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Sisulu's Catalytic Projects

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ED'S NOTES

Catalytic Projects.... will catalyse the housing sector

It has been an interesting and exciting month for the housing sector with the Minister of Human Settlements, Lindiwe Sisulu announcing that government has identified 77 Catalytic Projects that will roll out 1,2 million housing opportunities.

This bodes well for residential developers, builders, contractors and supply chain manufacturers across this massive market segment. The reshuffling of government Development Finance Institutions and a new Housing Finance Corporation being established, will galvanise development and delivery.

With all the sector key stakeholders keen to get going after the abysmal dip in housing delivery, it is all systems go with Sisulu at the helm.

Director General, Thabane Zulu as Acting CEO of the Housing Development Agency (HDA) has been tasked with overseeing the massive roll out. The agency's new expanded mandate means a one-stop shop for developers and contractors providing services to the National Department of Human Settlements. And, the Minister has promised that her team are willing and able to assist developers.

On that note, the South African Affordable Residential Developers Association is eager to deliver affordable housing and FLISP subsidy units to assist Sisulu in achieving government's 1,5 million housing target by 2018. The association represents 80% of housing developers in Gauteng and is gaining ground in other provinces.

Pierre Venter, Banking Association of South Africa, took the opportunity in his presentation at the National Department of Human Settlements Developers and Contractors Workshop to discuss the impact on the sector since its heyday in 2010. Some of the products that were supposed to improve delivery never really took off. This includes the Finance Linked Individual Subsidy Programme aimed at assisting low income earners to qualify for home loans, or the Mortgage Default Insurance scheme that would assist banks to provide loans in this niche sector and government's insurance scheme would pay out in the event of defaults.

There is a willing and able banking sector ready and poised to do what they do best – lend funds and with South Africans passionate about owning their own homes, there will be no shortage of applicants.

Most of the developers who attended the Minister's workshop were at the 7th annual International Housing Solutions Affordable Housing Conference. The event held at the Johannesburg Country Club had an impressive line-up of guest speakers who dealt with the trials and tribulations facing the sector. Global equity funder I H S partnered with the developers' favourite banker, Manie Annandale from Nedbank Affordable Housing, who sponsored the event.

Motivational speaker Vusi Thembekwayo started off his presentation saying, 'What got you here…. won't get you there'. His snippets about companies who thought it was business as usual bit the dust and products that were once leaders in technology failed to broaden their horizons and find new ways to operate. On that note we continue to listen to your comments and suggestions.

Enjoy the read!

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HOUSING
in Southern Africa

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R170 million for Voortrekker Road

The City of Cape Town has allocated R170 million in the current financial year for infrastructure projects in the Voortrekker Road Corridor.

This forms part of the City's focused efforts to rejuvenate this important area and to unlock opportunities. The Integrated Cities Development Grant will be used to unlock employment opportunities and educational facilities for those living within the Voortrekker Road Corridor (VRC). This also includes affordable, well located housing for nurses, teachers and government employees.

Other projects include R15 million for the Water and Sanitation Northern Region Sludge Facility, R36 million for the Plattekloof Substation, R11,5 million for the Integrated Rapid Transport Control Centre, R25 million for the Bellville Wastewater Treatment Works Facility and R5,9 million for the Belhar/Pentech housing scheme.

The Integrated City Development Grant provides the eight metropolitan municipalities with incentives to improve spatial development considerations in their planning and job creation. These embedded infrastructure projects will be well supported. In addition, the Greater Tygerberg Partnership is key in facilitating relationships between small and medium businesses and the public sector.

"Together with our partners, we are doing everything we can to create an enabling environment to revitalise the urban infrastructure in this area and to attract the large scale private sector investment that is required. The country's low growth rate and high unemployment rate means that local authorities must step up to design and to direct a more sustainable economic vision for residents," said Mayoral Committee Member for Energy, Environmental and Spatial Planning, Johan van der Merwe.

The grant aims to assist cities to become more efficient, equitable and sustainable. To qualify for this funding, cities are required to identify integration zones in which the funds will be spent.

The Metro South-East and the VRC have been identified and nominated in Cape Town. The City has devised a Strategy and Investment Plan, which will undergo continual reviews and updates, to prioritise and direct this funding grant. "We believe that strategic public spending will encourage further development and investment from the private sector. It is not the role of government to attempt to manipulate market forces, or to assume the position of the labour force within the free market; instead it is to create policy and service delivery which encourages partnerships. We are actively canvasing private sector support as part of our Strategy and Investment Plan," said van der Merwe. ■

Financial help for tenants

The City of Cape Town has budgeted approximately R35 million in the current financial year (2015/16) to assist thousands of tenants who reside in city-owned properties and earn less than R3 200 per month. The tenants of city rental and mortgage loan schemes have already applied for indigent grants.

"When arrears are written off, tenants enter into payment arrangements with the City. They pay back only what they can afford," says City's Mayoral Committee Member for Human Settlements, Benedicta van Minnen.

"The culture of payment is therefore encouraged and at the same time, the City is ensuring that some revenue is received which is then used for the maintenance of its rental stock," says van Minnen.

The City of Cape Town is the largest landlord in South Africa and manages approximately 43 000 rental apartments and more than 19 000 sectional scheme units. While providing accommodation for thousands of residents the city also has a responsibility to maintain and upgrade rental stock. "We rely on rental collections and we know that instilling a culture of payment will ensure a sustainable future for all residents,' said van Minnen. ■

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MyCiTi carries over 31 million passengers

Since the City of Cape Town launched the MyCiTi bus routes in the inner-city, the service has provided transport for 31,1 million passengers.

According to Councillor Brett Herron, the City's Mayoral Committee Member, Transport for Cape Town, "When we rolled out the first routes in the run-up to the 2010 FIFA World Cup, we never imagined that the MyCiTi service would grow at such a pace. We are now transporting nearly 48 000 passengers every weekday. On average, the MyCiTi buses cover a distance of over 1 270 000 kilometres per month and have become an integral part of Cape Town."

The City's transport authority has steadily rolled out routes within the City Bowl and also to destinations further afield, linking areas such as Hout Bay, Imizamo Yethu, Hangberg, Atlantis, Table View, Dunoon, Century City, the Cape Town International Airport and parts of Mitchells Plain and Khayelitsha with Cape Town's central business district.

The MyCiTi service consists of 31 routes, 36 stations, 500 bus stops, 466 bus drivers and more than 215 buses operating during peak hours.

"The MyCiTi service is part of the City's broader strategy of investing in infrastructure that will help drive economic growth, development and inclusion. Affordable, safe and efficient public transport networks are also a critical element in breaking down apartheid-era spatial planning, and as such we will focus on those communities who live far away from job opportunities. The communities from Mitchells Plain and Khayelitsha have welcomed the N2 Express ring road service," said Herron. The uptake of the N2 Express service is steadily increasing, with a total number of 84 873 passenger journeys recorded in July 2015 – an increase of nearly 4% in comparison with the previous month.

As far as the whole service is concerned, a total of 1 325 702 passenger journeys were recorded on MyCiTi routes in July 2015. This is an increase of 146 385 passengers or 12,4% in comparison with June 2015. Despite the roll-out of new routes and the increase in passenger numbers, the buses along the trunk routes arrive on time 89% of the time. ■

Lacklustre economy

Estate agents report that the vast majority of South Africans genuinely aspire to become home owners, in reality, less than 35% are likely to realise their ambitions within the next 10 years.

Tony Clarke, Managing Director of the Rawson Property Group, says a great many South Africans in the lower income and middle class categories have found themselves in a real financial predicament, since the 2008/2010 downturn.

Recapping on South Africa's economic performance since early 2000, Clarke pointed out that a US$1 equalled R6,94. Today, the exchange rate stands at R11,90 and is likely to go through the R12 mark. The Rand's status against the Euro and the £ is equally weak.

In the same period (i.e. since 2000) Eskom charges have risen year-on-year from 5,5% to a peak (in 2011) of 25,8% - and now stands close to 12%, while fuel costs in that time have quadrupled.

In circumstances like this said Clarke, it is not surprising that South African household debt is still equal to over 70% of the GDP. More than half of South Africans applying for mortgage bonds are automatically disqualified, due to credit impairments.

"Looking at the economy right now, it is very difficult to predict a significant upturn within the next three or four years. We can only hope that this comes about in the fairly near rather than the distant future." said Clarke. ■

New EPWP job seeker policy

The City of Cape Town is revising its job seeker policy for the Expanded Public Works Programme (EPWP). The policy guides the appointment of unemployed job seekers for temporary work opportunities on City-led community-based projects and programmes.

The existing policy covers aspects such as who is eligible for EPWP work opportunities the responsibilities of the department or service provider, who is appointing the job seekers.

The revision of the policy aims to revisit policy provisions that may no longer be relevant and reinforce current principles and methodology for recruitment and realign governance issues with the City's Integrated Development Plan.

"Our implementation of the Expanded Public Works Programme ranks as one of the best in the country, but there is always room for improvement. That is why we are revising the policy. This will ensure that we continue serving the best interests of the hundreds of thousands of job seekers registered on our database," said City Mayoral Committee Member for Social Development and Early Childhood Development, Suzette Little.

Some of the key aspects that the revised policy tackles is the re-employment of workers and regulating the exclusion period for job seekers who have had work opportunities through the programme. This also excludes councillors from involvement in the recruitment process. The database is available to government departments and the private sector. "Employers will have access to potential employees who have already been screened for basics such as skill level and identity checks. The job seekers' prospects for contract or even full-time employment will therefore improve," added Little.

The City has a proven track record in terms of EPWP implementation. The EPWP stipend is based on a minimum of R75 to R100 per day.

The City of Cape Town is the first municipality to introduce an EPWP induction booklet with standard operating procedures and internal contract management and payroll processes for the sector. ■

Financials in sectionals

Financial problems in sectional title schemes should be dealt with swiftly says Mandi Hanekom of Propell, a sectional title finance company.

Budgeting, planning and cash flow mismatches and unforeseen repairs often cause financial problems in sectional title schemes.

However, if the managing agent or the trustees have contingency plans in place, there is no need for the sectional title scheme to have any financial difficulties.

Hanekom says, "The other options include having a reserve fund in place, raising a special levy or apply for credit. While a reserve fund is useful, there are pros and cons. The owners of the scheme may not agree to pay a higher than necessary levy each month, purely to bolster the development's reserve funds. Having a reserve fund does put the scheme in a strong negotiating position with service providers and the ability to draw funds immediately. It also helps the managing agent or the trustees deal with problems swiftly, but there are risks here of misuse and if an owner sells their unit, all the money that the owner paid into the reserve fund is not refunded."

Raising a special levy is another option when there are large projects to be undertaken, but this too, has its problems. According to Hanekom, the collection of the special levy is onerous as many owners either will not have the funds readily available (as in fixed income earners such as pensioners or those struggling financially), or they will be resentful of having to pay a large amount upfront. The benefit of a special levy is that only the correct amount needed is collected from the owners, and there is no surplus paid in unnecessarily.

The last resort is usually to apply for credit, and this solution can actually be the best for the sectional title scheme. The downside to this option however is that there will be interest and fees charged to the scheme but this option can also be flexible and put the scheme in a strong negotiating position with the service provider. This option makes a lump sum available and ready to be paid over for services rendered.

This system helps fixed income earners budget for a smaller amount added to their levy each month rather than one large lump sum, as in the special levy.

Hanekom concludes that a sectional title finance company can provide the funding to body corporates who qualify for finance and can step in and help maintain the financial health of a scheme.

"The most important criteria that will be checked are the property values and the percentage of non-payers in the scheme. If the checks show that the body corporate does qualify, we offer a finance facility for any eventuality. It is easy to set up, is flexible and only incur costs when they are used. The facilities can remain in place indefinitely and the managing agent is able to do his job properly, which ultimately is to ensure that the scheme is run efficiently." ■

Database for suppliers

The newly launched Central Supplier Database (CSD) will improve the way suppliers conduct business with government.

Speaking at the launch of the CSD at the Industrial Development Zone (IDZ) in East London, in the Eastern Cape, Minister of Finance Nhlanhla Nene said that the database serves as the source of all supplier information for all spheres of government.

The purpose of centralising government's supplier database is to reduce duplication of effort and cost for the supplier and government, while enabling the electronic procurement process. Suppliers can register on www.csd.gov.za

Chief Director: Supply Chain Management ICT in the Office of the Chief Procurement Officer at National Treasury, Schalk Human, said that the CSD is an intervention to reduce the administration burden on business.

Among the benefits of being registered on the database is that suppliers will only be required to register once when they do business with government, and will not be required to submit physical tax clearance and business registration certificates to government departments. Suppliers in rural areas who do not always have access to computers will be assisted through the Thusong Service Centres, Small Enterprise Development Agency (SEDA) offices and the Post Office. ■

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Opportunities for savvy developers

Significant changes in technology, workplace practices and production requirements have all resulted in an increasing number of commercial and industrial buildings in South Africa becoming obsolete.

According to Ken Reynolds, Regional Executive in Gauteng for Property Finance at Nedbank Corporate and Investment Banking (NCIB), the result of this is that more and more developers and building owners are realising the massive redevelopment potential. Savvy investors are buying these structures.

"There are a number of factors that contribute to buildings becoming obsolete," says Reynolds.

"These include an increased reliance on IT in the workplace, which has made it critical that buildings are equipped to deliver the latest in technology requirements. The same is true for air-conditioning systems which have evolved over the years. Many older buildings are simply not equipped for these needs and therefore lose their appeal and relevance."

He says that another trend in modern day businesses that may put buildings at risk of obsolescence, involves the shift from closed to open plan work spaces.

"In the past, an average office building would have allocated up to 30m^2 per staff member. With the move to open plan workspaces, this allocation has reduced significantly to about 10m^2 per employee, with this increase in employee numbers, it has created additional challenges for older buildings in the form of insufficient common areas and parking spaces. These issues are particularly prevalent in many of the country's Central Business Districts, and have contributed to many companies moving their head-offices more suitable venues."

Reynolds adds that obsolete buildings are not limited to office space. In the industrial building segment, structures that are comprised of harmful materials and low clearances have become undesirable.

It is also increasingly prevalent to separate employees from potentially harmful materials used in production processes, which was not necessarily the case when many older factory structures were designed. In addition, the change in industrial activity from heavy to light engineering, as well as greater demand for warehousing and distribution, has seen a shift in the type of facility that companies now require.

