and execute a rational design for every new project.

The software application is a relational database and uses a convenient generic concept of 'data cartridges'. A 'data cartridge' is a set of performance data such as the amount of energy that a specific construction system type would require for heating and cooling in a specific climate. This concept makes it possible to expand the system in future. The system is generic and can support any number of 'data cartridges' and any number of construction systems.

The IBT Analyser is a custom-made software tool, which will assist planners and designers to compare a number of building systems taking into account climatic context, region of the proposed sit as well as performance characteristics of the systems, for use in the home building sector. The IBT Analyser will identify the technology most suitable in accordance with the set of user-defined criteria and enhance selection and the decision making process.

A CSIR Köppen-Geiger climatic map of South Africa distinguishes 14 climatic zones as opposed to the six zone model of SANS 204. Weather files were created for the 14 zones as well as virtual models of each representative IBT and masonry building system. Virtual models were created and correlated to that of a measured notional building to ensure accuracy of the simulated data. The Agrément certification of a sample of 25 certified systems was extensively evaluated and graded qualitatively on a five point scale. Standard masonry and lightweight steel construction meth-

The Council for Scientific and Industrial Research in collaboration with the National Home Builders Registration Council designed and developed an Innovative Building Technology Analyser and User Guide software. The IBT Analyser is a novel analysis software tool to facilitate the selection of appropriate IBT systems for a given set of criteria.



ods were also modelled, bringing to 27 the number of pre-populated sample building systems. The categories rated were: energy requirement, durability, acoustic performance, condensation and fire performance.

The User Guide describes: The software design philosophy. Operation of the new Innovative Building Technology (IBT) Analyser software. How to analyse and input new IBT systems. Defining relative importance of criteria (user-discretion). How to compare the performance of the list of IBT systems against user-defined criteria. The software predicts the performance an expansible set of building systems. It equips the user to select a warranted resolution/s

for the proposed site, whether it is an IBT system or masonry construction, consequentially ensuring the design of comfortable and energy-efficient buildings within South Africa's diverse climate.

The IBT Analyser summarises the list of systems that have been pre-populated in the software system and their classifications. To facilitate the categorization and analysis of systems a special classification system has been created. The classification uses an extensible alphabetic system and ranges from light weight (Classification A) to heavy weight (Classification G) systems. In the original system not all IBT systems have been analysed in detail with regards

energy usage due to budget and time constraints. In a full commercial deployment of IBT Analyser it would be more accurate to analyse all systems for their energy performance.

### Classification A: Light Building System (LBS)

The superstructure of the IBTs in this classification category is similar to the light steel frame (LSF) construction that has emerged in South Africa in recent years as a viable alternative to standard brick and mortar constructions. The IBTs in this classification category are characterised by a load bearing steel structural frame complying with SANS 517: 2011 Light Steel Frame Building. Typically, the steel frame is clad internally and externally with a weatherproof building board and the cavity between the boards is filled with an insulating material, for example, glass fibre, foamed concrete or high density polyurethane foam.

As the structure is being erected on site, the electrical and water supply services are installed in the wall cavities. Alternatively, when the building system is based on a factory made structural insulated panel (SIP), the plumbing and electrical conduits are pre-fixed into the panels.

### Classification B: Light Building System (LBS)

Other than having insulated foundations, the building systems in this classification category are similar in all other respects to those falling into classification A.

### Classification C: Light Building System (LBS)

The external wall of the IBTs in this classification category is characterised by lightweight, prefabricated concrete panels which are either interlocking or bolted to each other. The wall panels are secured by mechanical anchors at the bottom to the floor; and at the top, they are connected to a ring beam and or the roof structure.

The vertical joints between panels are sealed internally and externally with a flexible sealant. Wall thicknesses may vary depending on climatic conditions and fire resistance requirements. Holes for service pipes and ducts, recesses and grooves for jointing are pre-formed in the wall panels.



### Classification G: Masonry construction

This category is the conventional masonry construction that is used as a benchmark.

### Caveats of the system

The IBT Analyser has several limitations and caveats that should also be considered when using the system:

The system contains both qualitative and quantitative evaluations. In the former case great care must be taken to ensure consistency in the evaluation, because different persons might score the performance of a particular system differently.

When a specific IBT construction method is simulated with energy simulation software such as Ecotect or DesignBuilder great care must be taken to ensure that all the models are consistent with regards to the weather files used and the temperature ranges set for comfort to ensure that the comparison is fair and consistent. Do not mix energy simulation software when simulating the energy usage. Various software systems produce different results and will distort the comparative performance of the various IBT's.

When adding new IBT system definitions great care must be taken to ensure that all data cartridges contains all values for all systems, otherwise the performance comparisons will be inconsistent and unreliable.

When choosing the climatic region, ensure that only one climatic region is selected, otherwise the results will be unreliable. This is normally not a problem when the climate is selected by picking directly on the Köppen-Geiger climatic map itself.

The IBT Analyser provides no guarantee of performance of badly designed or badly constructed facilities. For example a school with no solar protection in North West Province with poor natural ventilation will be uncomfortable regardless of the IBT system that has been used.

### The IBT Analyser security system

The system has been designed with two types of user in mind, i.e. the expert user that is allowed to modify existing system values or add new IBT systems and a basic user that will use the system for decision support without the need to change anything. ■

### Classification D: Hybrid Building Systems

The superstructure of IBTs in this classification category is a complex mix of concrete, insulating materials, structural frames and cladding boards. The superstructure may comprise a structural frame which is assembled on site, clad internally and externally with building boards/insulating boards and the wall cavity is filled with in-situ cast concrete which may or may not be reinforced. Alternatively, the superstructure may be assembled from hollow blocks or hollow panels which are filled with in-situ cast concrete that may or may not be reinforced. Services are incorporated into the wall voids prior to casting of the concrete.

### Classification E: Heavy Weight Building System (HWS)

The superstructure of ABTs in this classification category is assembled from prefabricated dense concrete panels and posts or in-situ cast panels having a similar weight to dense concrete. Services may be built into floors or walls during the erection of a building system.

### Classification F: Heavy Weight Building System (HWS)

The superstructure of ABTs in this classification category is assembled from prefabricated hollow or solid building blocks in a manner very similar to the erection of standard brick and mortar walls. Conduits for services may be cast into the floor, may be installed in rebates chased into walls or may be surface mounted.

# National Human Settlements Academy

The NHBRC, government's regulatory home building authority and training arm, aims to enhance training and the delivery of housing in the sector by promoting a business case for a National Human Settlements Academy.

The Human Settlement Training Academy's vision will be to strive to become a world class leader within the Human Settlements and Built Environment in the delivery of high quality programmes, research, future studies and development with an African focus, orientation and content.

A situational analysis of the existing programmes reveals a lack of synergy in programme offering and lack of impact measurement.

The lack of alignment and synergy, monitoring tools and measurement of value for money complicates the road map towards professionalisation of the sector.

There needs to be accountability amongst various stakeholders, who are offering similar programmes that are disjointed. It is clear that, while there are various institutions offering capacity building, this include the current school of government.

The Academy should align its plans and programmes with the existing school of government in order to avoid duplication of programmes.

The Nelson Mandela Metropolitan University as the mentor and professional lead expert support to the academy will align its school of public management and strategic leadership. This expertise will assist in ensuring that all programme offerings are flexible, allow exit, synergy and talk to each other in order to achieve one goal.

Furthermore, a detailed situational analysis of the current state of each stakeholder, their skills needs, gaps and challenges should be undertaken in order for the academy to develop intervention strategies that will inform curriculum content and programmes of each school under the academy. The school of demand planning, knowledge management, research and future studies will

The inaugural National Human Settlements Conference aims to generate pragmatic solutions for urban and rural settings and to demonstrate best practices. The National Home Builders Registration Council (NHBRC) is a critical training partner providing courses in all eight provinces.

provide overall research support to all schools. Effective coordination will form a cornerstone of the sustainable strategy of the academy.

## Service-delivery environment

Twenty years into democracy, towns and cities remain fragmented, imposing high costs on households and the economy.

The delivery of some additional 3,8 million subsidised houses offered adequate shelter to poor people and also helped contribute to an unprecedented growth in value to a historical distorted property market.

However, the market's enormous price cliffs act as barriers for most black South Africans to progress up the property ladder and thus exclude their effective participation in the property market. This is exacerbated by the disproportionate income levels particularly of those living below the income band and Gap market. The settlements locations are often too far from economic opportunities and put an additional burden on householders.