He says that while redevelopment presents significant opportunities for developers and owners, it is critical that they conduct thorough feasibility studies and market research before deciding on what to do with an existing building that has become obsolete.

A key factor is understanding the demand for various types of properties in the area in which the building is situated. For example, due to the change in the nature of the demand in Braamfontein, Johannesburg, from commercial to residential, many office buildings in the area have been refurbished into residential accommodation.

Another question many developers face is whether to renovate or refurbish an existing building, or to rather knock it down and start again.

"Brownfields projects, which involve refurbishing existing buildings, have the advantage of already having all the facilities in place such as water and electricity, as well as approval for services and zoning," says Reynolds. However, he says that in some cases where the floor area ratio or clearance heights are unsuitable for the purposes for which the building will be transformed, it may be better to start from scratch.

"With this in mind, the biggest mistake developers make is underestimating the problems that they are going to find once redevelopment starts," he says, "therefore, should the decision be to refurbish a building following a thorough feasibility study, additional contingency costs need to be factored in especially for unforeseen challenges such as elevators that require replacement, massive plumbing, or electrical work that needs to be conducted," says Reynolds. ■

Coega Ridge development

The developers have been given the go ahead to break ground on the multi billion rand Coega Ridge fully integrated housing estate between Motherwell and Coega near Port Elizabeth. The mammoth development will address the Eastern Cape's housing backlog. Jordan Mann Executive Director of Nu-Way, the developers of Coega Ridge, announced that the project was on track to break ground in 2018 with the backing of the Coega Development Corporation (CDC).

"This project will alleviate Nelson Mandela Bay's housing backlog of 87 000 units by almost half, through the construction of 40 000 housing units," said Mann.

"Not only will Coega Ridge help to make a substantial dent in the metro's housing shortage, but as the Coega Industrial Development Zone (IDZ) attracts more and more businesses, Nu-Way will be able to roll out housing opportunities in order to accommodate employees working in the area." Mann anticipates providing various housing typologies across the residential spectrum.

The catalytic project will provide 5 000 employment opportunities per month during the construction phase and the entire project will cost R20 billion. Work is due to commence in 2018. A new waste water treatment plant has been planned for the Coega IDZ, adjacent to Nu-Way's Coega Ridge development site and is a huge boost for the housing project.

"The sewer pipeline will run from Coega to Motherwell and this will help to unlock the greater Coega Ridge project," said Mann.

The developer has been working closely with municipal and provincial stakeholders for several years to make the project a reality. Nu-Way Housing Developments was given the green light to develop the 3 200 hectares of land along the R335 to Addo by the provincial Department of Economic Development, Environmental Affairs and Tourism (DEDEAT) and to proceed with town planning for the project.

Coega Ridge will include community facilities, schools, university, technical college, hospital, shopping precincts and a 110 000 m^2 regional shopping centre.

"The project's civil engineers, Aurecon, are confident that there are enough services in place to roll out phase one, which includes 5 000 housing opportunities. However, the bulk waste water treatment works in the IDZ will unlock the greater development," said Mann.

Award-winning housing specialist, Lance del Monte says that this mega project will certainly address the housing backlog. ■

Economic cycles are a fact of life and households need to adapt as these cycles unfold.

BUYING DECISIONS

According to FNB Household and Property Sector Strategist, John Loos, "One of the big myths surrounding the residential property market is that house prices always go up."

Granted, in a country such as South Africa, which has a significant general inflation rate with regard to consumer prices and wages, house prices over time should go up more than they go down.

He says, "In the Absa National House Price Index 48 year history, there has only been an annual average nominal house price decline in three."

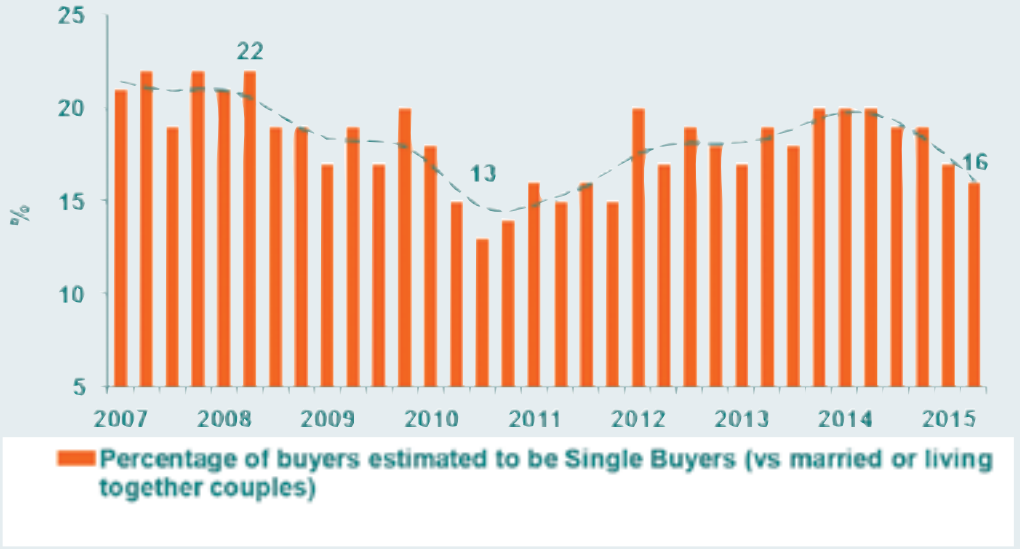
National 'corrections' in real terms, where prices still inflate but at a lower rate than consumer price inflation, are more common occurrences.

Downward corrections either in 'real' terms only, or in nominal terms, should not be seen as a bad thing. Ideally, asset prices should reflect the economic fundamentals of the country and of specific regions or areas. If those fundamentals, such as economic performance, deteriorate, asset prices should correct accordingly. This is a healthy well-functioning market situation to have.

The problem though is when home owners are not prepared for an event such as a home value decline, often because they make their buying decision based on the fallacy that the value can never drop. They can be 'over-committed' financially as a result, often taking out a 100% loan-to-value bond (plus, sometimes more debt to finance transaction costs or furniture and appliances for their new home).

While the other debt is unsecured, the assumption behind the 100% loan-to-value bond, made by both the lending institution and the home buyers, is that the home's value will hold, and even increase time, thus providing 'cover' should financial tough times arrive and the household not be able to service the loan.

Simple stuff really says Loos, "The home could quite easily be sold and the home loan debt be settled. The household could then either downscale to a smaller and cheaper home, where its smaller bond costs and lower running costs would become



IN TOUGH TIMES

affordable, or could move into a smaller and cheaper rental home."

And while many of us may think 'it will never happen to us', even in these current low interest rate times, our FNB Estate Agent Survey estimates that 13% of sellers are selling in order to "downscale due to financial pressure". That is a significant number, and it was far more significant around the 2008/9 'financial crisis'.

"The big problem here arises when home values fall, because it limits the financially pressured households' ability to 'trade out' of their properties. The situation is known as negative equity, i.e. a situation where the household owes more on the bond than what the home is worth, because the home's value has dropped. The home can still be sold, but it will only fetch a lower price, it will mean that there is still some bond debt outstanding."

This is the key reason why banks and homeowners alike would almost always like to see home values rising. And with the FNB House Price Index still rising year-on- year at 4.9% in August, there would appear little to worry about but the reality is that the index's pace of inflation has been gradually slowing for over a year-and-a-half. This is a natural response to a weakening economic growth rate as well as rising interest rates.

But even if the house price index does not decline, says Loos, it is important to understand is that the index represents the national average house price growth trend. When a national index reaches a low positive growth, the chances are good that there is a portion of homes whose values are in decline, because not all areas perform exactly the same.

The probability of home values of household's that do come under financial pressure are more likely to decline, because part of the response to financial pressure/stress is often to cut back on home maintenance, speeding up building depreciation.

In a weakening economy, job security deteriorates and incomes become less secure, raising the chance of financial pressure. On top of this, we are in an interest rate hiking cycle.

Loos says, "A house is the one item that influences spending commitments more than any other single item. The implications extend to home maintenance, the rates and tariffs bill and insurance.

And, home maintenance can only go so far. If the market is against you, a home's value can still decline."

This is where there are potential 'safety' benefits to buying well within one's means and being able to afford a sizeable 'deposit', thereby borrowing at less than 100% loan-to-value, perhaps at 90% or 80%. A lower loan-to-value provides something of an extra safeguard should home values decline, increasing one's chance of being able to 'trade out' of a property should tough financial times hit.

He adds, "The FNB Estate Agent Surveys shows a recent decline in the percentage of sellers selling to upgrade and a rising percentage of sellers selling in order to downscale. In addition, we have seen some decline in the percentage of buyers deemed to be first time buyers, as well as in single-status buyers."

"These are often younger buyers who can remain in the rental market for a bit longer or if need be, move in with their family. Of the sellers downscaling due to financial pressure, the agents are also starting to indicate that more will rent as opposed to buying smaller."

"Such an apparent recent shift in home buying/selling patterns towards greater conservatism comes at a time when consumer confidence has plummeted. Such a shift currently seems entirely appropriate," concludes Loos. ■

GROWTH IN AFFORDABLE HOUSING

Developers, contractors, industry stakeholders, equity funders and the banking sector recently attended the International Housing Solutions 7th annual Affordable Housing Conference at the Johannesburg Country Club. This is a highlight on the housing calendar as it attracts major role players in the affordable housing and rental market.

Speaking on affordable housing opportunities within the next three to five years, Anton Crous from Cosmopolitan Projects discussed the challenges facing developers. He said that full title entry level housing must be functional, built to required specifications and sizes must also include energy saving elements. Of course, he explained, this comes at a price and still has to be a value proposition for the banking sector. Now with the new regulations, the developer has to consider the locality, infrastructure and proximity to job opportunities and essential amenities such as schools, shopping precincts, transport nodes, as well as offerings to the affordable housing sector that includes affordable security villages, erf sizes and packages.

The greatest development challenges is incorporating bulk service contributions, which have increased annually by double digits. The lack of capacity and infrastructure for bulk services and council's unrealistic service standards means that many projects are not undertaken, which impacts negatively on housing delivery.

Crous gave an example that in 2012 a 200 m^2 stand was delivered for R90 000 excluding VAT. Three years later the same land in the same township and with the same land price, has escalated to R150 000 excluding VAT.

His message to investors/buyers and the banks is that investors or buyers need to look at the returns and be prepared to pay a premium for good stock with strong growth potential. Low construction costs as well as cheap land deals and low city council costs are a thing of the past.

On rentals, Crous notes that high density units are preferred, provided that they are well located have life style facilities, security and children's play areas. Getting the rental price right is by far the most important factor.

"Cosmopolitan have been focussing on the delivery of high and low density rental stock since 2009. It works well to target this market segment," he said, "that does not want to buy or that cannot buy because of debt."

In the next three to five years Crous is confident that the demand for affordable housing and rental will continue. Even though higher interest rates and inflation will keep developers' profit margins low. The sector will be hampered by high bulk contributions and servicing standards required by councils. And, week GDP growth will put pressure on individual income growth, which in turn will be reflected in the selling prices.

Crous acknowledged the support that the banking sector has played in the industry and concluded that affordable housing projects will remain focussed on price, loan to value and rental yields being acceptable to banks. ■

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77 COSMO CITIES AND MUCH MORE.....

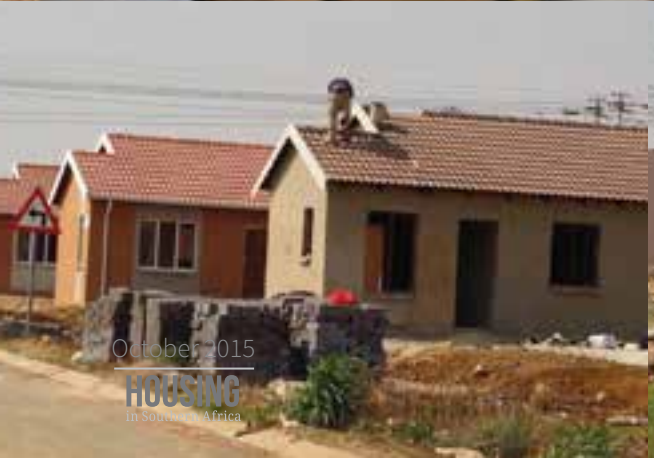
At the Human Settlements Developer and Contractor Workshop media briefing, Minister of Human Settlements, Lindiwe Sisulu has promised to fast track housing and the new 77 catalytic projects will be based on Cosmo City. North of Johannesburg, Cosmo City was the original blueprint for Human Settlements first fully integrated housing development.

Pilot projects such as Cosmo City and Cornubia in KwaZulu-Natal are shining examples of mixed use and integrated developments. The projects of scale offer different housing typologies and includes components of retail, commercial, light industrial, schools, clinics, transport nodes, police stations, community centres and recreational facilities.

The Minister and her team are currently in the adjudication process to determine the breakdown of projects across the nine provinces and the timelines for the roll out.

Another key factor in the housing roll out is the Finance Linked Individual Subsidy Programme (FLISP). It is aimed at providing low income earners such as nurses and policeman, who earn too much to qualify for government subsidised housing, to buy their own homes. She admits that there were hitches in the systems, the subsidy programme unfortunately has had a number of challenges because of the capacity challenges to roll out the programme and the approval turn around period. This subsidy has the potential to create massive housing opportunities in the Gap and Affordable housing market. It has not yet performed but with money once again allocated in the housing budget for this subsidy programme, this is about to change when the Minister officially announces the new Housing Finance Corporation. The new state-owned entity will, she says, be formed before the end of October this year. The existing government development finance institutions will fall under the new body and will be led by the National Housing Finance Corporation. She says, "We are re-engineering our DFIs so that they can respond to our needs and perform." Sisulu also added that government has concluded agreements with labour to introduce a government housing scheme for lower income earners. This is being assessed and will involve Public Service and Administration and the banking sector.

With the housing sector stakeholders, developers, builders and contractors firmly behind the Minister, she says, "We are extremely excited about these projects. Banks are willing to lend and we need to ensure that there is affordable stock. We have done a great deal of work to get on track." ■



CATALYTIC PROJECTS

The Minister of Human Settlements, Lindiwe Sisulu has announced that a number of new Catalytic Projects will be rolled out to meet government's 1,5 million housing target by 2019.