Despite the progress achieved in housing delivery, major challenges regarding sustainable human settlements development still exist. The country's human settlements patterns remain dysfunctional, the housing market is fractured with inequitable access to its workings and benefits and there is still an on-going property affordability problem across various sub-markets. The weak spatial planning and governance capabilities; uncertain prospects of densely settled and historically dislocated rural-like homeland areas.

Government needs to ensure

continued provision of housing and infrastructure and social services (addressing asset poverty) to meet a complex set of housing affordability needs; and the need to reactivate strong social solidarity amongst communities in building vibrant and safe settlements.

To address these challenges, the 20 Year Review proposes a need to develop an urban development strategy to make urban spaces liveable, equitable, sustained, resilient and efficient as well as to support economic growth and social cohesion.

To advance the human settlements development agenda, the National Development Plan contains a series of interventions required to address economic solutions, institutional reforms, change to land management systems and infrastructure investment. It is envisaged that by 2030, measurable progress will be made towards breaking former spatial patterns, and developing more coherent and inclusive approach to land.

A series of steps have already been identified. This begins with reviewing and evaluating the existing housing subsidy instruments to improve targeting and combining programmes to catalyse spatial, social and economic transformation and integration of settlements. Under the integrated residential subsidy programme, the transfer of all title deeds for all subsidy units over the next 5 years will be prioritised.

The informal settlement upgrading programme will be scaled up and a more coherent multi-segmented social rental housing programme which includes backyard rentals will be put in place.



In addition, the affordable market will be tackled in a more determined fashion with a particular emphasis on a constructive engagement with the private sector to improve delivery.

For the success of the planned housing and human settlement programme reforms, significant institutional reforms to improve the coordination of housing and human settlement development will be put in place. This includes strengthening major municipalities' capabilities, and in particular metros, to integrate the housing grants and the human settlement-making grants more robustly. This will give the metros the responsibility of the housing function to them.

This will also be supported by an improved interface of the housing and human settlement planning elements with the spatial planning frameworks driven within other parts of government, to guide investment decisions so that they result in more integrated human settlements. In turn, this would result in growth in the value of the property market with a more equitable distribution of its benefits.

### Training Academy Vision

The Academy Vision and its values will be rooted and grounded from the values and legacy of the country's first democratically elected leader, Nelson Mandela, towards building education, skills and development. In

order to deliver resilient and vibrant neighbourhoods and cities.

### Training Academy Mission Statement

To conduct Built Environment industry originated research, facilitate the learning of industry sponsored artisans, technicians, technologists, managers and researchers. To provide Short Learning Programmes aimed at professionalisation of the Human Settlements space. This includes engaging and collaborating with other technical and research institutes regionally, nationally, and internationally in order to meet future demands and goals.

### Training Academy Objectives

The purpose of the Human Settlements Training Academy is to contribute to the development of technical, managerial and professional skills; establishment of new research future studies and development and take advantage of training and research opportunities within the Built Environment; facilitate knowledge transfer to and from the Built Environment through training and research enterprise. To provide opportunities for youth training, administration, technical, supervisory and professional staff development and provide practicing professionals space to conduct applied research at MSc and Doctoral level with a view to finding

futuristic solutions to problems in their immediate work environment. The Human Settlements Training Academy's main objectives include: Brand the Training Academy Human Settlements and Built Environment research excellence. Brand the Department of Human Settlements (DHS) professionalisation project.

Expand Built Environment training and research capacity through the harnessing of multi-disciplinary training and research competencies in the participating of Technical Vocational Education & Training (TVETS), Schools, faculties and universities

Produce skilled artisans, administration, technical, supervisory and professional staff and develop research outputs tailored to specific needs of the Built Environment industry stakeholders.

The Academy's activities will be clustered into four knowledge fields (Schools): namely School of Construction Supervision and Technical Excellence; School of Management Development and Capacity Building; School of Professionalism and Innovation and School of Demand Planning, Knowledge Management, Research and Futures Studies. Each of the knowledge fields will be well endowed with experts in the area and where necessary additional capacity will be sourced from collaborating Departments in other Faculties, Universities and Technical Vocational Education & Training. ■

# EVERITE'S IBT SYSTEMS

**A**AC as a building material has gained a considerable share of the international construction market since its inception in the 1920's in Sweden. Today it maintains its reputation of the building material of the future. It is viewed as a revolutionary material that offers a unique combination of strength, light-weight, thermal insulation, sound absorption, unsurpassed fire resistance and unprecedented ease of construction.

Everite Building Products has been recognised for its role in innovative building systems and is renowned for its range of Nutec Fibre Cement roofing, ceilings and cladding materials.

Hebel AAC ticks all the boxes with speed of construction, thermal performance, thermal, sound and fire, requiring standard masonry the product has proved its cost effectiveness.

AAC is made from sand, lime, cement, water and aluminium powder acting as a foaming agent to form a homogenous cellular structure known as calcium silicate hydrate. One quarter the weight of conventional concrete curing in autoclaves for up to 12 hours. It is this autoclaving process that gives this material its unique and superior performance characteristics over any other.

Hebel reinforced elements, such as slab panels and wall panels, contain specially coated steel to prevent



Hebel Autoclaved Aerated Concrete (AAC) has appointed Everite Building Products as the only producer in Africa of the product in a licensing deal with the Xella Group.

corrosion and gives the material both dimensional accuracy and stability. The steel reinforcing is placed in the moulds before the mix is added. The manufacturing process is then the same as described above for unreinforced elements. It is available as blocks, precast reinforced units such as floors, walls, roofs and lintels.

## Features and Benefits

### High Speed of Construction

Hebel panels are faster to construct and require significantly less labour when compared to traditional masonry construction techniques leading to substantial savings and reduced on-site costs depending on the finish required.

- This means a cleaner safer work area during construction and less clean-up at completion
- Fast installation and easy workability with simple tools result in lower construction costs
- Can be cut and shaped like wood with simple hand tools
- Chasing of walls can be done by hand or with a wood router
- Smooth finish can substan-

tially remove plastering trades

### Load-bearing capacity

Being a masonry product, Hebel blocks and panels provide the attributes of being solid, strong and secure – all of these normally associated with traditional bricks. The 600 kg/m<sup>3</sup> density product has a 5 MPa compressive strength and is rated for building up to four storey level and in earthquake zones due to its high strength and weight ratio.

### Fire resistance

Non-combustible and renowned for its highly fire resistant properties a 150 mm thick ACC



Hebel wall withstands direct fire exposure for up to six hours. A standard 100 mm thick Hebel wall can withstand temperatures for four hours.

### Thermal insulation

The enhanced insulation performance is five times that of brick of the same thickness. The thermal efficiency reduces the reliance on heating and cooling appliances, and provides up to 60% reduction in energy costs.

### Cost effective

The cost of Hebel panels and blocks are only a part of life cycle costing of a building.

When factors such as transportation, assembly and finishing, as well as the energy efficiency, fire, protection, maintenance, durability and environmental properties are considered, Hebel provides an economical solution for the lifespan of the building.

This includes savings of up to 15% in structural costs (foundations and structure) attributable to low mass to strength ratio properties of AAC.

The reduced weight of walls: typical brick and mortar wall load is approximately 350 kg/m<sup>2</sup> - AAC blocks wall load is approximately 90 kg/m<sup>2</sup>.

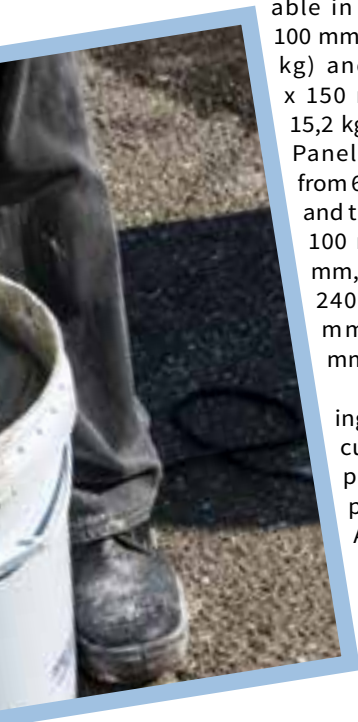
### Finishing

Conventional brickwork requires plaster and skim coat for a perfectly smooth finish whereas the extra naturally smooth surface of Hebel only requires a skim coat.

### Sizes

The Hebel Block sizes are available in 600 x 250 x 100 mm (Mass = 10,2 kg) and 600 x 250 x 150 mm (Mass = 15,2 kg). The Hebel Panel sizes range from 600 mm width and thicknesses of 100 mm and 150 mm, lengths span 2400 mm, 2700 mm and 3000 mm.