Although the snail pace of housing delivery has irked the Minister and caused massive headaches for developers and stakeholders, Sisulu has picked up the pace and has not disappointed the sector. Speaking at the recent Human Settlements Developers and Contractors Workshop in Johannesburg, Sisulu said that these mega projects will roll out over a five to 10 year period.

So far, 77 projects have been identified, 31 are government initiatives and the balance of 46 are from the private sector. Almost 1,3 million houses will be rolled out, with a projected development cost of R295 billion.

Sisulu shared that of the government's 31 projects – 11 are in the planning stages, 20 are being implemented, 23 have been budgeted for and eight still require funding.

Of the private sector's projects 15 are still in the planning stages, 31 are currently being implemented, budgets have been approved for 17 and 29 require additional leveraging and funding.

Government has already identified and acquired 24 332 ha, while the private sector has earmarked 34 004 ha for development in Catalytic Projects.

Government has put in place project delivery arrangements, starting with the Memorandum of Understanding between the Minister, Mayor and MEC to oversee the projects and key strategic operations.

Implementation protocol will fall under the Director General of the National Department of Human Settlements in conjunction with the municipalities and metros and the CEO of the Housing Development Agency (H DA). They will ensure that the projects are implemented within the prescribed timelines and within budget.

Funding and business plan approvals will be vetted by the provincial government, metro and the H DA.

The Implementing Agent contractor and principle agent will be the H DA together with the metro to assist with beneficiary management and facilitation.

National, provincial and municipal project deliver will be coordinated by the H DA.

These projects will be fast tracked and developers need to indicate the nature and type of government support required. The Minister provided contact numbers for all the key people in state-owned entities if there are any problems.

The benefits and incentives in the Medium Term Strategic Framework and Master Spatial Plan will include ring fencing and top slicing of specific capital grants across sectors such as the Urban Settlements Development Grant, Human Settlements Development Grant, Municipal Infrastructure Grant, Integrated transport grant and national electrification grant (10% of each grant) to upscale delivery of Catalytic Projects, as well as the Development Bank of Southern Africa's Capital Grant and Project preparation.

The National Upgrade Support Programme and City Support programmes will be prioritised for Catalytic Projects.

These Catalytic Projects offer projects of scale to deliver 10 000 houses and 5 000 serviced stands with a variety of housing typologies. The Minister plans to mobilise youth brigades, create job opportunities, as well as gearing government investment into human settlements and to demonstrate sustainability of these projects post completion.

She talks of a regionalised 'War Room'. a one-stop shop approach to ensure that these projects are optimised and that her 'generals' unblock delivery problems, identify and mitigate risks in the delivery value chain, provide support to the provinces, metros, human settlements entities and private sector developers.

The provinces have been divided into three regions: Region 1: Gauteng, North West, Free State; Region 2: Kwazulu-Natal, Limpopo, Mpumalanga; Region 3: Eastern Cape, Western Cape, Northern Cape. A team of professionals will assist each Regional Head to focus on the Business Plan Delivery, Catalytic Programme Planning and Implementation, Title Deeds backlog, Informal Settlement Upgrading and Affordable Housing delivery. It is an exciting time to be in the residential sector and one thing we can bank on is that the Minister will deliver and utilise her budget and any other funding that is within Human Settlements scope. ■

Drop in housing delivery

Pierre Venter of The Banking Association of South Africa (BASA) in his presentation at the National Department of Human Settlements Developers and Contractors Workshop explained the dip in the roll out of Gap and FLISP partially subsidised housing.

From the highs of 2010, the sector delivered 16 400 units which represented R3,92 billion, in 2011 a whopping 19 700 units rolled out worth R5,4 billion; in 2012, it dipped to 15 000 units worth R3,9 billion with less than 0.01% FLISP subsidy units. In 2013, the market delivered 12 600 units at a value of R3,38 billion, which includes 12% FLISP units. This dropped significantly in 2014 to 10 200 units and between 2014 and the first two quarters of 2015, the Gap housing sector dropped to 4 100 units worth R1,1 billion.

"This sector of the market," says Venter, "is for first time home buyers who cannot afford an entry level home. Developers are unable to build a 45m^2 unit on a 150m^2 site for R300 000. The differentiation between a fully subsidised government BNG/RDP house and a FLISP unit is that it requires a price tag of R350 000."

He breaks down the development costs with municipalities charging R14 000 per site for provisions of civil services and Eskom charges R20 000 per site for bulk, connector, reticulation and prepaid meter services. He adds that this is despite the Department of Energy providing Eskom with these subsidies.

Venter says that a serviced site represents 33% of the overall cost. Township establishment is another problem, with timelines over four years, while the government Red Book stipulates 27 to 30 month guidelines. From land to a completed unit varies, land cost plus 18% for a BNG unit and cost plus 25% for an affordable unit.

The challenges he highlights includes one month for the National Housing Finance Corporation (NHFC) to approve a subsidy application. It can take up to one year for the NHFC to approve a development.

Another challenge is the Mortgage Default Insurance (MDI), which was introduced to alleviate the risk taken by the banks in the event of Gap and FLISP home buyers defaulting. Unfortunately, the cost of the MDI premium is more than the 'Cost of Risk', which lenders price into the interest rate.

Venter suggests that government consider a long term fixed interest rate, savings incentive e.g. pension premium which can be withdrawn for the acquisition of the buyer's first home. And lastly, he says, there needs to be a change in consumer behaviour as the current household debt to disposable income ratio is 77.7%, compared to the South African Net Savings Rate which has plummeted into negative territory of -2,3%. ■

SAARDA's on track to deliver Catalytic Projects

The South African Affordable Residential Developers Association (SAARDA) says that Affordable Housing can be a game changer for the country in job creation and spatial transformation. SAARDA spokesperson and member, Norman Cleaver, said that the organisation has a five year plan to partner with government's Housing Development Agency on mega-scale Catalytic Projects.

Speaking at the National Department of Human Settlements Developers and Contractors Workshop,

Cleaver said that there is significant demand for Gap market units and the backlog has been estimated at between two to three million, for householders earning between R3 200 and R12 800 per month.

While in the affordable housing sector it is approximately 5,8 million households. These are income earners between R12 800 and R25 600 per month. SAARDA has set aggressive delivery targets to enable Minister of Human Settlements, Lindiwe Sisulu to meet government's goal of R1,5 million housing opportunities by 2018.

In 2014, SAARDA members delivered 4 406 affordable houses and 440 FLISP units. This will double in 2015 with targets of 8 859 affordable and 2 214 FLISP units. During 2016, Cleaver anticipates that this will double again, overtaking 2010's high of 16 400 units, to 17 883 and 4 470 FLISP units. An impressive target in 2017 of 21 901 affordable and 5 475 FLISP units, and finally, in 2018 , it tapers slightly to 19 280 affordable and 4 820 FLISP units.

The five year plan aims to provide 72 329 affordable houses and 17 419 FLISP units. SAARDA represents almost 80% of all affordable housing developers in Gauteng and is on the road of expansion and intends attracting members in other provinces. ■

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Shedding light on building and energy

Grahame Cruikshanks, Manager Climate Change and Sustainability Services Green Buildings at Ernst and Young says that new build multi-unit residential projects must achieve a 20% reduction in energy, water and embodied energy in materials.

In his presentation 'Inspiring Better Buildings', at the International Housing Solutions 7th annual Affordable Housing Conference, Cruikshanks says that the EDGE Residential Green Building Tool has the potential to effect positive change. The EDGE tool is used globally to measure energy, water and embodied energy in materials.

A 20% reduction of energy and water over a seven year period of 1,3 million green homes represents an annual power savings equivalent to 3 300 acres of solar farms, water savings of 38 million cubic metres and savings of millions of tons of CO_2 per year.

Qualifying criteria for projects to register depends of the number of units, number of housing typologies and unit price. The EDGE Residential Green Building Tool is a globally recognised certification compliance system.

Whether a developer, equity funder or industry stakeholder with rental units, the on-line tool can be used to assess the project for compliance and not as a design aid or building modelling tool. Currently, only new build residential projects are eligible for certification. Housing developments across the spectrum can register but it does not apply to fully subsidised housing projects.

The Green Building Council of South Africa, has partnered with the International Finance Corporation (World Bank Group) to operate and administer EDGE in South Africa. This includes training and certification of EDGE accredited professionals.

On that note speaker Abrie Botma from EPCM Global management consulting services firm, specialising in development and project life cycle models as well as project readiness and capabilities assessment in the energy sector, explained the impact of Eskom load shedding on businesses.

In his presentation Botma quantified the cost of load shedding quoting economist, Chris Yelland, the cost of stage one of load shedding (800 MW – 1300 MW) – 10 hours of blackouts per day for 20 days costs the economy R20 billion per month.

In stage two, the cost to the economy increases to R40 billion per month and in stage three, this doubles to R80 billion per month.

Standard Bank's Chief Economist Goolam Ballim says that energy is oxygen to the economy. It is likely that structurally South Africa cannot grow at better than 2% - since energy is a significant factor. ■

Stop selling tenders

Sisulu says, "Government wants to advance contractors, developers and builders from Construction Industry Development Board Level 1 to a Level 4."

She says that the selling of tenders does not help government to empower small and medium sized contractors.

Sisulu and Executive Mayor of Nelson Mandela Bay Metro Municipality, Danny Jordaan met with developers to present a package to develop a credible and fair database of suppliers and training, developing and mentoring of contractors, in order to deliver and fast track quality human settlements.

"All spheres of Government, National, Provincial and Metro are committed to developing small contractors to become big players in the construction industry. We have developed a package of support programmes to be implemented by Human Settlements agencies, National Home Builders Regulatory Council (NHBRC), Housing Development Agency (HDA) and all layers of Government to help with finances and skills development, we are here to help small contractors" Sisulu said. Jordaan added that the Metro will pay all contractors within the stipulated 30 days.

"The Metro will work hard to pay on time, contractors must ensure that they also do their part, they must meet all our regulations to ensure quality." More than 400 contractors are registered on the Nelson Mandela Bay Metro database. ■

Turbulent times for Nelson Mandela Bay

The Democratic Alliance's Mayoral Candidate for Nelson Mandela Bay Athol Trollip recently lashed out at Danny Jordaan, for being only a part-time mayor of the metro. Jordaan had promised to modernise the administration and grow the local economy.

According to Trollip the metro has the highest water loss in South Africa with burst pipes and wastage accounting for R327 million or 36% water loss.

Instead of growing the local economy, Jordaan has kept the metro out of benefitting from the Coega Industrial Development Zone. "Jordaan has protected those who unlawfully and improperly hand out tenders, bungle contracts and accept trips to other provinces with municipal tender bidders," says Trollip.

He says that instead of cutting costs on non-core expenditure Jordaan decided to cut 'special skills allowances' to critical officials in the electricity and water directorates. This has caused a wildcat strike and power outages in areas of the North and also resulted in water cuts. "There is a housing backlog of 38 000 units and with plans to complete only 1 293 houses this year, communities are unimpressed. According to Stats-SA, over 80% of residents in Nelson Mandela Bay are afraid to go out after dark because of the crime rate – the highest of any metro."

Trollip comments, "Possibly his greatest failing is the continued rot of the IPTS bus system and after buying buses, there is now a proposal to sell the IPTS. This will represent a R2 billion loss for the metro."

But Trollip is confident that things will change as the DA aims to introduce job zones, an entrepreneurship centre as well as establish infrastructure detection and monitoring systems. Trollip plans to launch independent forensic audits of all wrongdoing and will work with other metros that have efficient Bus Rapid Transport systems, to formally launch the Nelson Mandela Bay IPTS based on the best working model. ■

Strong growth in residential building

According to Statistics South Africa, growth in activity levels in the planning and construction phases of new housing was largely segment driven till July.

Jacques du Toit, Property Analyst Absa Home Loans, says that the number of new housing units for which building plans were approved improved by 5% year-on-year (y/y) to more than 35 000 units since January, with strong growth of 15,5% y/y recorded in the category of flats and townhouses. Growth in the number of new housing units constructed was recorded at 6,3% y/y, with a total of almost 22 000 units built in the seven months up to July. This growth was largely the result of a relatively strong improvement in new houses to the tune of 19% y/y, or a total of 15 951 units. The number of new flats and townhouses built was down by 17,3% y/y in the seven-month period, but with these housing developments it takes time to complete construction. The double-digit growth in the residential planning will probably be reflected in the construction phase at a much later stage.

The average cost per m^2 of new housing averaged R6 014 in the first seven months of 2015. This was 5,3% higher than in the corresponding period last year.

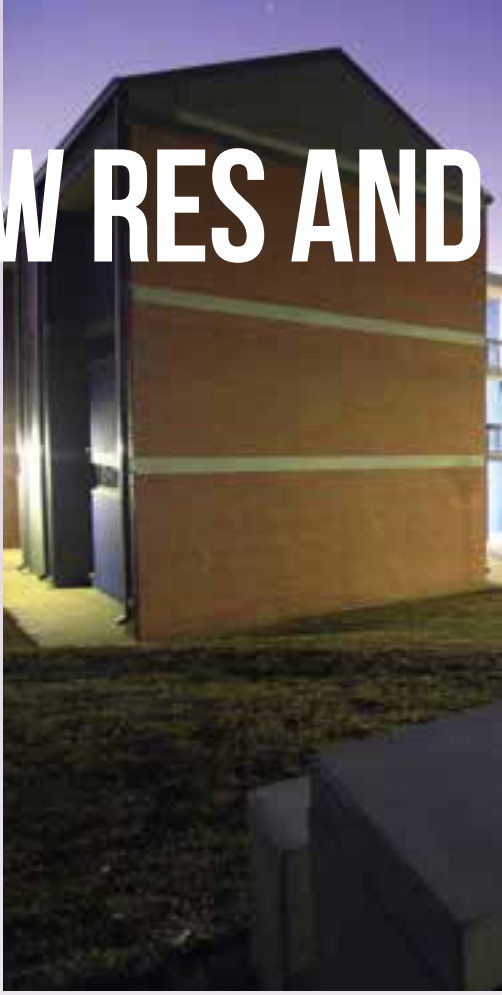
Building costs per m^2 in the various housing segments from January to July cost:

- Houses of <80m^2: R3 884, an increase of 12,8% y/y.
- Houses of ≥80m^2: R6 293, a hike of 4,8% y/y.
- Flats and townhouses: R6 864, cost 8,4% more y/y.