Everite Building Products is currently supplying AAC products in Angola for a 45 000 unit project. ■



# Solution to housing delivery

South Africa has a great need for additional and alternative methods of building techniques and designs, while still providing acceptable cost efficient housing with a low environmental footprint.

In South Africa, providing social, Gap, Flisp and affordable housing remains a major challenge. Several third world governments have attempted to address the issue through housing policies or programs offering service sites and housing subsidies.

The reality is that most developing countries do not have adequate capital resources to build conventional housing. The South African government's goal is to create sustainable human settlement developments that engenders a sense of pride and advances the upliftment of the entire community.

Statistically over 50% of the world's population already reside in urban areas. The impact of this is particularly visible around South Africa's cities with informal settlements adding to the urban sprawl.

Most settlements still comprise of poor housing structures that are often damaged during inclement weather and have few utilities, community facilities, or proper roads. Innovative building system developer, André Esterhuizen, established Stumbelbloc almost six years ago to provide a cost efficient IBT system. The interlocking innovative building technology could offer a quick, efficient, building solution in the rural, low and middle income residential market.

The concrete building blocks are produced from plastic moulds. The interlocking building blocks are filled with a mortar mix and left to dry, creating perfectly formed con-



crete blocks. The strong, fast and cost efficient construction method has been approved by the National Home Builders Registration Council.

For example a 16 m x 2 m wall can be built from foundations in 40 minutes and a small house including roof and foundations, within three days. The blocks can be produced and erected using unskilled labour. This provides previously disadvantaged people with employment opportunities. The innovative building blocks can be produced with a spade (to mix cement), trowel and a rubber faced hammer. The only raw materials needed include cement, sand and stone, if required. The product offers longevity, thermal insulation, low life cycle costs and it is environmentally friendly.

The system has been used to roll out housing and there is a worldwide patent and design right pending in respect of the moulds and blocks. ■





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The NHBRC is a statutory body whose role is to protect the interests of housing consumers and to regulate the home building industry – in line with the Housing Consumers Measures Protection Act.

Toll Free Number: 0800 200 824 / Fraud Hotline 0800 203 698 / Webpage: [www.nhbrc.org.za](http://www.nhbrc.org.za) / Tel: +27 11 317 0000





## INSPIRATION THAT WILL LAST.

Corobrik's range of high quality face bricks have been designed to add warmth to public spaces like Freedom Park, with the intrinsic attributes of fired clay creating a colourfast finish that will last for years to come.

Let's build a better tomorrow together.



[www.corobrik.co.za](http://www.corobrik.co.za)

# AFFORDABLE HOUSING AND PUBLIC

Major masonry, paver and clay brick manufacturer, Corobrik has developed a number of products for the affordable housing market.

The Durban based group introduced the Coro Jem, specifically aimed at low cost housing and a range of economically priced faced brick such as the Namaqua-stone and Moroccan Blend.

Musa Shangase, Corobrik Commercial Director explains that the Coro Jem is a larger brick so it can be used 'through the wall' instead of needing a double skin wall. The bricks are designed for single skin face brick walls and still get the benefit of face brick. This includes a lighter mass per m<sup>2</sup> to transport compared to conventional twin-skin walling.

Corobrik has a national footprint says Shangase with Gauteng and KwaZulu-Natal representing the lion share of sales and production. He says, "Corobrik's diverse range of products allow us to supply face brick solutions to all the sector in the



South African building industry ranging from private/public residential and private /public non-residential sectors. Growth in the residential sector remains optimistic. This is driven largely by the increase in demand for formal housing, which supports the National Development Plan. The

public sector is a critical sector for Corobrik with specific product and supply strategies in place to capitalise on infrastructure spending. Almost half of all our current specification projects across South Africa is in the public sector and this has continued to be a significant sector."

## PMSA's innovations

Leading manufacturer of brick, block and paving machines on the continent, PMSA, and Original Equipment Manufacturer continues to focus on technological development, such as the introduction of its new Ultravibe vibrating system. PMSA has been fine-tuning its internal processes and systems over the last five years, from automated tracking of spares and parts to a new CRM system. "We have expended a large amount of effort and energy on putting systems in place to allow the company to grow," comments Managing Director Walter Ebeling.

The company is now in an ideal position to focus on ongoing technical innovation not only can the new technology be retrofitted to its large range of existing machines, but it will also form the basis of a brand-new machine under development

by PMSA. "This will be a large pallet, 1 400 mm by 1 100 mm production board machine incorporating all of our latest advances in its design," Ebeling reveals.

"We undertook these latest developments in order to allow our customers to be more productive. The best means of achieving this is if your equipment is more reliable. That is why we have been in business for 40 years, as we are continually improving our machines and technology," Ebeling elaborates.

An example of PMSA's ongoing product development is its new Eco range of automated handling systems. This gives customers the option of automated handling plants at a far more affordable price compared to the more costly top-of-the-range systems. The new Eco range includes forklift options as opposed to more



conventional but higher-cost finger and transfer car systems.

"With the building and construction industry facing pressure from reduced margins and a lack of new projects, PMSA is ideally positioned to help its customers fine-tune their existing assets so as to boost productivity and final quality," Ebeling stresses." ■

# INFRASTRUCTURE



Shangase adds that the new Majuba FET College state-of-the-art college environment has set a new standard for learning institutions. The campus comprises a gatehouse, administration offices, double-storey blocks of 2 200 m<sup>2</sup> each, an exam centre, resource centre, student centre

and walkways. “Demand for education facilities in Dundee has increased drastically over the past few years with the growth in population and rising unemployment levels. To address this imbalance, Majuba FET College partnered with Endumeni Municipality to establish Dundee campus at Mpati. As part of the Umzinyathi Community Education Project, Endumeni Municipality donated land to Majuba FET College at the entrance of Dundee for the establishment of Dundee Technology Centre (DTC).

Tjaart van der Walt, Head Architect of LVDW Architects, explained that the soil was particularly rocky.

“We opted for a more conventional design in an effort to save on costs. Brick construction with face brickwork fulfilled all the requirements of this college infrastructure. The neutral colours of the face brick blended in well with the surrounding environment,” explained Van der Walt.

The bricks were laid in a conventional stretcher bond pattern while the sturdy herringbone pattern was selected for the pavers. Pattern work was included in areas of the face brick façade to express its African context.

The brickwork included



Musa Shangase

combinations of Corobrik’s range of Nebraska Travertine and Country Classic Travertine face bricks for the maintenance free facades, with Champagne and Burgundy pavers being used to compliment the buildings aesthetic and surrounds.

According to Shangase, “The choice of colours and textures work particularly well in the environment. The life-time cost-saving benefits of the face bricks is just one of the many attributes that will serve this project well into the future.” ■

## Central Square

Ocon Brick has supplied clay stock bricks for the multi-billion rand mixed-use Central Square development, in Sandton’s richest precinct. Shawn Herbst, Site Agent for Mota-engil Construction explains that Sandton has grown so much over the past five years and civil engineers have faced the challenges of product storage space on site and the limited street widths. This makes the need for stock delivery scheduling a critical requirement.

Herbst explains, “With the narrow roads of Morningside, Sandton, the developers need to enable as much traffic flow-through as possible without causing congestion. Large trucks loaded with hundreds of brick pallets needed to be offloaded quickly. Not only did we have extremely tight delivery times, limited storage space as the Central Square development

grew, we had to move 24 000 clay stock bricks up to the next level of construction.” “We chose Ocon Brick because we knew their clay stock bricks to be of a high quality and that the Ocon Brick team would be available even at short notice, as we micro-managed crucial product delivery schedules to meet the restraints at site. The Ocon Brick team met the deadlines and delivered at 6am after being ordered the previous day. It is that kind of team work that we sought and received for the Central Square site.”

Ocon Brick supplied 5 208 000 for the Central Square residential blocks, “Construction commenced in December 2015 and is due for completion mid-2017. With 52% of the project already complete; there are a further nine floors to be constructed and 17 000 m<sup>2</sup> of concrete parking decks



still to be completed,” says Ocon Brick consultant, Lucas Steyn. “We are fortunate that due to our large manufacturing capability we are able to hold sufficient stock at any given point in time enabling us to meet our customer’s specific time-critical delivery requirements.” ■

# Plumbing industry App

This is the first local plumbing App linked to both the Plumbing Industry Registration Board and Certificate of Compliance system, as well as providing access to all the tools and products required. The App includes installation guides from leading manufacturers such as DPI Plastics was recently launched at Plumbdrain Africa 2016, co-located at Interbuild Africa, at Expo Centre Nasrec in Johannesburg.

DPI Plastics Marketing Manager Martine Goodchild revealed that the manufacturer will be launching its own iOS/Android technical App within the next two months. This reflects the growing importance of digital platforms such as smartphones versus the traditional way of conducting business.

"Africa, for example, has a 90% smartphone penetration rate, together with a significant youth bulge, with 70% of the population under 25. When our website became mobile-responsive in November 2015, the number of new visitors quadrupled, testament to how business is being conducted more and more via smartphone," says Goodchild.

Other developments at DPI Plastics include various capital-intensive projects to boost the quality and productivity at its Johannesburg and Bellville manufacturing facilities. These include an ongoing mould replacement programme in Johan-

Leading producer of PVC and HPDE water reticulation, drainage and pipe fitting systems, DPI Plastics, have incorporated installation guides on the new APP Plumber.



nesburg. The programme has seen the production of a brand-new mould for 50 mm bend pipe fittings. DPI Plastics has also taken delivery of its new P-trap mould from Portugal, in addition to adding a second large-bore extrusion line at its Johannesburg manufacturing facility. This follows on from the installation of the original Krauss Maffei 630 mm bore extrusion line in 2013.

"Plumbdrain Africa 2016 is an important platform for us to connect with our customers to showcase our

comprehensive product range, in addition to some new innovations such as our latest apps," concludes Goodchild.

DPI Plastics is a member of IOPSA which, in turn, is affiliated to the World Plumbing Council (WPC).

The company is a leading manufacturer of PVC and HDPE water reticulation and drainage pipe and fitting systems, with two ISO 9001 certified South African factories, one in Johannesburg and the other in Cape Town. ■

## Xylem's new Marketing Manager



Lorraine Smart

Xylem Water Solutions South Africa, recently announced the appointment of its new marketing manager; Lorraine Smart. Smart has decades of experience in the sector and is set to bring her unique skillset and industry know-how to the role to further expand Xylem Water Solutions' reputation as a global thought leader. Lorraine Smart is not the kind of woman who does not leave an impression. It was her candid

approach coupled with her wealth of experience that made her stand out among several incumbents in their bid to win the position of marketing manager at Xylem Water Solutions South Africa.

Pierre Fourie, Managing Director of Xylem Water Solutions South Africa said, "We needed someone who could pick up the reigns and run in this fast-paced and demanding role. We are fortunate to have found someone as versatile and experienced as Lorraine."

Smart brings extensive experience of two of Xylem's globally renowned brands Flygt and Lowara to the role along with strong business acumen and a no-nonsense approach to

excellent results. A new era of streamlined marketing efficiency lies ahead for Xylem Water Solutions lies ahead with Lorraine Smart at the helm.

Xylem is a leading global water technology provider, enabling customers to transport, treat, test and efficiently use water in public utility, residential and commercial building services, industrial and agricultural settings.

The company does business in more than 150 countries through a number of market-leading product brands, and its people bring broad applications expertise with a strong focus on finding local solutions to the world's most challenging water and wastewater problems. ■

# Kwikot heat pump and solar solutions

The National Building Regulations SANS 10400 XA stipulates that 50% of hot water heating systems must be generated from solar, heat pumps, LP or natural gas to centralised water heating systems.

The type of system to be installed will depend on a number of environmental factors, such as external factors, shading, other buildings, security; orientation to north; roof pitch and size; aesthetic considerations; building design and access for future maintenance.

Webber addressed developers and contractors at the recent International Housing Solutions annual affordable housing conference held in Johannesburg.

He says that there are a number of options for a free standing single dwelling, while walk-ups of three and four storey limits solar options as this is dependent on the roof size and the extensive pipe runs to lower floors. Maintenance on high roofs is also a challenge. Heat pumps can be used if provision has been made for ducts to accommodate the geyser and heat pump. Central hot water systems are an option – metering and design is critical.

Kwikot's solar products comply with SANS 1307, 10106, 10252-1:2012 and 10254:2012. The correct type of solar system will depend on location and weather. The Department of Human Settlements has moved away from low pressure solar water systems.

At this stage, there is no performance standard for heat pumps. If solar is not practical due to orientation then heat pumps offer an alternative solution. The lower initial capital cost of heat pumps offers a better annualised savings than solar, but it is

Herman Webber, Technical Director at Kwikot hot water heating systems, offers advice on the types of renewable energy for use in the residential sector.



reliant on electricity and long term maintenance costs need to be factored into the life cycle costs.

Webber suggests a heating system comprising of an industrial hot water heater with an industrial heat pumps or solar as a renewable heat/energy source. This combination for multi-storey residential units and the standing heat loss of the system has to be considered and the extended long run pipes. Metering can be a challenge. The total installed electrical load is lower when compared to conventional geysers.

Each development has to be evaluated individually.

He offers a quick checklist:

- the product should be considered in terms of suitability
- the installation, maintenance and repair of each product
- the design of the building to avoid plumbing problems

Webber says that price should not be the only deciding factor.

The Kwikot range meets the South African Bureau of Standards (SANS) 10254 geyser installation requirements. Products include Kwiksol



Solar Water Heaters Direct and Indirect systems are available in 100, 150, 200 and 250 litre sizes for split or thermosiphon installations. Solar collector panels and vacuum tubes are also available. Kwiksol solarfit conversion can transform an existing Kwikot electric water heater to a direct solar system.

Kwiksol Solar Installation components and accessories; Kwikpump Domestic Heat Pumps and industrial range.

Established in 1903, Kwikot is renowned for quality and the company manufacture and supply the plumbing industry in South Africa. "The brand can supply replacement spares for the entire hot water system range and we carry spares for systems that may have been first manufactured up to 30 years ago," says Webber. ■

## Solar vs heat pumps

Murray James, Boogertman + Partners architects, says that the current SANS XA regulations require that all new hot water installations have at least 50% of the water heated by means other than electric resistance elements. This has led to either Solar Thermal or Heat Pumps being the dominant choices for hot water heating systems.

James says, "Until very recently solar photovoltaic systems have been too expensive to justify. We have seen in the last year that the cost for a Solar PV system has fallen to midway between Solar Thermal & Heat Pumps. The PV systems require more roof space for solar panels than Solar Thermal and as a result is not ideal for every installation. However, in most low-to-medium density residential applications it is suitable."

James gives an example of the costs for a recent project based on each system.

- Solar Thermal – R16 000 per unit
- Solar PV – R19 000 per unit
- Heat Pump – R21 000 per unit

"The obvious advantage with the solar systems is that the hot-water generation costs are much lower.

The Solar PV option further has no moving parts, and so maintenance costs are likely to be lower.

Heat pumps have an advantage in certain coastal areas such as Durban which experience high numbers of cloud cover days, reducing the efficiency of solar options," concludes James. ■

# THE PERFECT WOOD-LOOK INSTALLATION

Fashionable 'wood-look' ceramic and porcelain tiles are as aesthetically-pleasing as genuine wooden floors.

**T**AL Marketing Manager, Gela Ohl says, "Ceramic and porcelain wood-look tiles can be installed in areas of the home such as bathrooms, kitchens and outdoor areas – where humidity and dampness would make wooden flooring impractical. Many wood-look tiles are the length of wooden planks and are known as 'large format tiles', where the length of at least one edge is equal to or greater than 600 mm, or where the area is greater than 3 500 cm<sup>2</sup>."

## Installation tips

There are permissible manufacturing tolerances for ceramic and porcelain tiles, and large format tiles may have permissible surface flatness irregularities. For example, the tile surface may be 'curved' or 'bowed'. If this is not taken into consideration when planning the installation, there is a risk of tile 'lipping' – whereby the elevation of the edges and corners of the tiles are inconsistent.

To minimise the risk of lipping it is important to ensure that the floor is level before starting the installation. "TAL SCREEDMASTER, a self-smoothing underlayment, may be installed to achieve the required surface finish. Laying of tiles in a brick or running bond pattern should also be carefully considered because of potential lipping caused by the curvature of large format tiles. A maximum offset of 30% is recommended."

## Tile tips

Wood-look tiles with different shades per tile or box should be laid randomly,



Gela Ohl

not according to the colours. Start the layout of the installation from the centre point in the room, ensuring that the follow-on rows are offset by a maximum of 30% in a running brick pattern. To ensure full contact of the large format tile with the prepared surface, it is advisable to fill in the voids on the back of the tile with a thin coat of adhesive.

This process is known as 'back buttering'. This, in addition to applying the adhesive to the substrate using a suitable notched floor trowel, will ensure a solid bed of adhesive behind each tile. The correct adhesive must be used when fixing the tiles to the prepared surface. TAL offers a range of cement-based tile adhesives from rapid or quick to standard setting, in a grey or white colour.