"There is a significant lag between the planning and eventual completion of units because of the rezoning process, construction phases, preparation of development land, availability of municipal services and infrastructure such as water, sewerage and electricity. Also the outlook for the economy, household finances and consumer and building confidence are also key drivers of residential building activity." ■

TUKS NEW RES AND

Preserving historical and botanical treasures were among the major challenges in the construction of the new Tuks Sport High School and residences on the University of Pretoria Sports Campus in Hatfield.



Pretoria building contractors JC van der Linde & Venter Projects undertook the R49 million contract for the construction of the new facilities.

TuksSport High School, an independent co-ed school, caters for 260 learners from Grade 8 to 12. The new high school opened this year and forms part of the UP High Performance Centre. The specialised school offers a sporting and learning environment for selected students. It allows current and potential high sports performers to receive sports coaching and training while still continuing their studies.

The new facility is located on a University of Pretoria Veterinary Science Faculty Experimental Farm (Proefplaas) site, historically a quarantine camp for game and livestock before the animals were relocated.

Steven Brown, Contracts Director for JC van der Linde & Venter Projects says the project called for the construction of four primary buildings:

- A double-storey administrative building with adjacent single-storey multi-purpose hall. The administrative building includes a reception lounge, offices, boardroom, staff room, copy room and psychologist's room.
- The adjacent multipurpose shed-like hall is semi-covered with a laser cut screening overhead that extends from its pitch roof. The hall is used for large assemblies as well as students' meals and is equipped with a kitchen, staff facilities and canteen server area.
- A triple-storey and two double-storey classroom blocks comprises 17 classrooms, an IT centre and laboratory classrooms. The classrooms are clustered around a central courtyard which serves as 'spill-out' space for the students. Concrete walkways link the classrooms and provide weather protection for the classroom entrances.
- A residential block for 96 are students set over four floors, constructed with a combination of load bearing brickwork and a concrete column structure. The block's red facebrick façade is combined with plastered and painted walls and the building is fitted with a curved steel fire escape structure enclosed with steel mesh. The block has eight single bedrooms and 44 twin rooms.

Brown says, "In addition, we also had to provide an open-air amphitheatre, to accommodate 260 students."

He adds that amongst the major challenges faced on this contract was the historical and environmental values attached to the site. "We had to preserve some extremely rare trees - which created access problems - and also ensure that specified historical structures on the terrain were not damaged during the building process."

Architect Ben Kunz from Neo Dimensions who designed the TuksSport project, says that structures such as the old Proefplaas' quarantined animals concrete drinking troughs had to be preserved and incorporated into the design.

"The drinking troughs were re-used as landscape elements and the footprint of the old camp re-introduced into the landscaping by means of paving lines in the lawns."

Kunz explains, "The trees on the site are mainly old exotic trees species from the remnants of a UP arboretum. Eight particularly precious trees were identified, which included three different species of South African yellowwood trees. These are

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ASSURING QUALITY HOMES

ERIC MOLOBI HOUSING INNOVATION HUB & NHBRC INSPECTIONS

The country's trend-setting Eric Molobi Housing Innovation Hub aims to attract manufacturers, developers and suppliers of fresh new energy efficient building technologies, in order to fast track housing delivery. The NHBRC's hub is sparking creative thinking and awakening the entrepreneurial spirit with its call to sector players to have their systems evaluated, so as to be included in the national government database of approved Innovative Building Technology (IBT) systems.

ERIC MOLOBI

With government committed to providing 1,5 million housing opportunities by 2019, it is a unique opportunity for developers and suppliers to provide IBT products and systems for projects of scale. The national database will assist the Provincial Human Settlements Departments to select systems for developments. With the Minister of Human Settlements, Lindiwe Sisulu, promising to roll out 77 Catalytic Projects throughout the country, IBT systems will be utilised to meet government's housing targets.

The focus on energy efficiency and performance is a major factor in residential housing since the introduction of the South African National Standard Energy usage in buildings (SANS 10400 XA). The Hub aims to include new, fresh technologies that address issues around energy efficient housing.

Set up and organised by the state's housing regulatory authority, the National Home Builders Registration Council (NHBRC), the Hub has played a pioneering role in showcasing houses built using IBT systems at its testing and teaching facility in Soshanguve, Tshwane.

Since the official opening in 2007, the facility has grown into the country's leading housing technical centre under the guidance of the Hub's technical guru, Dr Jeffrey Mahachi and his team. Mahachi heads up the NHBRC's Centre for Research and Housing Innovation, which oversees the Hub. As the foremost authority on IBTs, his passion for the technical and scientific work being carried out will benefit the Department of Human Settlements as well as the private sector to fast track housing across the spectrum.

The housing typologies and systems have been put through stringent tests withstanding inclement weather conditions, hail storms on

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HOUSING INNOVATION HUB

the Highveld and building wear and tear, without any maintenance being carried out on the structures. All tests have their merits and the state has accumulated a great deal of scientific research and information, including which systems are best suited to the different climatic zones around the country.

The purpose built Hub has created the opportunity for developers, manufacturers and suppliers of IBT systems to build show houses. It offers housing departments, developers, municipalities, town planners and industry stakeholders the opportunity to get up close and personal with the myriad of systems and the diversity of housing styles and designs on offer. The wealth of Agrément certified and NHBRC Rational Design Approved building technologies at the Eric Molobi Housing Innovation Hub will be included in the national database.

Many systems at the Hub still look pristine, despite a deliberate lack of attention and maintenance. Of course, over the 10 year period since the show houses were built, some IBT suppliers, manufacturers and developers have flourished, while others no longer focus on the residential sector and a few are no longer in business.With all the existing houses well documented, some systems have been duplicated and Mahachi and his team will determine which houses to retain that are unique or offer the best examples of fit for purpose housing.

The NHBRC Centre for Research and Housing Innovation aims to attract a number of new technologies and systems for assessment and accreditation at the Eric Molobi Housing Innovation Hub. With most of the operations and capital expenditure of mass residential sector construction companies geared to traditional building systems and a preference for bricks, mortar and cement, the challenge is to introduce IBTs to accommodate speed of erection and improve energy efficiency in housing.

The scope and mandate of the NHBRC's Hub is to provide research on innovative building systems and products. The Hub serves the sector by continuously assessing new products and systems to improve on environmental sustainability and ensure a better quality of housing, which will lead to growth in the sector.

The Hub was named after Eric Molobi for his forward thinking philosophies. An illustrious political activist and ANC stalwart at the time of the new democracy, Molobi was the first Chair to promote innovation in housing finance at the National Housing Finance Corporation.

Under his guidance the Social Housing Foundation was established and, for the first time in the housing sector, government created a viable, sustainable, affordable rental housing option. Born in Alexandra Township in Johannesburg, the housing visionary raised funds from foreign government agencies to build community projects, in his role as a special envoy for the South African Partners in the European Union's Special Union. Under his leadership as a board member of the Johannesburg Housing Company and in partnership with the Gauteng provincial government, the Brickfields Housing Project in Newtown was funded. The social housing project received global recognition and the United Nations Habitat Award for innovative and sustainable building solutions in 2006.

His unfaltering dedication to ensure that the poor were housed, formed and shaped the housing policy. And, the launch of the robust Capital Housing Subsidy was the founding principle and policy framework that enabled government to provide over three million houses to the poor. ■

THE A B C

The Eric Molobi Housing Innovation Hub's scope and mandate is to provide research on new Innovative Building Technologies (IBTs) and products. The hub plays a crucial role in assessing the technical and physical performance of these systems at its testing facilities in Soshanguve, Tshwane.

The hub's village style atmosphere with a range of Innovative Building Technologies show houses, clearly demonstrates the aesthetic appeal of the numerous housing styles, from emergency housing units to double storey residential units.

The diversity of systems, their look and consumer appeal is just eye candy. The most important aspect is how these systems perform technically, scientifically and the buildings' performance and wear and tear on site.

Innovation by definition means 'the introduction of something new: a new idea, method, or product etc'. An IBT is defined as any form of building which utilises building systems, methods, materials, elements or components, which are not fully covered by existing standards and specifications or codes of practice and/or referred to in the 'deemed-to-satisfy' of the National Building Regulations.

Innovative building technologies are required to have either an Agrément certification or (for the purpose of housing specifically) the National Home Builders Registration Council (NHBRC) Rational Design approval, in order to comply with the building regulations.

The National Home Builders Registration Council, Centre for Research and Housing Innovation's hub evaluates, tests and approves systems to ensure that the IBT is fit for purpose. Some of the criteria that is investigated/evaluated includes: structural strength and stability, serviceability, materials, behaviour in fire, energy efficiency and installation of services (water and sewer). With the public and private sector upscaling the speed of housing delivery and so many systems available, alternative solutions can be found in IBTs. There are two main categories of innovative building technologies, based on wall type – masonry and non-masonry.

A masonry wall can be defined as an assemblage of masonry units jointed together with mortar to form a structure and are either generally made from fired clay, concrete or compressed soil. Every other wall type that does not fall within this description is a non-masonry wall.

CONCRETE

Concrete based walling systems, in various forms, are more common than many people realise and have been in existence for decades. Concrete is one of the oldest building materials and there is a wealth of technical knowledge and experience of this material available. The concrete walls are usually constructed in-situ or precast in a controlled factory environment and then assembled as panels on site.

FORMWORK SYSTEMS MOLADI

The Moladi housing system is a typical cast in-situ, concrete forming system. A lightweight plastic injection mould formwork system is used to cast the wall. The reinforcing of the walls of the superstructure must be designed and certified by a structural engineer. The walls are comprised of an in situ cast, reinforced 100 mm thick walling system, consisting of reinforced mesh and aerated mortar. This mortar comprises a mixture of graded river sand, cement, water and Moladi Chem, the company's own chemical component. The external and internal wall thickness is 100 – 150 mm. No beam filling is required as block outs are used to create the cavities to position purlins and trusses accurately. Steel windows and doors are cast into position. All electrical and water piping is

MOLADI

OF IBTs

positioned into the formwork prior to erection on site. This system is Agrément Certified.

FINNBUILDER

For the walls, a Finnbuilder moving shuttering system is used to make 20 MPa concrete blocks according to a quality management system.

Concrete stone, concrete sand, plaster, cement and water are used in different proportions to SABS standards. Mixing is done in a powered 300 litre concrete mixer. Hand mixing is permissible only for mixing in the case of floating or plastering of walls.

The external walls are 220 mm and the internal walls 50 mm thick. Firm hand compaction is carried out in three stages. Instead of brickforce, two bars of 5.6 HTS are required to be used horizontally on alternative rows below window height and above 2.1 m heights. Vertical reinforcing bars are placed both sides of window and door openings. Ring beams of 50 mm deep of 30 MPa are built above window level.

Walls are cured by keeping the surface wet for seven days. Blocks are built with wet joints or other methods used for dry surfaces. Cement slurry is used on 15 mm plaster applied to both sides of the walls.

Foundation trenches, slabs and beams are to the engineer's design. A conventional roof structure is secured with tie-in wires or straps

Continued ▶▶▶

1 Innovative building technologies require Agrément Certification or National Home Builders Registration Council Rational Design Approval for use in residential housing.

2 Typically, IBT systems have a proven track record and offer numerous energy efficiency benefits including thermal performance, which reduces energy required to heat homes in winter and keep temperatures cooler in summer, making it comfortable for the home owner.

3 Get up close and personal with IBT systems - there are a myriad of building systems which are appealing, pleasing and affordable across the entire residential sector, from fully subsidised government houses to upmarket estates.

4 Fit for purpose - the Hub offers developers, builders, municipalities, metros and housing departments the opportunity to view how the systems perform, both from a scientific point of view and an environmental aspect, as no maintenance has been carried out on the structures since being built.

FINNBUILDER

MOTLEKAR

Fast tracking

Continued ▸▸▸

The Eric Molobi Housing Innovation Hub at Soshanguve offers the best examples of Structural Insulated Panels, compressed soil brick, sandbag housing, formwork systems, composite walls, prefabricated, light steel frame, steel mesh and combinations of different elements and designs to meet the needs of residential developers.


SHIEBROOK


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and a 6 mm gypsum board ceiling is required with 40 mm Isolite for insulation. This system has the National Home Builders Registration Council Rational Design Approval.

COMPOSITE WALLS

Composites can combine traditional materials with new materials to result in improved performance. Composite systems of concrete and reinforcing allow for lower weight and easier to handle concrete wall panels.

These panels offer the same range of physical properties and durability of a full concrete system while significantly reducing the weight. The lower weight also results in a lower cost sub-structure and structural support system.

SHIEBROOK

The walls comprise of 3D panels consisting of three-dimensional welded wire mesh and a built-in expanded polystyrene insulation core.

The panels are erected over steel reinforcing bars embedded in concrete foundations, then fastened to one another with wire splice mesh.

Concrete is sprayed on both sides of the panels to achieve the desired thickness (40 mm – 70 mm). This gives the wall a total thickness 150 mm with various types of finishes.

The result is a homogenous structure with excellent thermal and acoustic properties. The concrete cover serves as a durable, waterproof exterior and provides interior thermal mass. The entire structure works effectively to distribute weight bearing loads and has a high strength-to-weight ratio.

The construction system is used as a total construction system - walls, floors and roofs, but can also be included in other construction systems as a component. This system has National Home Builders Registration Council Rational Design Approval.

IKHAYA

The walls consist of prefabricated light modular panels. The core wall panels are made of 80 mm expanded polystyrene (EPS) blocks sandwiched between two sheets of galvanised wire-mesh. The wire-mesh is electro welded to galvanised wire ties passing through the expanded polystyrene core. The panels are finished off with structural plaster on both sides of the wall to give the house a smooth exterior finish.

A reinforced concrete ring beam is cast at eaves level on all external eaves and gable walls. External corner and T-wall junctions are reinforced with U-shaped reinforced bars at 250 mm centres passing through the EPS core with the legs on either side of the junction wall. Internal wall junctions are reinforced with L-shaped strips of weldmesh wire tied to the wall panel weldmesh.

The foundations and surface beds are designed by an engineer where soil conditions are problematic. Roof construction is conventional timber

housing...


IKHAYA


ROBUST


EEZYBUILT


LEPA

trusses with light weight cladding (12kg/m^2). Insulated ceilings are always installed as well as conventional windows, doors and services. This system is Agrément Certified.

LIGHT STEEL FRAME

Light steel frame building consists of structural wall frames and roof trusses, manufactured from cold-formed light gauge galvanised steel sections.
Exterior cladding consists of a single skin brick wall (veneer) a weather resistant board of reinforced plaster, fixed to the wall frames. In some cases, cladding consists of prefabricated (modular) panels.