The spacer size must be correct for the type of tile selected. "The joint width between glazed ceramic floor tiles should be a minimum of 5 mm wide, and a minimum of 3 mm wide between porcelain tiles, including rectified porcelain tiles. To achieve the natural look, opt for grout colour that is darker than the tile itself," explains Ohl.

## Joint tips

Allowance for building, thermal and moisture movement must be made in all tile installations. Perimeter

joints must be installed around the perimeter of all floors and around any fixtures protruding through the tile installation, such as walls, columns and stairs. Intermediate tile panel movement joints should also be installed at maximum 5 m centres in both directions for interior surface bed applications, and maximum 3 m centres for suspended slabs and exterior applications.

These joints must be a minimum of 5 mm wide, must extend through the tile and tile adhesive layers to the substrate, and must be filled with a good quality resilient joint sealant and suitable backing cord. When using large format tiles, there will be a smaller number of grout joints, compared with the same area of normal format tiling. As a result, less movement or 'stress' can be accommodated at the tile joints.

TAL products are designed, manufactured and tested according to its high-quality standards. The Technical Advisory Service provides a comprehensive range of solutions for all types of wood-look tile installations, ranging from dark-finish, whitewash or lime-wash effect, as well as large planks or smaller parquet blocks.

For further information contact the TAL Technical Advisory Service on 0860 000 TAL (825) or visit [www.tal.co.za](http://www.tal.co.za) ■

# Contemporary flooring solutions

When it comes to designing a space, it's important to consider the flooring options available today.

**S**aint-Gobain Weber share insights into the popular use of floor screeds, a unique flooring style, which brings flair and function to any space and achieves the 'Industrial Chic' look that is highly sought after globally and seems to be gaining traction in South Africa.

Weber brings you one step closer to achieving this easily with its comprehensive range of flooring solutions for the residential markets. Products include surface preparation of a floor before application, various floor screed options as well as sealers and cleaners.

Saint-Gobain Weber recommend a screed that is typically self-levelling and fast drying, designed to provide an uncompromised underlayment for any finished floor. Using the Weber WB300 underlay self-levelling screed before tiles, carpets or vinyl is applied, will extend the life and improve the performance of the finished floor.

A Weber Design Floor screed can get you as close as possible to a through colour finished floor, which has become a firm favourite in the contemporary residential market.

Its continuous appearance makes them ideal for open-plan layouts where various areas of the home will flow seamlessly into one another. Politerm blu is added during application and will improve the room's ambient temperature making it warm in winter and cool in summer. The is available in various colours to suit almost any space.

Screeds are rapidly being adopted as an alternative flooring option. "At Weber we want to partner with industry professionals from the onset of the design of the space to be able to create beautiful flooring. We offer a turnkey flooring solution, sharing our knowledge of market research outcomes and international trends when it comes to selecting the right product for the desired finish," explains Ramielle De Jager, Product Manager Flooring at Saint-Gobain Weber.

For further information on Saint-Gobain Weber's comprehensive range of tile adhesives, grouts, surface preparations and flooring solutions visit [www.weber-tylon.co.za](http://www.weber-tylon.co.za) or call 08600 WEBER (93237) or email [ramielle.dejager@saint-gobain.com](mailto:ramielle.dejager@saint-gobain.com) ■



## The building envelope

**B**oogertman + Partners presented 'Innovation in Affordable Housing' at the recent International Housing Solutions 8<sup>th</sup> annual conference at Johannesburg Country Club. Murray James from Boogertman + Partners offered an insight into the building envelope – particularly windows, floors and roofs.

There are a lot of options, brick and concrete, lightweight wall systems, steel frame and polystyrene. There is a perception in the marketing that lightweight wall systems offer less security and associate the product with dry walling. Typically householders do the 'knock test' and although it is accepted overseas locally there have been challenges.

"We have some way to go where in the entry level and aspirational perception – less security – some of the systems have suppliers and preferred

installer. If the supplier doesn't meet what is expected and there is limited skills training on the product then brick based and block based products are probably what we are going to be stuck with in the residential market."

Everite has started up manufacturing its solid easy to construct its flexible on site and doesn't require any further skills or specialist installers, construction times quicker, gypsum skim coat and that time based saving has a knock on effect the cost of financing the construction period. Anything we can do to pull back the construction time, pulls back the overall costs." The Hebel Autoclaved Aerated Concrete (AAC) has gained considerable share of the international construction market. It offers a combination of strength, light-weight, thermal insulation, sound absorption, fire resistance and ease of construction. The structural



material is approximately one quarter the weight of conventional concrete, composed of minute cells which give the material light weight and high thermal insulation properties. It is available as blocks and pre-cast reinforced units for roofs, floors, walls and lintels. The naturally smooth surface only requires a skim coat finish and eliminates the needs to plaster. Although a 10 mm conventional plaster can be done, internally walls only require a gypsum skim coat. ■



## City spends on 45 000 LED street lights

The city has successfully retrofitted 1 100 street lights as part of a R3,8 million LED street lighting pilot in Burgundy Estate, Summer Greens, Eversdal, Bothasig and Aurora. This has already led to a 32% reduction in the electricity load usage.

The energy efficiency programme has resulted in savings of more than R110 million over the past five years. Since 2010, the city has saved almost 80 000 MWh of electricity and 79 000 tons of carbon, through its municipal operations. This is the equivalent of the power needed to operate all of Cape Town's street lights for a year.

Energy efficiency is central to the city's Energy 2040 goals, which aim

The City of Cape Town's investment in energy efficiency has led to almost 45 000 street lights being fitted with energy-saving light-emitting diode (LED) lights.

for the overall reduction of 37% in carbon emissions of this 21% can be achieved through energy efficiency.

'We are saving our residents money over the long-term by investing in a more sustainable way of performing our core functions. At the same time, through our emphasis on procuring more 'green goods', we are enabling job creation in the local economy,' says City's Mayoral Committee Member for Energy, Environmental and Spatial Planning, Johan van der Merwe.

"We will do whatever we can to create a more financially and environmentally sustainable tomorrow.

Given the public sector's significant purchasing power, the City now has integrated energy efficiency requirements into its procurement and is using greener technologies for certain projects, such as for the lighting of buildings. The City's LED building lighting retrofits have supported the growth of a local LED manufacturer, who now employs 80 people," says van der Merwe. ■

## Lighting costs

The Excellence in Design for Greater Efficiencies (Edge) tool from the Green Building Council of South Africa (GBCSA) is moving green building certification to a mainstream product.

GBCSA Managing Executive: Residential, Grahame Cruikshanks, says, "We have introduced a green residential building toolkit that aims to drive the residential property market to design and build resource-efficient homes."

With almost half of all energy generated in the world is used by buildings and more than half of all resources are used in construction. The message is to #Bring change home in 2016, ambitiously setting a target of 8 000

Edge certified homes across 25 projects.

For example typically a 250 unit development comprising 150 one bedroom apartments 55 m<sup>2</sup> and 100 two bedroom apartments 60m<sup>2</sup> will cost the developer an additional R121 000 or R484 per unit.

Cruikshanks compares an 80W incandescent with a 16W CFL and 5 W LED, comparing the purchase price of each with the life of the bulb, average hours burned per day, number of bulbs in a house; total cost of bulbs over a year, kWh consumer in a year and the total cost of electricity (R1,50/ kWh) the 80W Incandescent – costs R864, the 16W CFL – costs



R173; and the 5 W LED – costs R54.

He concludes: "Our purpose is to inspire a built environment in which people and planet thrive. Edge determines the financial viability of a project's green potential. Smart, fast, affordable Edge makes sure green homes are available to all."



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# Draft construction codes

Quite unexpectedly there have been some major changes that could have a huge impact on construction companies including contractors, built environment professionals and now includes construction material suppliers.

The previous codes applied only to contractors and built environment professionals.

According to Levenstein, the sector code has 123 points available, as opposed to 118 on the Amended Codes of Good Practice. The Amended Codes of Good Practice allow small companies known as exempted micro enterprises (turnover of less than R10 million per annum) to provide a sworn affidavit to prove their BEE status. The draft construction codes have done away with this and require a verification agency or The Construction Sector Council to confirm their BEE status.

Exempted Micro Enterprises (EMEs) will also vary between Level 5 and Level 1, with white-owned companies allowed to implement skills development and enterprise and supplier development to increase their level.

Interestingly, the sector enforces compliance with the Employment Equity (EE) Act. Clause 3.7.2 states that companies who are designated employers must submit their EE returns to the Department of Labour. If they have not been submitted the company will not be an empowering supplier.