The Hub has a number of examples of this type of construction with its various claddings.

STEEL MESH

The Robust system has a concrete wall appearance in which the finished state, but is neither formwork based poured concrete, nor pre-cast into panels. Robust wall panels are manufactured from 0.4 mm mild steel sheeting, which are punched, expanded and formed into a zig-zag profile. Panels are erected vertically and stiffened transversely with 2.5 mm wires spot welded to each face at 200 mm centres. Mortar is applied to panels either by hand or using mechanical packing. Mechanically applied mortar may be applied wet (pumped) or dry (gunited), with hand-packed mortar and mechanically applied wet mixes. Both faces of core are plastered. Basically, it is a slab which is vertically applied. In non-corrosive environments plaster will have a 28 day compressive strength of 10 MPa, however, in severely corrosive environments higher characteristic strengths may be specified.

Where the Robust system is used for example, in the Southern Coastal condensation area, insulated ceilings are installed and exterior walls are given an additional external finish of Pratliperl plaster.

The walls must be 130 mm thick, excluding 13 mm thick additional plaster on the outside. For the foundation and floor system, conventional cast in situ concrete surface beds are used with thickened edge beams and thickening under internal walls. Similarly, conventional roof construction and roof coverings are used. This system is Agrément Certified.

Continued ▸▸▸

IBTs built 10 years

Continued ▸▸▸

SA STEEL

The SA Steel integrated system consists of a high quality load steel framework comprised of base rails, lipped channels, studs, noggins, bracing and top rails to which wall panels, ceiling panels and roof structures are fixed.

The wall panels are clad externally with 12 mm thick medium density fibre cement boards and internally with 15 mm thick gypsum plasterboard. Ceilings are formed either by fixing 12 mm gypsum plasterboard to the underside of the galvanised steel roof panels, or are comprised of formed steel lipped channel rafter and noggins.

SANDWICH PANELS

A Structural Insulated Panel (SIP) is a composite building material. The panel consists of an insulating layer of rigid core, sandwiched between two layers of structural board.

The board can be made of sheet metal, plywood, cement and magnesium oxide board (MgO) or oriented strand board (OSB) and the core either expanded polystyrene foam (EPS) or extruded polystyrene foam (XPS), polyisocyanurate foam, polyurethane foam or composite honeycomb (HSC).

MOTLEKAR CONSTRUCTION TECHNOLOGIES

The improved Vela Steel Building System is based on Structural Insulated Panels (SIP) incorporating a steel frame, which enhances the structural integrity of the system. The steel frame is designed in accordance with the requirements of SANS 517.

The composite wall panels are comprised of 10 mm autoclaved magnesium oxide, or 9 mm Nutek cellulose fibre cement boards, encapsulating polyurethane core and polystyrene blanks between panel cavities. The walls are finished with armour coat waterproof paint. Where required, the panels are delivered on site with factory fitted window and door frames. The foundation and floor slab are conventional and are always the responsibility of a competent person. The roof is constructed of standard lightweight steel trusses clad with metal sheeting, concrete roof tiles or Agrément approved cladding.Services such as plumbing and electrical conduits are prefixed into the composite panels. This system is Agrément Certified.

IPOZI

SOLBRIC

Well known systems and brands are capitalising on exposure at the Eric Molobi Housing Innovation Hub in Tshwane. With new suppliers and manufacturers clamouring to get onto the national government Innovative Building Technologies database under the auspices of the National Home Builders Registration Council's Centre for Research and Housing Innovation, the hub will add exciting new products to its IBT village.

EEZYBUILT

The EezyBuilt system uses Structural Insulated Panels (SIP) for the wall, ceiling and roof components of the house. SIPs provides a low maintenance textured finish to both the interior and exterior walls. The

ago still going strong...


ECO BEAM


POWERWALL


ABŌD


SA STEEL

panel's outer two sheets comprise 0.5 Chromadek steel cladding and a polyurethane core. The greatest advantage of this system is the speed of construction, saving time and money without compromising quality.

The EezyBuilt home is also available in conventional form with face brick exterior walls and a plaster and paint finish inside. The builder is required to assemble the pre-cut panels and mount them on the concrete slab. The finished building is airtight and soundproof. This system has National Home Builders Registration Council Rational Design Approval.

LEPA

The external walls consist of 150 mm – 180 mm tongue and groove interlocking expanded polystyrene (EPS) panels with beaded concrete with a dry density of 650 kg/m^3. These EPS panels are encapsulated on both sides with 4.5 mm calcium silicate boards. Internal walls are 120 mm thick and comprise of the same material.

The foundations comprise an in-situ cast concrete surface bed and thickened edge beams cast on a damp proof membrane to the engineer's specifications. The roof consists of light gauge, structural steel trusses and clad with lightweight cladding. Insulated ceilings must always be installed with gypsum plasterboard, fibre cement, Isofoam, or 30 mm thick Lambda board. This system is Agrément Certified.

IPOZI

The walls are comprised of 2 400 mm x 1 000 mm x 60 mm wall panels fabricated from two sheets of pre-coated galvanised sheet steel, encapsulating an expanded polyurethane core.

Galvanised steel ridge beams span and are anchored to the external eaves. External walls have an oven baked polyester coating to both sides and are internally clad thick X-rated gypsum plasterboard 15 mm. Vertical joints are tongue-and-groove and wall panels are anchored to a galvanised sheet steel angle, which in turn is secured to the foundation slab with expansion bolts.

Internal wall panels are the same as external wall panels, clad both sides with gypsum plasterboard. Ceiling panels are the same as wall panels (without gypsum plasterboard cladding). Window and door frames are manufactured from unplasticised polyvinyl chloride (uPVC). The design of the foundation slab

Continued ▸▸▸

Capitalising on IBTs

Continued ▸▸▸

and thickened beams is the responsibility of a professional engineer. The roof is specially designed comprising an i-shaped ridge beam of 560 mm deep and fabricated from 2 mm thick galvanised sheet steel. Roof sheeting is 1.25 mm profiled galvanised sheet steel spanning from eaves to ridge beam secured at every ridge with 5.5 mm stainless steel self-tapping screws. The system makes use of conventional services. The system is Agrément Certified.

SANDBAG HOUSING

Building with sandbags is a fairly unusal alternative to all conventional ways of construction. It is a natural building technique that evolved from historic military bunker construction techniques and temporary flood-control dike building methods. The technique requires very basic construction materials: sturdy sacks, filled with soil usually available on site. With sandbags tacked and packed the width and height of the house, the system allows for design variation on site. Once the house is finished with plaster or a wooden cladding, it looks exactly the same as a conventional house. The use of sandbags is not limited to a specific market segment. The sandbag system can be used for housing across the entire spectrum from fully subsidised, affordable, upmarket residential estates and multi-storey developments.

ECO BEAM

This building system is comprised of a timber frame structure, consisting of timber lattice beams (Eco-Beam) as vertical and horizontal studs and wall plates with sandbag infills. The walls are finished by securing steel wire mesh on both sides of the frame structure and plastering with conventional cement-sand plaster 25 mm thick. The Eco-beams are fabricated from two 38 mm square treated timber sections (SANS 10005) and connected by a continuous galvanised steel strap, which zig-zags between the timbers to form a lattice beam 220 mm deep.

The foundation is generally a concrete strip footing, or as specified by an engineer. The roof is constructed of eco-beams, timber rafters, or conventional timber trusses and light or heavy weight cladding. Window and door frames are incorporated as in timber frame structures and are conventional. This system is Agrément Certified.

COMPRESSED SOIL BRICK

Compressed Earth Brick/Block (CEB) is one name given to earthen bricks compressed with hand-operated or motorised hydraulic machines. The use of natural, locally-available materials is cost efficient and supports local economy and businesses.

The earth used for the compressed soil bricks is generally subsoil, leaving topsoil for agriculture. Building with local materials is more sustainable and it offers job opportunities for the local community. This method of construction is favoured in rural areas and the use of locally available material like in-situ soil, is ideal.

Agrément South Africa has a few certified systems of this type and other systems have opted for the National Home Builders Registration Council's Rational Design Approval. The hub has two examples of compressed earth bricks.

POWERWALL

The walls are comprised of a lightweight steel frame clad with dry-stack, compressed earth bricks on both sides, with a cavity in between. The mortar laying process is eliminated by replacing it with mortar slurry poured into cavities formed by the profile of the building blocks, resulting in a brick and mortar wall solution. Galvanised steel rods are applied to every fifth row of blocks as brickforce. Reinforced steel bars are applied to all corners and joints to increase the structural strength of the construction. The interlocking building blocks are manufactured using a block-making machine on, or close to, the building site. Plastering is an option, but not a necessity.

The foundation and wall structure are applied according to the engineer's designs for the specific soil conditions. The steel frame trusses for the roof are designed by an engineer. The system has National Home Builders Registration Council Rational Design Approval.

SOLBRIC

The walls are comprised of dry-joint walling, consisting of cement stabilised earth bricks with interlocking faces on the top, bottom, and on the ends. The average compressive strength of the cement stabilised earth bricks is about 8 MPa. The bricks are stacked closely together to allow interlocking of units, after which the horizontal and vertical joints are filled with grout. The grout mix is one coat cement and two parts of clean plaster sand. Once the wall is finished, the surface must be watered for curing purposes.

ABŌD

The ABŌD temporary structures are made of arched steel tubing frames of standard dimensions covered in standard corrugated sheeting. The front and back façades consist of fibre cement boards, wooden door and plastic sheeting. IBR sheeting is used for the upper level platforms. Although the BSB-Design ABŌD series provides a wide range of design options for low cost homes, the system at Eric Molobi is a temporary structure that can be connected with other ABŌD products to make larger structures and design shapes. This structure requires a simple moveable foundation system. There are extensions to the corner arches that lock the structure into the ground. ■

LESSONS LEARNED

The Eric Molobi Housing Innovation Hub provides a platform for potentially powerful research into the real-time physical performance of the various types of innovative building technologies.

The show houses constructed in the village range in age from six to ten years, providing a unique opportunity for observing and documenting the response of these systems to the environment within which they are placed.

The houses have not undergone any significant maintenance or repair work in order to note the durability of the various materials, structural defects and impact of workmanship. The site is predominantly characterised by active/heaving soils, classified as H3, which presented an opportunity to document performance under non-ideal conditions.

Some of the findings include:

- The importance of appropriately detailed joints or connections - some of the panel systems were not adequately constructed and weatherproof, particularly at joints. Attention needs to be paid to the selection of appropriate products and materials that work effectively together.
- Construction skills and supervision - it was pretty clear at one show house that the contractor/builder perhaps did not have an intimate understanding of how the building system really worked. Structural defects appeared shortly after construction was completed. Although many IBTs may not require skilled labour for erection, it is undeniable that an understanding of good construction practice, experience with the system and problem solving ability must exist within the project team.
- Maintenance, materials and durability - apart from the need for regular home maintenance, it has become apparent that specifying good quality, appropriate products has a real impact on the quality and durability of the housing product. For example, within approximately two years of completion, a fairly simple IBT house with painted fibre cement board external walls was peeling. This can be attributed to the quality of the paint, the strength of adhesion of the paint to the board, or the application method and environmental elements.
- Another system applied an innovative recycled plastic-type roof covering, a material that was fairly unknown. This particular product is not suitable for the South African environment. Through observation, it was concluded that the fairly high sun exposure received in Soshanguve, resulted in the roof material becoming more brittle and subsequently weaker over the years. A recent hail storm completely destroyed the roof, as though shattering glass.

The decision to not maintain the IBT show houses has served to emphasise the fact that housing structures do require maintenance, and that regular maintenance will impact the lifespan and quality of the house.

It has been interesting to note, however, that there are some systems that have been standing for ten years without maintenance (apart from regular cleaning) and the external appearance of the home is quite acceptable.

The recommendation therefore is that IBT homes should be provided with a maintenance guideline for the end-user/homeowner. This will provide some indication of the particular components that may require replacement and minor maintenance, as it relates to specific systems. This guide can be improved over time as more about the various systems are is discovered, but it is a necessary starting point.

Additions and alterations - many innovative building technology products only have a single-source supplier, usually in the form of a specific Agrément certificate holder who bears the ultimate responsibility for the performance and quality of the final product.

Often home owners are posed with the dilemma of additions and alterations and they either do not know the original builder or are unable to contact them. This necessitates the need for all IBTs to be easily integrated with traditional, easily sourced materials, namely brick and mortar.

Almost everyone, including the beneficiary of a subsidy house, is capable of sourcing a local builder to perform some basic addition/alteration work. However, when faced with a sophisticated sandwich panel in a light steel frame home, sourcing a builder may not be that simple.

A beneficiary of an IBT home constructed as part of the Eric Molobi Innovation Project learned this the hard way. The home owner wanted an additional plug point installed.

After employing the services of three or four local handymen, he realised that the wall was of such incredible strength that the electricals could only be wall mounted. This of course did not meet with the home owner's aesthetical preference. For this reason, it is important to develop support for the IBT sector, which will cultivate sub-industries and enable/equip local business to install, erect and build using these systems, thereby ensuring their sustainability.

The NHBRC Centre for Research and Housing Innovation works closely with and have formed strategic partnerships with other state entities such as Agrément, the Council for Scientific and Industrial Research, the South African Bureau of Standards and others, to collaborate and evaluate IBT systems. ■

CHIKANE HEADS UP N

The articulate and polished new Chairperson of the National Builders Registration Council (NHBRC) Abbey Chikane says that he has inherited a solid, stable organisation.

Abbey Chikane

He is quick to point out that this is all down to the Minister of Human Settlements, Lindiwe Sisulu, who has appointed a highly experienced Council with a strong technical, political and business background, which cuts across various disciplines and is well represented across provinces, gender, women's issues, youth and people with disabilities.

A stickler for precision and correctness, Chikane says that the most critical issue is to set the tone for governance and ethical perspective at the top. "We need to be compliant with the Housing Consumers Protection Measures Act, Public Finance Management Act, and Treasury Regulations, Public Administration Act, Companies Act (where applicable), King 3 and the Code of Best Practices in Corporate Governance."

He explains that the Council's aim is to be compliant with legislation and ensure that the NHBRC achieves a clean audit by 2017 (moving away from the Auditor General Report of non-compliance).

"A clean audit is the principle measure of any Council, to execute oversight diligently and responsibly," says Chikane.