BEE advisory firm, EconoBEE's CEO, Lianne Levenstein says that Thabo Masombuka, CEO of the Construction Sector Council, recently launched the draft Construction Sector Codes for public comment.



“The empowering supplier status has been an extremely important addition to the Amended Codes, meaning that if your company is not an empowering supplier, your BEE certificate is effectively meaningless,” says Levenstein.

“The Department of Labour, who is the custodian of the Employment Equity Act, can audit your company and issue hefty fines for non-compliance.” She adds that choosing

the appropriate competitive B-BBEE strategy is a sophisticated endeavour requiring knowledge and familiarity with the minute intricacies of the B-BBEE Act and Codes of Good practice. The lack of expertise in many companies countrywide hampers the successful implementation of the B-BBEE Codes in their operations. EconoBEE's offers a high quality streamlined step-by-step approach to becoming BEE compliant. ■

## Competition Commission's 10<sup>th</sup> annual conference

The conference will be held on October 6<sup>th</sup> and 7<sup>th</sup> at Smuts Hall, University of Cape Town. The 2016 conference theme is ‘The role of Competition Policy on Economic Growth’.

As part of the debates on the topic, the conference will also take stock of the effectiveness of competition enforcement in South Africa to date.

Tackling the effectiveness of Competition Enforcement's panel includes: Michael Katz, the National Housing Finance Corporation's Chairperson and Chairman of ENSAfrica; David Lewis, Executive Director of Corruption Watch; the inimitable Dennis Davis, Judge President, Competition Appeal Court, South Africa; Menzi Simelane, Advocate and

The Competition Commission, The Competition Tribunal and University of Cape Town will present the 10<sup>th</sup> Annual Conference on Competition Law, Economics and Policy.

advisor to the Minister of Human Settlements; and David Unterhalter from Group 621.

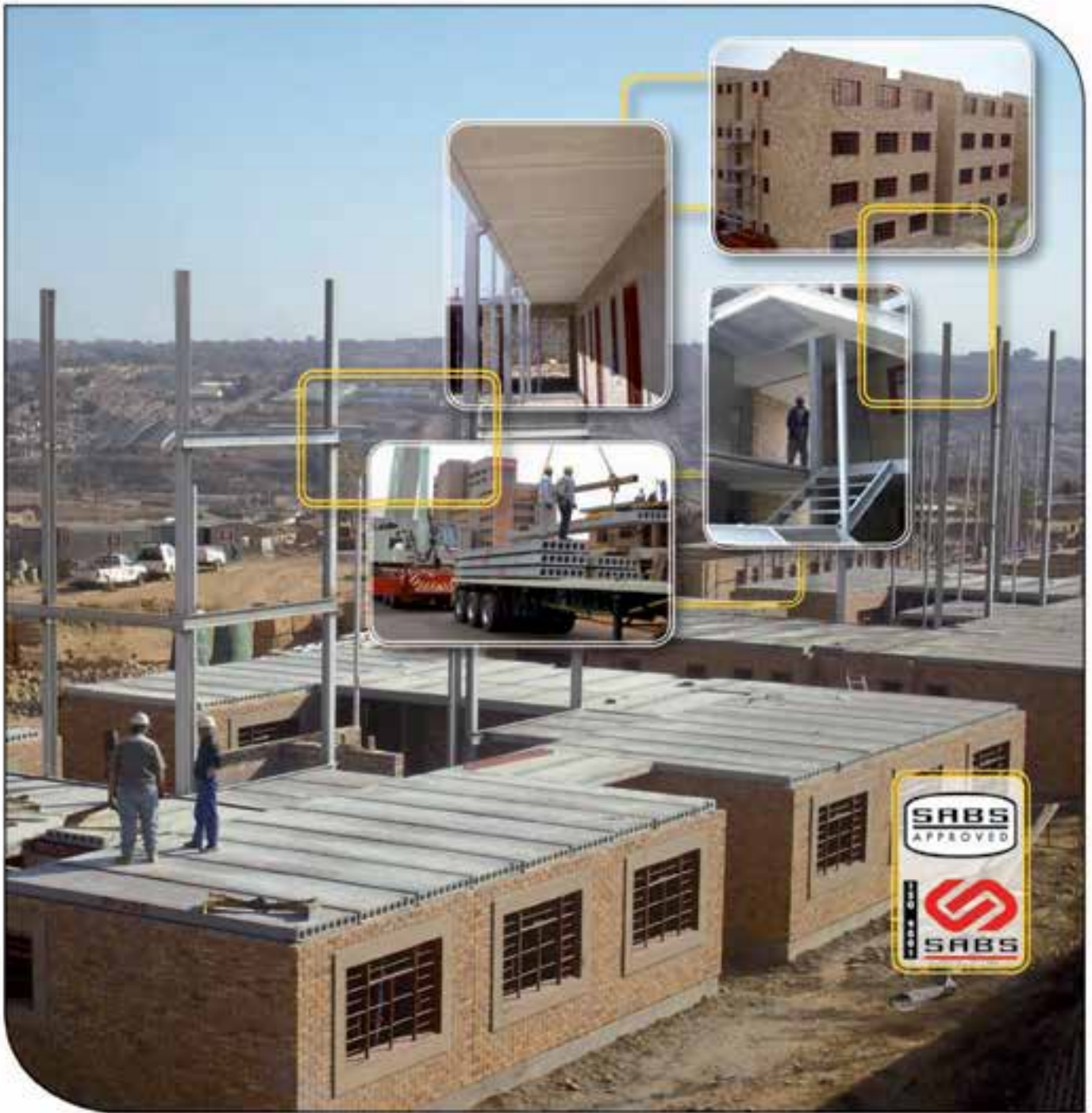
The Competition Conference will be preceded by a joint workshop on October 5<sup>th</sup> 2016, organised by the Competition Commission, University of Cape Town and Competition and Regulation European Summer School, where leading international scholars will facilitate training on various aspects of competition law and economics.

The objective of this conference is to bring together renowned

specialists in competition law and economics to debate relevant issues. The conference is targeted at academics and practitioners (including competition agency officials, competition lawyers and competition economic consultants) with a keen interest in competition enforcement.

The leading idea is to inform competition policy and to create the optimal conditions for a stimulating exchange of views.

For further information contact Lydia Molefe on +27 12 394 3493 or email [LydiaM@compcom.co.za](mailto:LydiaM@compcom.co.za) ■



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# Call for raise in paint import duties



The government needs to take urgent steps to protect the South African paint industry from the unacceptably high level of paint imports flooding the local market.

According to Deryck Spence, Executive Director of the SA Paint Manufacturing Association (SAPMA), for the past two decades almost 20 million litres per year. “Last year, almost R1,2 billion was imported representing 10% of the South African market. Around 65% of the paint was supplied from Europe. Customs and Trade Agreements with the EU and the USA incurs 10% import duties. There are strong indications that India will target South Africa, as a lucrative export.”

Spence said the import dumping situation, if not controlled or restricted, could have major negative repercussions for the SA coatings sector. “Not the least of these is job losses – something a country such as ours with its soaring unemployment, can ill afford. Then there is the question of quality. Although the paint now imported from Europe and the USA are generally of an acceptable standard, there is no guarantee that the same could be said of future imports from new sources.”

SAPMA believes that the current 10% import duties applying to all imported paints (other than the duty-free paints from Europe) should be raised to at least 25% to level the playing field for the SA coatings sector and to restrict rampant dumping of paints.

The SAPMA Technical Committee recently raised the matter with the International Trade Administration Commission (ITAC) of South Africa.

Nkulana Phenya of ITAC told SAPMA that ITAC usually raises customs duties to afford relief for domestic producers facing threatening import pressures. But for his committee to protect the local coatings market from foreign imports - and particularly dumping - any ITAC investigation into the increase of tariffs would have to be generated by a specific manufacturer and not just from an association body such as SAPMA.

“SAPMA intends acting on the ITAC directive and will now approach a suitable producer member to urgently lodge an appeal for ITAC to investigate the matter of raising import duties as soon as possible,” concluded Spence. ■

## MBSA elects new President

Bafikile Bonke Simelane has been elected as the first black president of Master Builders South Africa (MBSA). His appointment was announced at the annual MBSA Congress in Durban. Simelane says, “It is a significant personal and professional milestone for me, but more importantly it is a clear and unequivocal indication that MBSA is serious about transformation at all levels. I hope that my election advances ‘meritocracy’, dispels some negative perceptions of the industry and breaks down barriers preventing black professionals and executives from being elected into such leadership positions.”