The Council has a number of strategic and operational issues on the agenda:

To implement new protocols in terms of governance, accountability, responsibilities and reporting mechanisms that will ensure that we execute our mandate diligently.

To determine whether the current operating model is permissible.

To seek clarity of purpose in terms of the Freedom Charter and the Constitution of the Republic of South Africa 1996 that states: 'Everyone has the right to adequate housing'; within the context of the Constitution; the National Development Plan; the National Housing Code and the Medium Term Strategic Framework; the expectation of government; the Minister's expectation of the Council; the Council's expectation of Management and vice versa. To review the NHBRC's current legislation.

The former Ernst & Young partner has held a string of key positions in the diamond and mining sector as well as being a business strategist and development economist and having established his own investment company in 2008. Abbey Chikane has no investments or business interests in the housing sector, and there is no conflict as he takes over as Chairperson.

With operating costs of about R400 million and having to enrol and inspect 300 000 houses per annum, averaging 1 000 houses per day, the NHBRC has the capacity to support the delivery of 3 000 houses per day with the existing pilot operating business model and the resources to upscale to 6 000 houses per day.

However, in the past two financial years government's housing delivery has dropped significantly.

"The rationale behind this operating model can be traced back to 2011/2012 when government delivered 300 000 per annum. With the inspection model no longer outsourced, the NHBRC in-house inspection unit has over 220 inspectors. In the event that government increases the roll out of housing to 600 000 per annum the NHBRC has the capacity to ramp up quickly. Chikane adds that the state-entity has the budget and can, if need be, outsource some functions to meet the demand. "We have a more controlled and well trained team with tablets and GIS enabled technical capacity."

Minister Sisulu's recent announcement of 77 Catalytic Projects nationwide will go a long way to increasing housing delivery and getting back on track to roll out 1,5 million houses and housing opportunities by 2019.

"The new Council, CEO and the executives procured Enterprise Resource Planning (ERP) solution, which provides an integrated view of core business processes, often in real-time, using common databases maintained by a database management system. ERP solution track business resources, cash, materials, production capacity and the status of business commitments: orders, purchase orders, and payroll. This has brought about stability as far as the personnel are concerned. We are well resourced and this is a requirement by the shareholder."

NHBRC's operating model includes 23 offices countrywide, a call centre, nine engineers deployed to assist municipalities, metros and provincial departments with issues of land

HBRC'S NEW COUNCIL


Rental Housing

availability, design and technical services.

Chikane has been tasked by the Minister of Human Settlements to ensure that the state-owned entity can move speedily and has the capacity to carry out inspections, enrolments, facilitate training, deploy engineers and assist municipalities with technical and design services and metros and provincial departments to fast track housing delivery.

Some of the key issues that the Council has addressed include the reporting protocols in line with best practices, the Companies Act and King 3.

"For instance, previous Chairpersons of Council served as Chairpersons of the Remuneration and Human Capital Committee. That is inconsistent with best practice, particularly King 3. This has since changed. Another issue was the intimate relationship between the Chief Internal Auditor, Company Secretary and management. We have since inculcated a culture of independent reporting, mainly and functionally to Council and administratively to management," explains Chikane. He cites the example of the thin line between the Council and executives, who report to the Council instead of the Chairperson of the Committee reporting directly to the Council. "By doing this, you miss the clear line of demarcation and the responsibility of Council," he says.

There are a number of newly formed committees, which include: Social Ethics – which deals with ethical leadership and ethics in the industry and the long list of fraud cases internally and contractors who build shoddy houses. Chikane says that the NHBRC will need to find a way of dealing with these efficiently and still be able to focus on our core business.

"Other areas of interest are the new Transformation Strategy - a comprehensive and inclusionary strategy that includes women, youth, military veterans and people with disabilities, and the Warranty Fund," Chikane explains. The current operating model, following the pilot model, will be reviewed to see whether it is permissible and if it will enable the NHBRC to fulfil its mandate. Also, part of the Council's legislative requirements is to create awareness about its role regarding consumer awareness and, there is a perception, even by the shareholder, that it needs to 'beef up' the communications unit.

The Minister of Human Settlements has expressed that she would like the NHBRC to be responsible for and offer protection to all the houses in the country, far beyond what the state entity currently covers.

The NHBRC has met with the Chief State Law Advisor and, Chikane says, "We believe that the New Bill will probably be presented to the Minister and the Portfolio Committee before the end of the financial year."

He notes that there is a perception by the shareholder that the NHBRC needs to be seen to be active and 'to have teeth' in taking action against builders who build shoddy houses.

The NHBRC plans to roll out the Electronic Integrated Reporting system with Google maps, GIS, and also focus on training programmes for builders, youth, women, military veterans and people with disability.

Chikane concludes, "I am very glad to do anything that benefits the people of our country and my aim in the next three years is to help the Minister to build sufficient capacity to deliver on her mandate." ■

NHBRC'S ROLE

The state-owned National Home Builders Registration Council (NHBRC) has recently undergone a metamorphosis and along the way it has become a well-respected state-owned entity.

Mandated by the National Department of Human Settlements, the NHBRC ensures that builders, developers, construction companies and stakeholders in the residential sector comply with building standards, codes and practices.

Housing home builders are required to enrol new houses across the residential spectrum with the NHBRC, which provides assurance through the NHBRC Warranty Scheme. The warranty provides cover for a period of five years on all new residential mortgaged units and government subsidy units, built by a registered NHBRC Home Builder and enrolled with the NHBRC. This includes the structural integrity of the foundations, walling and roofs. In the event of structural defects, the consumer has recourse through the NHBRC that the structural problem will be repaired.

The Home Builder is required to provide the consumer with the Standard Home Builders Warranty, which states that the Home Builder will rectify any defect in respect of the superstructure and the roof structure for a period of five years following occupation

NHBRC's 220 strong-inspection team operates countrywide, with a Building Quality Index for Housing (BQIH) checklist that contains the minutest details. The inspectors conduct a minimum of four inspections per house in the fully subsidised sector - the sub structure/foundation, the super structure, practical completion and storm water management.

For non-subsidy housing, the number of compulsory checks varies according to the typologies and additional inspections include plumbing, carpentry, electrical and water proofing. Housing typologies include social housing, sectional title, social housing walk-ups, Finance Linked Individual Subsidy Programme units, Gap market, affordable housing, rental stock, upmarket residential estates, developments, government fully subsidised and student accommodation.

The quality of the housing structure is underpinned by stringent legislation. The Home Building Manual is based on normal construction procedures and recommended practices, which have been shown to be satisfactory and acceptable over time. Provision has been made for alternative building methods, provided it is Agrément certified or has NHBRC Rational Design approval.

The NHBRC Home Building Manual provides the Home Builder with a wealth of technical data and minimum requirements, good building guidelines and illustrations. The Manual does not replace or overrule existing Building Regulations/Codes of Practice but is a reference document for home builders to adhere to accepted quality standards.

The inspectors are government's 'eyes and ears' on building sites to verify quality housing and ensure that all builders, contractors and developers follow the rules. Most built environment professionals understand that the NHBRC is there to ensure compliance with building standards and codes. Inspectors are tremendously proud of the work that they do and, of the assistance they offer to newly established builders, seasoned contractors and developers. Instead of inspectors being seen as a nuisance or someone who is going to make the home builders life difficult, there is a new respect for the inspectors.

The inspectors have the responsibility to ensure that housing consumers, beneficiaries and stakeholders receive quality housing that meets all standards.

An inspector can identify recurring problems on site - perhaps the mortar mix is not the right colour or texture or the curing of the cement foundation shows cracks - this failure to satisfy general requirements will be deemed to be an issue of non-compliance, as well as a breach of the NHBRC's rules. The inspector will then approach the training department to come on site and inform the contractor that the NHBRC will be providing assistance.

The NHBRC Centre for Research and Housing Innovation provide on-site training and technical assistance. This will save the housing developer, builder or contractor time, energy and money.

The NHBRC will ensure that the labour force has been upskilled and that the building complies with the regulations. This also eliminates any disputes of non-compliance and payment being withheld. ■

Finishing coat and painting windows

Inspector Bulelani Gcaza

NHBRC RUNS ON SAP

Equipped with a new iPad or Tablet, electronic GIS system and Oracle's SAP system, the NHBRC inspector receives all the information available on line about the site, location, stand number, size, number of units, the owner, developers, site contact, units, plans and designs, at the touch of a button.

The NHBRC inspectors are around the country carrying out inspections on various housing typologies, from the smallest fully subsidised unit to an upmarket palatial residential house, and they endeavour to ensure Home Builders meet the stringent building standards.

Inspectors are required to visit sites for the mandatory number of housing inspections, which include the key building stages. Inspectors report to site offices and establish contact with the site manager, developer or contractor on building progress, dates of pours, as well as a schedule of which units have been completed. The NHBRC Building Quality Index for Housing (BQIH) checklist has four key areas on the NHBRC Subsidy Home Enrolment Inspection Form. Sub-structure: this is the start of the building process, clearing the site, breaking new ground, setting out the site boundaries, location, trench widths, digging and, removing tree roots, prepare and fill and compact before excavations. If the site is water-logged, or saturated with water, has the engineer provided the design for water drainage. In terms of social housing, most are raft foundations as Gauteng is a highly dolomitic area.

Concrete and masonry: concrete foundations must be placed as soon as possible after excavation has been completed and inspected. The concreting must be carried out in one continuous operation. The thickness of the concrete slabs, raft slabs, reinforced and unreinforced strip footings are all specified. Masonry concrete footing and masonry in foundations are inspected before they are closed up. Concrete surface beds, construction joints, filling, infill of masonry, brick force Wire/Ties, fabric reinforcement and basement split level all form part of the sub-structure/foundation.

Super Structure – includes damp proof course, inspecting if brickwork is level and plumbed, windows and doorframes have been built-in correctly and chasing into the walls for conduits. Masonry panels, staircases, cavity walls, lintel design and bearing, precast lintels, suspended floors, roof and roof anchor, joints in slabs and intersection of walls.

Practical Completion: includes the geyser installation, plumbing, chasing, pipes, wall plates, geyser, purlin, beams, rafters, roof pitch, nail plated trusses, site plated trusses, hangers and brackets, bracing, pole structures, battens and purlins, roof covering, under tile membrane, valley lining, beam filling, metal lath, weep holes, plastering, firewalls, flashings concrete roofs, brandering, roof covering, plaster mix and glazing and timber quality size. The inspection models allows for work on multiple stages but in terms of closing, it must be closed systematically. The level of complexity in terms of electricity differs and is not the same as upmarket housing as the subsidy house is fitted with a distribution box.

Storm water: this covers the proximity of services to the structure, the fall level of sewerage pipes, as they have to go into the main line at a specific angle, what provision has been made for storm water management – the water must run away from the house and aprons, rainwater, gutters and downpipes. The builder has to ensure that the water does not pond next to the perimeter of the house.

The key difference between subsidy housing and Gap market is the size of the units and finishes, otherwise the units almost look similar.

Any structural change or alterations within five years of being built, will nullify the warranty. In exceptional cases, the NHBRC will investigate and if it was because of poor quality, the NHBRC will then assist the home owner. ■

Preparing for roof tiling

BACK TO BASICS

Inspectors Zondi Doro and Sinfingatwa Mantsha

The fully comprehensive NHBRC Home Building Manual is a valuable resource of information on every aspect of home building. The state regulatory body continues to raise the bar on housing and assists the sector. Here are some of the tips from the NHBRC Home Building Manual.

Concrete plays an important role in housing foundations and the type of cement, how it is stored, used and mixed all play a role in the final strength of the foundation.

THE CONCRETE FACTS

Cement in bags must be stored and protected from elements, which cause deterioration. Where it is necessary to store in the open, bags should be stacked on a wooden platform set on supports of at least 100 mm above the ground. Cover with a tarpaulin or plastic sheeting to ensure that water runs off without wetting the bags.

Bags should be stacked not exceeding 12 bags and arranged so that consignments can be used in the order of delivery, as cement which is stored in bags lose about 30% of its potential strength after about four to six weeks. If 'old cement' is used, then the mix must have a richer cement content. Cement that has lumps in it that cannot be easily crumbled with a finger should not be used.

Aggregates for concrete should be stored separately so as to prevent contamination.

Cement and lime should be measured by volume. A bag of common cement has a mass of 50 kg and a volume of approximately 33 litres when packed under air pressure at the factory.

Cement, however, fluffs up when poured into a container, and 50 kg cannot readily be contained in a box of 33 litres. The volume of loose (bulked) cement, depending on its compaction, can be up to 20% more than in a bag. For this reason it is always preferable to use whole bags of cement when volume batching.

Concrete mixed on site using common cements has a strength class of 32,5 MPa or more.

Concrete left standing for a limited period must be covered with plastic sheets or wet stacks to prevent it from drying out. Wet concrete needs to be remixed before being placed, in the event that stone particles have settled at the bottom of wheelbarrows during transportation.

Concrete should be deposited vertically into its final position to avoid segregation of aggregates.

Concrete must be compacted by mechanical vibrations or tamping, spading, rodding or forking so that the concrete is thoroughly worked against the formwork and around the reinforcement, and other embedded items without displacing them. This will ensure that the concrete is free from honeycombing and planes of weakness.

Inadequate compaction can seriously affect the quality of the concrete. The concrete may be assumed to be fully compacted when the air bubbles cease to rise to the surface of the concrete in being vibrated. Contact between the vibrator and formwork can damage the surface 'off-shutter' concrete.

Where possible concrete should be placed in a continuous process. If this is not possible because of weather conditions, construction joints at the point of stoppage may be formed by sloping the edge of the poured concrete at 45 degrees to the horizontal.

The surface of the joint should, prior to continuing with concreting, be brushed with a steel wire brush, swept clean with a light brush, wet and covered with a 10 mm thick layer of mortar, (composed of one part cement to three parts of concrete sand) before placing new concrete.

After the initial set, the concrete needs to be protected from contamination and loss of moisture by covering with waterproof sheeting.

Transporting bricks on site

The curing period takes at least three days and in cold weather this should be extended to five. In freezing conditions, the fresh concrete needs to be well insulated from the effects of cold weather.

When cement and water are mixed together to form a paste, a chemical reaction occurs and the paste sets and slowly hardens. In concrete, the paste binds the other constituent materials and will continue to harden and gain in strength as long as water is present. This hydration will continue as long as there is sufficient water available to support the process.