He hopes that his appointment will serve as an inspiration to aspirant black students, graduates and professionals that this is also possible for them. “They need to know that all you have to do is dream, believe in yourself, be resilient and surround yourself with people who affirm and validate you irrespective

of your socio-economic profile or circumstances. I hope this milestone can find resonance amongst young black youths, both male and female, from all of South Africa’s townships so that they can be attracted to a career in construction management in particular and the built environment in general. I also would like them to believe that they too can achieve whatever it is they set their minds to with hard work, dedication and commitment. As one of the speakers at our Congress said, overnight success takes about 20 years.”

Simelane started his career at Murray and Roberts in 1995 followed by a short stint at Abcon Construction. In 2001, he joined Development & Engineering Consultants (DEC) as a Project Manager and eventually become a Director. In 2009 he was appointed as a Director of Focus Project Management. Today he is the Group Corporate Services Director for the NMC Construction Group which he joined in 2012.



Bafikile Bonke Simelane

Simelane is a member of the Construction Management Development Committee of the South African Council for the Project and Construction Management Professions (SACPCMP) and chairs the Registration and Education Committee of the SACPCMP. He is also active within other industry bodies such as the Chartered Institute of Building (CIOB) and served as the Vice-President of the Association of Construction Project Managers (ACPM). ■



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# Building contracts

According to Uwe Putlitz, CEO of the Joint Building Contracts Committee (JBCC), South Africa's leading organisation that protect the rights of all parties involved in building contracts, there is alarming lack of awareness among smaller, and emerging building contractors.

"Many emerging contractors lack communication and administrative skills in addition to limited technical skills and the use of labour-saving equipment. Subcontractors also are often abused by main contractors when it comes to payments, which are often late or only partially paid.

This kind of practice impacts on the survival for the smaller builder in a struggling economy. This is exacerbated because far too few subcontractors or emerging contractors work on a project without having a formally ratified contract," Putlitz stated.

"Then, to make matters even worse, many subcontractors or emerging contractors tend to read whatever form of contract they hold only when a crisis happens on site."

Putlitz says that JBCC has already simplified the use of language and style of JBCC Agreements, "Basically, if a JBCC Agreement is in place, contractors as well as the principal agent involved in a building project merely have to follow the content of the Agreement's clauses within the stipulated time limits to avoid disputes. But far too many of these parties regard contract administration as time-consuming and consider compliance with statutory and contractual provisions as a nuisance and threat to their company's productiv-

ity. It is so important that contractual obligations are recorded and met such as inspections on site, record keeping, and issuing of instructions and various certificates."

Almost 100 000 people are involved with building contracts in the South African construction sector every year – but the majority know very little of the contracts in common use, or the legal procedures.



ity. It is so important that contractual obligations are recorded and met such as inspections on site, record keeping, and issuing of instructions and various certificates."

Putlitz says, "Although JBCC Agreements form a binding contract between all the parties involved on a building project, far too many employers - after the Agreement has been signed - make changes that are unfair to contractors.

This leads to the contractors in turn imposing totally unfair performance and payment conditions on subcontractors. At training seminars, we concentrate on the unintended, but also inevitable, consequences of

such changes to the original Agreement. The employer may think the change to an Agreement is minor but often the repercussions are far-reaching for the rest of the construction team. The disputes and stress that follows late changes to Agreements is disruptive and could be avoided if the provisions in the contract are followed."

JBCC provides training seminars twice annually in Cape Town, Johannesburg and Durban and in-house seminars for contractors, subcontractors and property developers.

For further information contact +27 11 086 100 5222 or visit [info@jbcc.co.za](mailto:info@jbcc.co.za) ■



## Primo multi-sander

Slim, compact and lightweight, the Bosch PSM Primo multi-sander is the ideal tool for sanding corners, edges and smaller to medium-sized surfaces.

Bosch Brand Manager Ninet Bosman says that the PSM Primo offers a compact, attractive and trendily-designed multi-sander. It is 30% lighter than conventional sanders, weighing only 600 grams. The long, narrow tip is able to reach even the tightest corner. Equipped with a 50 W motor, the power-to-weight ratio is impressive. Side handle recesses make it easy to handle.

"Once the tool has been set up, press the red button and start sanding. The sanding paper grips firmly to the sanding plate thanks to the micro Velcro-type fastening system. However, it can also be comfortably detached and reattached. Each sanding sheet offers two spare tips.

The long, flat tip of the iron-shaped sanding plate allows users to sand corners and edges on smaller objects, and in particular allows them to reach tight, hard-to-reach spots. The Bosch micro-filter system with dust extraction connection keeps the area clean during the job. ■

## Benefits of dry mortar



The AfriSam Dry Mortar solution offers contractors a number of benefits in addition to time and cost savings.

Using a pre-blended mortar mix will ensure optimum product integrity and subsequently quality construction on a project.

Manual blending of a mortar is labour intensive and time consuming, and requires careful attention to ensure the correct ratios of sand and cement are used. Incorrect blending or mixing will certainly affect the final product and in the case of plaster result in cracking.

This Class II mortar has been specially engineered as a dual purpose mix that can be used for both mortar and plaster work. It will achieve a minimum strength of 5 MPa at 28 days.

SANS 50197 compliant AfriSam All Purpose Cement was selected as this cement offers a spectrum of functional attributes that provide customers with guaranteed quality performance in concrete, mortar and plaster applications. This advanced composite cement

contains milled clinker as well as advanced mineral components and additives, and is the ideal component for the dry mortar product.

The innovative dry mortar solution is produced in partnership with Stick a Tile at the Meyerton plant. Sand, quarried on the site, is dried to the requisite level, and blended with AfriSam's All Purpose Cement in a controlled environment to produce this quality mix.

The fully automated plant produces 400 ton per day and batch printouts are produced to verify consistency and ensure optimum quality. Samples of the dry mortar product are taken at regular intervals and tested at AfriSam's Centre of Product Excellence to ensure compliance with the required specifications.

The product is supplied in 10 ton or 20 ton silos offering flexibility to meet customers project requirements. ■

## Blade dust shrouds

Leading specialist in the manufacture, assembly and sale of diamond tools and equipment, Diamond Products, recently launched a new range of blade dust shrouds.

There are a multitude of benefits to working in a dustless atmosphere and controlling dust is important as the equipment being used to cut and grind creates airborne dust particles, which can create health issues.

Diamond products blade dust shrouds can combat this, "We already offer a range of dustless

options such as dust collectors, wet and dry vacuums and dust shrouds," says Brian Clark, Director of Diamond Products.

"The benefits are that the dust being created will be contained within the dust shroud, as well as offer a better line of sight when trying to achieve a straight cut. These are for dustless cutting, such as joint cutting, and are ideally suited for the Makita 115 mm, 125 mm and 230 mm angel grinders," concludes Clark.

For further information visit [www.diamondpc.co.za](http://www.diamondpc.co.za) ■



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## PipesX Conference

**S**APPMA Chief Executive Officer, Jan Venter, “The plastic pipe industry is arguably one of the most important industries in South Africa’s infrastructure as water distribution, waste disposal, irrigation, telecommunications and a myriad of other services rely on pipe infrastructures to work effectively.

SAPPMA has proven that we are heavily invested in the well-being of the local plastics pipe industry – especially where standards and technical specifications are concerned. We have already exposed more than 1 500 delegates to close to 200 technical papers since the first conference. This year 17 experts shared their expertise with delegates from Australia, Spain, Germany and the Middle East,” said Venter.

The Southern African Plastic Pipe Manufacturers Association (SAPPMA) recently hosted the PIPES X Conference at the Byte Conference Centre in Midrand.

Keynote speakers included Corné Krige, former Springbok rugby captain who led the team to the World Cup in 2003 – who shared some life lessons on effective leadership in sport and business, this was followed by Ralph Triebel of LHA Management Consultants, who gave an overview of the trends in the local pipe market.

Many of the papers presented reflected the problems facing the industry such as the accreditation of national standards. Venter explains, “Quality in general and long-term product quality, in particular, is one of our cornerstones. Considering that

approximately 40 000 km of plastic pipe is manufactured annually in South Africa, we are doing everything to prevent a general deterioration of plastic piping systems in our country. SAPPMA has been at the forefront of this situation and is probably furthers down the road to facilitate alternative mechanisms.”

Venter concludes, “There are many exciting, new markets and opportunities emerging for the plastic pipe industry. We have an ever-increasing role to play. We need to make sure that we are part of the solution – not part of the problem.” ■

## Commission prohibits asphalt merger

**T**he Competition Commission has prohibited an intermediate merger between Much Asphalt acquiring five fixed asphalt plants – Roadspan Plants from Roadspan Surfaces. Following the merger, Much Asphalt will wholly own the Roadspan Plants. The Commission found that the proposed merger is likely to substantially prevent or lessen competition in the markets for the supply of asphalt products.

Much Asphalt manufactures and supplies hot and cold mix asphalt products to the commercial sector. It also supplies asphalt products for use or application on urban streets, freeways, runways, race tracks, public sidewalks, bus lanes and certain harbour specific applications. The company is currently only active in the manufacture of asphalt and does

not offer services. The five fixed Roadspan Plants located in Kimberley, Stilfontein, Welkom, Nelspruit and Daben produce hot and limited cold mix asphalt.

The Commission found that the merged entity will hold a dominant position in each of the affected markets as a result of the proposed merger, and will not face strong competition in these markets. The Commission also found that it is not easy for new firms to enter and compete effectively in the affected markets because of capital, regulatory and economies of scale requirements. Furthermore, customers of the merging parties do not have the ability to negotiate for lower prices as there are few alternative suppliers of asphalt products.

The merging parties did not pro-

pose any remedies to address the Commission’s concerns nor have they advanced any cogent efficiencies, procompetitive gains or public interest benefits that could outweigh the competition concerns. The Commission has prohibited the proposed merger.

“Asphalt is one of the critical products in infrastructure development projects, particularly road construction. The merger would have created a market structure in the supply of asphalt that is highly concentrated, leaving the merged entity the dominant supplier in key geographic locations in South Africa. Ultimately, customers of asphalt in road construction would have had to bear the high prices had the merger been approved,” says Acting Deputy Commissioner, Hardin Ratshisusu. ■

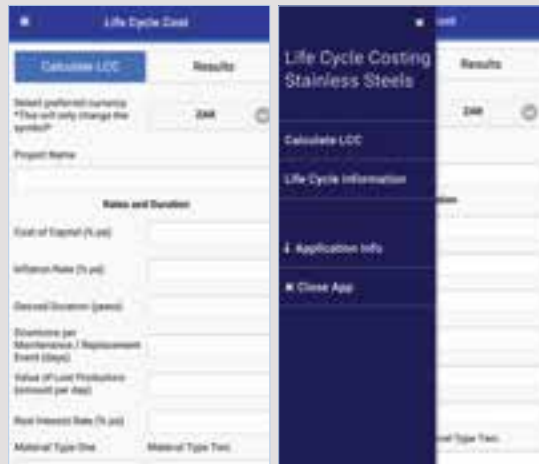


# New app lifts lid on stainless steel LCC

In the short term, this may be the case but a new world-first App from the Southern Africa Stainless Steel Development Association (sassda) is set to lift the lid on the bigger picture - namely stainless steel's ability to ensure far lower overall Life Cycle Costs (LCC) in the long term.

The benefit of the newly launched App allows for real-time calculation of the LCC of stainless steel via an easy to use, pre-programmed calculator. This requires the entry of key top-line data, followed by the simple click on 'Calculate', which in turn generates a breakdown of the relevant costs and the ability to e-mail this to the relevant recipients. The App is now available on the Google Play (Android) Store and will be available in the Apple iStore by the end of the year.

Sassda Executive Director John Tarboton explains; "The App was created to assist engineers to calculate total LCC using the standard accountancy principle of discounted cash flow, so that total costs incurred during a life cycle period are reduced to present day values. This allows a realistic comparison to be made of the options available. In terms of material selection, the APP also enables potential long-term benefits to be assessed against short-term



John Tarboton

One of the biggest obstacles in specifying stainless steel is the misconception that it's more expensive in comparison to other initially cheaper options.

expediency." He adds that months have been spent working out the correct formulas that now form the backend of the app, which has removed the burden of this type of time-consuming calculation for the end user.

"This will prove invaluable for professionals in the field, wanting to bypass the complicated process normally associated with this type of calculation that most professionals are unfamiliar with; unless they also

have an accountancy qualification!

"In this way we are also hoping to educate the market on the inherent benefits of stainless steel, which include minimal maintenance, a minimum 60-year lifespan and significant 'green' benefits," concludes Tarboton.

The sassda Life Cycle Cost calculator is also available via the following link: <http://sassda.co.za/the-life-cycle-costing-of-stainless-steel-for-non-android-phone-owners>. ■

## Aurecon's new CIO



Carl Duckinson

Carl Duckinson has recently been appointed as Chief Information Officer at the global engineering and advisory company,

Aurecon. Duckinson will lead the firm's IT team globally and continue to drive digital and technology transformation. According to Andrew Muller, Aurecon's Global Chief Financial Officer, "Information technology is a key enabler for Aurecon as it is fundamental to the successful execution of our business strategy, particularly in relation to Aurecon's commitment to global collaboration and work-sharing."

Muller added that Duckinson's proven track record as a senior IT executive in large and complex organisations, most notably his skills in mapping technology strategy to business strategy and his strong track record of developing high performing teams, was important for Aurecon.

Duckinson recently led the Toll Group's technology transformation, which included a period as Toll's Interim CIO. Prior to that, he was CIO of

Australia's largest independent gold miner, Newcrest Mining, for seven years. Duckinson said, "Aurecon is well advanced in understanding what digital means and how digital influences the future of engineering."

The company is eager to harness the opportunities that digital disruption presents."

The company's strong focus on digital innovation is evidenced by the fact that Aurecon has invested in a Chief Innovation Officer, Chief Digital Officer and Chief Information Officer at executive level. "It is rare to see these three roles at these senior levels in an organisation.

My role will be to continue to support strong cross-border collaboration to ensure that the business is able to respond to rapid change within the energy and resources, built environment and infrastructure industries," said Duckinson. ■

# Quick efficient and cost effective

Global brand, Selcrete, is making inroads in South Africa's infrastructure and residential sectors. The Agrément certified innovative building system offers a quality construction solution that reduces cost and environmental impact.

**N**orwegian engineer, J Olav Selvaag, developed the Selcrete system as a solution for quality, energy efficient low cost housing. Selcrete has since proven successful in the Scandinavian construction industry and now for the first time, this leading solution is being made available in Africa.

Selcrete recently completed Noluthandoa, an early childhood development project in Khayelitsha, which impressed the City of Cape Town Mayoral Committee member for Social Development and Early Childhood Development, Suzette Little says, "Establishments like these give our children a better future. We are all born with a God given talent. Opportunities are not reserved for certain people or certain status groups but for all of us."

Selcrete CEO, Graeme Horwood says that the day care centre accommodates 265 children from two months old to six year old. "Phase



1 included building a small utility hall, an administration block and classrooms using Selcrete blocks that are made of cement, expanded polystyrene beads, water and a binding agent. The pilot project includes 12 new structures."

The blocks have a compressive strength of 7 MPa and a dry density between 250 kg/m<sup>3</sup> to 600 kg/m<sup>3</sup>.

These blocks are produced in moulds on site or factor with sizes of 590 x 190 x 150 mm for internal walls and 590 x 190 x 190 mm for external walls.

The blocks are laid in conventional bonding method with mortar mixed with Silkalite as a binding agent. A 20 mm tremmet Polyvinyl Chloride mesh is applied to the external walls and finished off with plaster on both sides and painted. All services are conventional and electrical conduits and plumbing pipes are either surface

mounted or grouted in to the walls.

Horwood adds, "Projects can be realised much faster, in less than half the time it takes for conventional building systems. This could translate to a saving of 25%. It is an attractive solution for budget-conscious projects like Noluthando, or low-cost housing, where quality and affordability are important factors."

Horwood explains the benefits of the innovative building technology, "Compared to brick and mortar the system offers greater insulation and fire resistant properties. The product was developed in Norway. If it works there, it can work everywhere," citing South Africa's wet cold climate and hot summers. ■

## Bridging the gap

**T**he world's first safe and flexible walkway bridge prototype, developed by local engineering solutions organisation, SureGO!, was one of the main attractions at the recent Electra Mining Africa 2016 exhibition at Nasrec, Johannesburg.

Thousands of visitors made their way to the SureGO! stand to take a closer look at the intricacies of the flexible walkway bridge. The pontoons or floats are fabricated from

HDPE, which is virtually indestructible and corrosion proof. The walkway structure is fabricated from mild steel and fully hot dipped galvanized to ensure no corrosion on the structures. The handrail system is developed using a combination of galvanized steel with polyurethane.

Engineering company, SureGO! aims to provide safe and flexible temporary or permanent walkways and bridges specially designed to be used on water or shifting surfaces. Continuous overhead protection and roofing can also be provided to protect users from overhead dangers such as anchor cables as well as the elements. All walkways and bridges can be customised to suit the client's specific requirements. ■



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