Curing is important to ensure that concrete hydrates in a proper manner. The gain in strength is initially rapid but slows down progressively. The purpose of curing is to control the rate of loss of moisture and to prevent plastic shrinkage cracking. Lack of curing affects the strength, durability and abrasion resistance of the concrete.

FORMWORK

Formwork should be erected with joints tight enough to prevent leakage of cement paste. Surfaces of forms that are in contact with fresh wet concrete ought to be treated with a coat of non-staining mineral oil, or a suitable releasing agent. In the case of timber forms, wetting the surface is acceptable to ensure easy release and prevent adhesion of the concrete to the formwork.

The formwork can be removed after the concrete has attained sufficient strength to support its own weight and any loads that may be imposed on it.

REINFORCEMENT

Reinforcement must at the time of the placing of the concrete, be free from rust, scale, oil and other coatings that may reduce the bond between steel and surrounding concrete, or affect the durability, or initiate corrosion. Ensure that water is used as a release agent on the formwork, to prevent contamination of the reinforcement. It must be secured by tying at intersections with annealed wire of 1,6 mm or 1,25 mm or suitable clips or fixed in position by means of hangers or saddles and aligned by spacers or other supporting materials.

CEMENT PLASTER

Common problems with cement plaster include crazing, cracking,

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debonding and lack of hardness. Crazing is usually the result of over trowelling a rich (high cement content) mix, or the use of sand containing an excessive amount of clay material. Cracking and crazing can occur due to the excessive loss of water from plaster in the first hours after application, exposure to the sun, wind, or by suction into the walls. Cracking can also develop after the plaster has hardened as a result of the use of poor quality sand, or the application of thick layers.

Debonding is generally a result of inadequate preparation of the substrate, such as not cleaning dusty, oily walls, or roughing up smooth surfaces, and not allowing the wall to reach the correct moisture content. It can also be caused by poor technique and the incorrect use of bonding agents.

Lack of hardness is associated with insufficient cement in the mix, the use of sands contained excessive fines, a mix with poor water retention properties, the addition of extra water after the first mixing or rapid drying out which means incomplete hydration of the cement.

GYPSUM-BASED PLASTER

Gypsum based plaster must not be mixed with a plaster made with common cement, as gypsum is a sulphate compound, which attacks common cement paste. This will cause swelling, softening and disintegration of the plaster.

CEMENT PLASTER FINISHES

Smooth untreated cement plaster rarely retains a satisfactory appearance. It tends to become somewhat patchy in appearance through slight, unavoidable variations in surface texture. Steel trowelling increases the likelihood that the surface will craze and should be avoided in external applications. A wood float finish is preferable when painting the surface.

PLASTERING

Before plastering commences, all chases with the electrical, plumbing conduits, boxes should be fixed into position. The first coat of a three-coat application is sometimes referred to as a 'scratch coat' and is frequently deeply scored to break the continuous surface to enable the second coat to be applied. Scoring comprises of parallel lines about 20 mm apart and 5 mm deep. A plaster comb can be used to score the plaster.

Plaster coats should ideally have a lower strength than the material onto which they are applied. Successive coats should be thinner than the coat to which it is being applied.

Plaster should not be applied during extreme temperatures and moisture conditions as it may affect

Inspector checks brickwork and levels

A subsidy house nearing completion

Reinforcement

Exposed trusses

Roof tiling

the finished work. Plaster should be firmly trowelled onto walls and executed in one operation. Plaster should be pushed onto the wall or ceiling using pressure to compact the plaster and to ensure full contact with the substrate. Once applied the plaster should stiffen.

It is important that the plaster does not dry out too quickly and should be dampened or sprayed with a light spray for a period of not less than three days. Successive coats should not be applied during this time. Once the substrate coat has hardened sufficiently another coat can be applied.

INSTALLATION OF CLAY AND CONCRETE ROOF TILES

Mechanical fixing systems may comprise either singly or in combination, mechanical fixings such as clips, nails, screws and cement mortars. Mortar for bedding and pointing comprises one part common cement and three parts sand and mixed in accordance to specifications. Fixing nails should penetrate battens to a depth of not less than 25 mm.

Damage due to excessive gusting occurs at eaves, verges and ridges. Mechanical fixing systems prevent tiles from being lifted off. All tiles should be aligned vertically, horizontally and diagonally and overlap each other by the minimum amount specified by the manufacturer, but not less than 50 mm.

At the beginning of the tiling operation, a course of tiles should be laid along the roof from right to left at the eaves and along the ridge. This procedure will ensure that the overhang of both verges, is equal. If the tiles do not provide the desired overhang at each gable end or do not fit, the lock tolerance on each tile should be opened or closed to achieve the desired overhand. It may be necessary to fix a cut tile at each end of the roof. Once the overhang has been achieved, it will then be possible to lay a course of tiles that are true and straight both horizontally and vertically. When this has been established, the battens at the gable end can be cut and verge counter battens (50 x 38 mm) installed.

Tiles in each course, or in each alternate course, should be set out in vertical alignment so that the tiling presents a regular and even appearance. All starters, finishers and full tiles at the end of each course at a gable should be mechanically fixed.

The cutting of tile ridges, hips, verges and valleys should be neat and present a straight line. Tiles at ridges and hips extend under the capping by a sufficient distance to be weatherproof. Similarly, tiles should overlap valleys by a sufficient distance to be weatherproofed. ■

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SPORTS SCHOOL

usually only found at the National Botanical Gardens at Kirstenbosch. The experimental farm's three yellowwoods species had to form part of the design."

"The Neo Dimensions design for TuksSport consists of separate and detached buildings, influenced by their various functions, and also incorporate a sense of openness to the landscaping. We wanted to keep the farm-like character and opted for buildings with raw finishes. Robust red face bricks were used throughout to commemorate the quarantine camps, as well as steel frame structures reminiscent of farm sheds. Off-shutter concrete was chosen for all soffits, columns and walkways for both robustness and the desired look and feel."

Kunz noted that environmental concerns were important in the design. For example, the north façade of the residential block features different bedrooms on each level that either protrude, or are recessed from the façade, to create natural sun control over the bedroom windows. Additional steel louvres were provided to the protruding bedrooms with their vertical window design. Furthermore, the flat concrete roof of the building can accommodate future 'green' facilities such as water storage tanks and solar panels. The hot water is currently generated by a heat pump with a water storage vessel. All sanitary ware was specified. The amphitheatre was influenced by the high difference in contour between the classroom buildings and the residential block.

"An amphitheatre was the ideal solution to accommodate this level difference and also produced the perfect school assembly space," he says.

Brown added that work started work in August last year and handover took place in July 2015, as scheduled. The site team included two senior foremen, a senior site manager and a full-time professional Health and Safety Manager. A total of 1 600 cubic metres of concrete and about 700 000 clay bricks were required for the building. The funding for the construction of the new TuksSport High School was provided by The Athletics Foundation Trust. ■

Members of the Association of South African of Quantity Surveyors (ASAQS)

Quantity surveyors expand green services

The increasing emphasis on sustainable construction has placed new and unprecedented responsibilities on the shoulders of the quantity surveying profession, according to Dr Deen Letchmiah, Board member of the Association of South African Quantity Surveyors (ASAQS).

Speaking at the recent ASAQS seminar, 'Building on Sunshine', held in Johannesburg, Letchmiah said that the days of quantity surveyors' role in the building environment concentrating mainly on cost control, were over. "Modern quantity surveyors need to consider the driving forces of the green environment in which they operate. They need to be holistic in thought and execution to drive sustainability directives and realise that all components of instructural development and operations must be reviewed to provide sustainable solutions."

Letchmiah said that sustainable construction presented new challenges - as well as important new opportunities - to quantity surveyors. "New services can now be offered to clients, such as analysing and advising on Green Capital Costs, promoting the benefits of Life Cycle management, Green Financing and Green Leases, and cost effective sustainable strategies. Property Performance Appraisals, Value Management and Engineering solutions, as well as the use of information technology such as Building Management Systems and Information Models, will now all form part of the services a QS can offer clients."

He added, Life Cycle Costing and Facilities Management, in particular, were two services quantity surveyors could offer and specialise in to achieve sustainable building.

"Life Cycle Costing, basically, can be defined as the sum of all recurring and non-recurring costs over the full lifespan or a specified period of applicable structures, goods or services. This includes the purchase price, installation and operational costs, maintenance and upgrading costs, and the remaining value at the end of ownership of the commodity in question - in other words: the total cost of ownership."

He also urged quantity surveyors to play a bigger role in Facilities Management. Some of the core skills in this category included: Construction, building technology and maintenance costs; Estimating and budgeting: Cost control and reporting; Managing building operations; Life Cycle costs; Understanding building components and functionality; Procuring goods, services and leases; Managing contracts and subcontracts; Understanding building management systems; and Integrating information and management systems.

"The growing green services and the roles of building industry professionals are changing rapidly and an integrated design process is required." Bert van den Heever, President of ASAQS, said that a tsunami of change was sweeping the planet, with the need to create sufficient renewable energy regarded as critical in many countries of the world.

Professor Chrisna du Plessis of the Department of Construction Economics at the University of Pretoria said that buildings were responsible for 90% of greenhouse gases because of the materials selected for construction. "We must support more renewable energy and the built environment has the biggest mitigation potential."

Logan Rangasamy, Head of International Economic Relations and Policy at the SA Reserve Bank added that the electricity crisis – is likely to last at least another five years in South Africa and this has created a huge market for sustainable solutions.

Henning Holm, architect and energy authority said real energy tariff increases had been above inflation since 2003. The real cost of energy was the loss of production when energy supplies were disrupted.

Graham Cruickshank of Ernst & Young emphasised the vital role of adequate public transport in a sustainable built environment.

Alwyn van der Merwe, Director of Investments at Sanlam, warned that consumer and business confidence was at its lowest ebb in 50 years and that uncertainty regarding energy supply played a major role in this disenchantment. ASAQS is currently conducting an in-depth and ongoing research study for the Green Building Council of SA on the comparative costs of 'green' and conventional design and construction. ■

Deep foundations for 11-storey residential block

Leading piling contractor, Gauteng Piling, provided intricate and robust foundation piling for the construction of a new 11-storey 240 unit residential apartment block in Kempton Park's Central Business District.

The main building contractor, BUA Africa Properties contracted Gauteng Piling to provide 100 auger piles to an average depth of 13 m, which serves as the foundation for the Kagiso residential development in Margaret Avenue, Kempton Park.

Gauteng Piling Site Manager, Rofhiwa Tshivhinda says that the auger piles covered an area of 3 000m^2. It took five weeks to install the piles after the existing structure had been demolished and the site cleared.

"A multi-storey building of this nature, towers over neighbouring structures and requires exceptionally strong piling to meet the high structural bending and horizontal forces. The specifications included two lift shafts on either side of the apartment block would act as shear walls to stabilise the entire building. Gauteng Piling used 18 piles underneath the lift shafts by inserting five additional micro-piles (eg piles-within-piles) to support and strengthen the foundations. The micro-piles were drilled through Cross Hole Sonic Logging (CHSL) tubes and extended into the pile cap.

"Exceptionally robust 36 mm Thread Bar steel rods (TB950) were then inserted by the overhead crane into the micro-pile anchors for additional stability. Each micro-pile was inserted to a depth of 6 m below the pile toe and were grouted at 40Mpa at a final depth of 20 m," said Tshivhinda.

All of these relatively voluminous and intricate components were housed in specially-designed 13 m long steel cages, with a diameter of 800 mm and weight of 1.8 tons each. The tensile strength of these cages for the lift shaft piles are almost four times stronger than the steel used for the rest of the piling cages on the project. To accommodate the wide cages, 900 mm diameter piles were drilled using two Williams diggers.

Prior Gauteng Piling's contract, the main contractor commissioned a company to handle the geotechnical investigations. This resulted in four large diameter auger trial holes being drilled in a grid pattern, spaced 30 m apart. "The holes were drilled to refusal on very soft, to soft, basaltic lava rock and showed that the maximum depths that could be reached before refusal were from 9.1 m to 13 m. Ground water was encountered at a depth of 11 m and therefore Gauteng Piling had to employ the drill-and-cast method of piling for the entire contract.

This form of piling calls for a concrete truck on standby next to the drill rig so that concrete can be cast immediately after the drilling flights are extracted to the surface.This prevents water ingress and collapse of the piles," said Tshivhinda.

Gauteng Piling, established by Nico Mass, a leading Master Builders SA industry stalwart and MBA North member, will celebrate its 20th anniversary next year. Gauteng Piling has in the past 19 years completed over 1 500 projects and is now one of the major players in the piling industry. ■

R813 bn for infrastructure

As Government gears up to spend R813 billion on infrastructure development over the next three years the Aggregate and Sand Producers Association of Southern Africa (Aspasa) is cautioning role players to begin consulting with building material suppliers in order to ensure availability and quality.

According to Aspasa director, Nico Pienaar, planning needs to be done in conjunction with all role players so that materials such as sand and aggregates are available where required. Depending on the grade and type of aggregates required, materials may need to be sourced from different areas which might complicate or drive the prices of projects up.

"Sand and aggregates in concrete, bitumen or as bedding material are the building blocks of almost all our infrastructure from roads to railways, building and pipelines. Yet few people realise how different the requirement is for each and every application.

Materials may need to be transported over long distances in order to ensure it is to the correct specification and quality. Alternatively contractors may be tempted to use unsuitable material from make-shift excavations or may source materials from illegal suppliers who could be practicing unsustainable quarrying to the detriment of its workers, surrounding communities, as well as the environment.

"Last minute planning has been responsible for badly thought-out borrow pits along our roads and railways in the past and these are still visible along our freeways where they have been left to scar the landscape forever. Borrow pits also jeopardise the sustainable employment of those in the quarrying industry as the borrow pits take away from surrounding quarries and make them less viable in the short term. In tough economic times this may be all that is required to close down marginal local quarries," says Pienaar.

He explains that by working with all the relevant industries, plans can be made in each industry to bolster supply to meet demands. Where local supplies may be an issue, the industry may even be able to work together to stockpile materials or source new and sustainable sources closer to where it is required.

This will also prevent collusion as all possible suppliers can be identified and terms, conditions and pricing obtained beforehand to ensure


Nico Pienaar

fairness. "We want to ensure that Government's projects are a success and benefit the population. In addition we want to ensure that our industry is ready and also stands to benefit from governments bold plans," concludes Pienaar. For further information contact ASPASA on 011 791 3327 or go to www.aspasa.co.za ■

Changes to Standards

Significant updates to the International Standards Organisation (ISO) ISO 9001quality management standard, this year, will have a major effect on the way quality is measured and managed within companies.

Although changes are designed to streamline and simplify the system, it will be implemented over a period of three years to comply with the new ISO 9001:2015 standard.

Addressing members of the Concrete Manufacturers Association (CMA) recently, standards expert Christel Fouché, CEO of Advantage ACT and AGO Certification, said that among the most significant changes will be a shift of responsibility to senior management rather than being the domain of companies' quality management representatives.

"Auditors will also have to adapt and will be required to interview senior management at CEO and similar level in order to ensure that standards are being upheld. While this may seem an onerous task, it is an absolute necessity for businesses as it is very difficult to do business without ISO9001 certification" said Fouché.

The new ISO 9001:2015 standard has been developed on the foundation of the new Annex SL document. This document will set the new quality standard in line with ISO14001 environmental and OHSAS 18001 health and safety standards and pave the way for easier implementation of integrated SHEQ management systems. Fouché recommends that quality management representatives be maintained and work hand-in-hand with senior management to implement quality requirements.


Christel Fouché

Likewise, she recommends that quality manuals also not be thrown out even though it is no longer a requirement. "Remember, when you are out of quality you are out of business," she concluded.

For further information contact the Concrete Manufacturers Association on 011 805 6742 or visit www.cma.org.za ■

READYMIX VS BAGGED FOR HOUSING BOOM

The readymix concrete industry supplies 15% of concrete used in South Africa as opposed to similar-sized markets around the world - where readymix comprises up to 75% of the concrete used in these countries.

While this is an alarming statistic according to construction specialist Don Schoeman of Crowbar Solutions, it represents an opportunity for the industry to win market share from competing segments and should form the basis of a new strategy for the readymix industry to pursue.

Addressing delegates at the South African Readymix Association conference, Schoeman says that the majority of cement supplied in South Africa is bagged cement sold through retails outlets. Of all bags sold, the vast majority is sold through a handful of retailers who employ slick marketing techniques to keep customers coming back for more.

In addition, the enormous buying power of these retailers continues to force cement producers to slash prices of bagged cement which enables them to maintain low prices compared with smaller users (such as the readymix industry).

He suggests SARMA should represent the industry to establish a united buying group and negotiate better pricing for its members. With competitive pricing, he suspects that the market share of readymix will increase exponentially in time.

Some of the standards governing the use of concrete are outdated and need to be changed. This is according to concrete expert George Evans of PPC, who is actively working with standards authorities and the industry to modernise the country's concrete standards. Many of the standards are currently being revised to meet the needs of the end users and ensure quality, price and longevity of structures. The standards currently being improved apply to the entire cycle from manufacturing, testing and placing concrete.

Furthermore, the country has adopted European standard EN1992 as the basis for our new standards and the team is currently modifying existing standards accordingly.

Highly acclaimed and well respected economist, Dr Roelof Botha, predicted a number of ups and downs in the market last year, of these 90% were realised.

According to Botha South Africa's mortgages are still low and the economy in general is under performing. He says that low commodity prices are due to swing as they follow cyclical movements and have done so throughout history. Despite challenges, the South African economy still continues to grow modestly and when commodity prices do improve he predicts that our economy is going to flourish. Added to that, he says that indicators are pointing that the country's property market is on-the-brink of the next property boom and that signs are already showing that the boom has started. Those able to invest in property or improvements may consider his 90% track record when contemplating their next investment.

Andre de Klerk of Eskom told delegates at the SARMA conference that load shedding will remain a reality for the next two and a half years. He said that the country has the ability to generate approximately 40 Gigawatts (GW) of electricity but loses 4GW for planned maintenance and a further 4GW for unplanned maintenance, which means that the nett output is 32GW of useable power.

"Best practice dictates that a further 15% be held available in reserve. Unfortunately for us the peak in summer is 33GW and 35GW in winter. This has resulted in our systems becoming overloaded and as a result, load shedding is being implemented in order to alleviate pressure off the grid. With no new projects able to generate electricity in the short term, Eskom needs to wait for Medupi and Khusile to come on line before there is a shift away from load shedding." ■

Women repair maintenance team

Six young women from Maitland Garden Village, Langa and Gugulethu, have been appointed as part of the Expanded Public Works Programme (EPWP) within Transport for Cape Town (TCT), in a bid by the city to tackle gender transformation head-on.

"The TCT Training Academy project supports our firm belief that gender should not determine one's fitness for employment or type of work," said Brett Herron, Mayoral Committee Member: Transport for Cape Town.

Women are generally under-represented in the transport sector. For example, within TCT, women constitute only 3,4% of those working in road maintenance and storm water infrastructure.

"We are confident that this pilot project will assist us in changing perceptions about the type of work women can do. The women who have been appointed to participate in this programme all share a passion for work that benefits communities and have the desire to prove their ability to compete equally in a workplace that is commonly associated with men,"' said Herron.

The City of Cape Town's transport authority, Transport for Cape Town (TCT), recently introduced the first all-women roads repair team based at the Ndabeni Roads Depot.

A second team of women will be employed during the 10 month pilot project. The TCT Training Academy has designed a monitoring system that will draw all the relevant information to develop the programme further. We have plans to partner with the private transport sector to embark on developmental programmes that will meet the industry's requirements," said Herron.

TCT's Training Academy assisted management at the Ndabeni depot to identify suitable candidates from the local database in accordance with the City's Expanded Public Works Programme policy. The candidates were tested and assessed on their ability to perform the type of work required. The city has allocated R500 000 for training. This includes:

- Storm water infrastructure: cleaning, unblocking, and repairing pipes, manholes and catch pits
- Footways: edging, paving, operating rollers and raking of the pre-mix used to repair surface patches
- Roads: repairing potholes, surface patches and edges, curb-laying, and operating machinery
- Line marking: painting straight lines and legends on road surface; planting of poles and signage; stencilling of street names on curbs; painting of curbs and street name curb moulding

Apart from the technical aspect, the women will also be given life and entrepreneurial skills, conflict management resolution and team work.

Ndabeni was chosen as the ideal environment for launching this pilot project in terms of the infrastructure, training, support and resources needed to ensure that the women-only team succeed.

"We are looking forward to seeing them working on the streets and sidewalks of the city and hope that this initiative inspires the private sector to appoint more women to positions that are generally regarded to be the ambit of men," said Herron. ■

Bathroom installation project

The City of Cape Town's R8,5 million bathroom installation project in Netreg, a housing estate neighbouring Bonteheuwel, is nearing completion. Fully functioning bathrooms have replaced previous free-standing toilets.

The City of Cape Town identified 96 free-standing toilets on its properties in the Netreg area and set out to demolish them and replace them with full bathrooms. The new facilities are attached to the units and include bath, basin, kitchen and wastewater gullies. The project is due for completion by October 2015.

The City's Mayoral Committee Member for Human Settlements, Benedicta van Minnen says, "Providing residents with access to a fully functional bathroom attached to their dwelling is one of the ways in which we aim to restore dignity to the previously disadvantaged residents of Netreg.

We are proud of our progress with the installation of these bathrooms. The perseverance of our Human Settlements Department officials has to be admired as they have been able to forge ahead with this project and deliver as promised despite harsh weather conditions, vandalism and crime in the area." ■

Geberit's Kombifix

South African sanitary technology and ceramic products supplier Geberit has announced a number of new additions to the range. This includes the Kombifix concealed cistern with Sigma01 dual flush actuator plate in white.

The trend in bathrooms is towards a minimalistic and elegant look and form and function are balanced with a creative and beautiful design.

Geberit's concealed cisterns play a large role in this trend which cleverly conceals the plumbing and piping in the wall. The Geberit Kombifix cistern wall hung toilet, together with the Geberit Sigma01 dual flush plate offers a beautiful functional design. It is suitable for installation in solid wall constructions and the reliable system operates quietly and efficiently and the factory settling offers a dual 3 or 6 litre flush option, which saves water. It is simple and practical to install.

The Sigma01 Actuator/Flush Plate reflects the contemporary trend towards minimalism and simplicity in the bathroom. The two overlapping circles within the Sigma01 flush plate require just a gentle push to operate the desired flush volume of the toilet. It has been designed to make it easy for the user to identify the flushes, with the large button activating the full flush of six litres and the smaller one activating the single flush of just three litres.

The Geberit Group has 35 production facilities worldwide and is the European leader sanitary products. Headquartered in Switzerland the company operates in 40 countries. ■

PLASTIC PIPES SAVE WATER LOSS

The earth is parched and worldwide, countries are facing periods of intense drought. Areas such as California are currently in the midst of the worst drought the state has seen in its 164-year history, with 38 million residents under strict water conservation rules to reduce urban consumption by 25% compared to 2013.

In South Africa, water restrictions were recently imposed on several areas in KwaZulu-Natal following insufficient rainfall in the province. According to Water and Sanitation Department Director-General Margaret-Ann Diedricks, water use for irrigation from the Goedertrouw Dam would be cut by 70%, with domestic use cut 30% and industrial use by 10%. Understandably, the goal is to safeguard the area's remaining potable urban water supplies in preparation for a possible extended period of drought.

The Southern African Plastic Pipe Manufacturer's Association (SAPPMA), however, is pushing for what many in the industry say is a longer-term solution: Saving water with plastic pipes. "For the past four years, we have been voicing our concerns over the severe pollution in our water sources, water losses in distribution caused by water leaks and wastage, and the lacking water infrastructure that is expected to support the rapidly increasing demand," says Jan Venter, Chairman of SAPPMA.

This non-profit association represents more than 80% of the plastic pipe manufacturers in South Africa and focuses its efforts on ensuring pipe systems that are leak-free and durable for long-term use. It also focuses on the rehabilitation of old pipelines. Pipelines lie at the heart of South Africa's infrastructure and should be replaced before they fail. Water distribution, waste disposal, irrigation and telecommunications all rely on pipelines to function," he explains.

Although the South African plastic pipe industry is relatively small, it is of extreme importance in the development and maintenance of the country's infrastructure. It is also one of the most demanding industries, as plastic pipes and fittings are required to last in excess of 100 years, as opposed to the old cement, asbestos or steel pipelines that had a lifetime of no more than 50 years.

"Two major causes of water loss are corrosion and poor jointing. For this reason, old steel or asbestos pipes around the world are being replaced with plastic pipes, because they do not rust and the joints are leak-proof," said Venter. The majority of South Africa's pipelines were installed in the early 1950's and 1960's, and were made of cement, asbestos or steel. Although the exact makeup of the buried water systems in this country is not known, cast iron pipes were used from 1870-1930; cement-lined cast iron from 1930-70; asbestos cement from 1950-70; ductile iron pipes from 1960 and PVC

from 1970 onwards. “The old cement and steel pipes that were installed do not have an economic lifespan of longer than 50 years. The fact that they are undoubtedly corroded by now can be seen from the water leaks that are springing up everywhere and disrupting water supplies. Litres of treated water is lost each year around the country as a result. If the local municipalities were only to spend the money allocated in their budgets to upgrade and replace old and failing water infrastructure, we would then be able to save enough purified water to significantly reduce the impact and long-term effects of the below average rainfall,” Venter says.

Local plastic pipe manufacturers and installers are hoping that the water scarcity concerns and the threats of ‘water shedding’ would be the conduit in which we would see old pipelines being replaced by plastic pipes made from PVC or high density polyethylene. The benefits of using plastic pipes as opposed to other materials have been well documented and tested.

Apart from having a lifetime that is more than double that of other materials, plastic pipes are also quicker and easier to install, have lower failure rates, less corrosion, fewer joint leak prevention and lower in price compared to the other pipes.

Says Venter: “HDPE and PVC pipes are lightweight and easy to handle, easy to join, available in a range of sizes and pressure ratings and have low frictional resistance, with hydraulic properties that remain virtually unchanged over its useful life, resulting in lower energy use and pumping costs”.

“The Water Research Commission completed a survey of 132 municipalities in South Africa a few months ago. Findings revealed that water lost through leakage, incorrect metering and unauthorised consumption, averaged 37% of our country’s available water supply. This amounts to a financial loss of around R7,2 billion per year.

South Africa simply cannot afford to continue losing so much treated water,” concluded Venter. ■

BRICKWORK REVITALISES

Sitting aside Kings Park Stadium and near the iconic Moses Mabhida Stadium, Durban's Lion Match Factory holds its own as one of the warm city's memorable architectural landmarks.

Property development and construction group, JT Ross, bought the 90-year-old site more than 10 years ago when Lion Match moved its manufacturing operations to Gauteng. Rejuvenation of the site, on Durban's inner city fringe, began under the guidance of Dean Jay Architects.

Listed as a heritage site, construction of the new buildings and refurbishment of the existing buildings was carefully monitored with the architects opting to blend the old and new buildings seamlessly, yet with pertinent distinguishing features.

Sarah Fourie of Dean Jay Architects, said the bricks used in the refurbishment were a mixture of reused old bricks from one of the demolished warehouses, alongside Corobrik's range of terracotta satin face bricks and burgundy pavers.

"We wanted to match the new bricks with the older ones while playing with different brickwork styles throughout," she explained. "We highlighted the new additions as obviously modern rather than trying to repeat the traditional design. While with the new contemporary additions, we have used the same colours and materials that were used in the original buildings."

Allin Dangers, Director of Corobrik, said it was rewarding for Corobrik to have its products involved in redefining the spaces of this beautiful Durban landmark. He said the terracotta satin face bricks were the perfect choice to blend with the older bricks and the variation in brickwork

LANDMARK

pattern gave character and charm to the individual buildings.

The interiors of the existing buildings have retained the industrial, factory design with exposed trusses and clerestorey lighting, to admit light and fresh air.The internal face brick has been painted in shades of white and grey which introduces different textures while in keeping with the industrial feel.

The older buildings have also retained the original English bond brickwork pattern on the plinth which correlates with a number of the signature building aspects such as the "signage walls" which have been constructed using reused old bricks.

"We wanted to sustain what we could from the old structures but have made the style quite obvious in the newer structures," explained Fourie.

The trendy Boiler Room cafe, housed in the original factory boiler room has a much more modern feel. This sits alongside the eye-catching chimney stack which has retained its original brickwork yet blends in with the newer structures.

One of the newer buildings is the impressive six-storey building on the eastern side of the property, which comprises a parkade and office block. The southern side has an immense 18 m high face brick wall, which proved to be a significant design challenge for the architects.

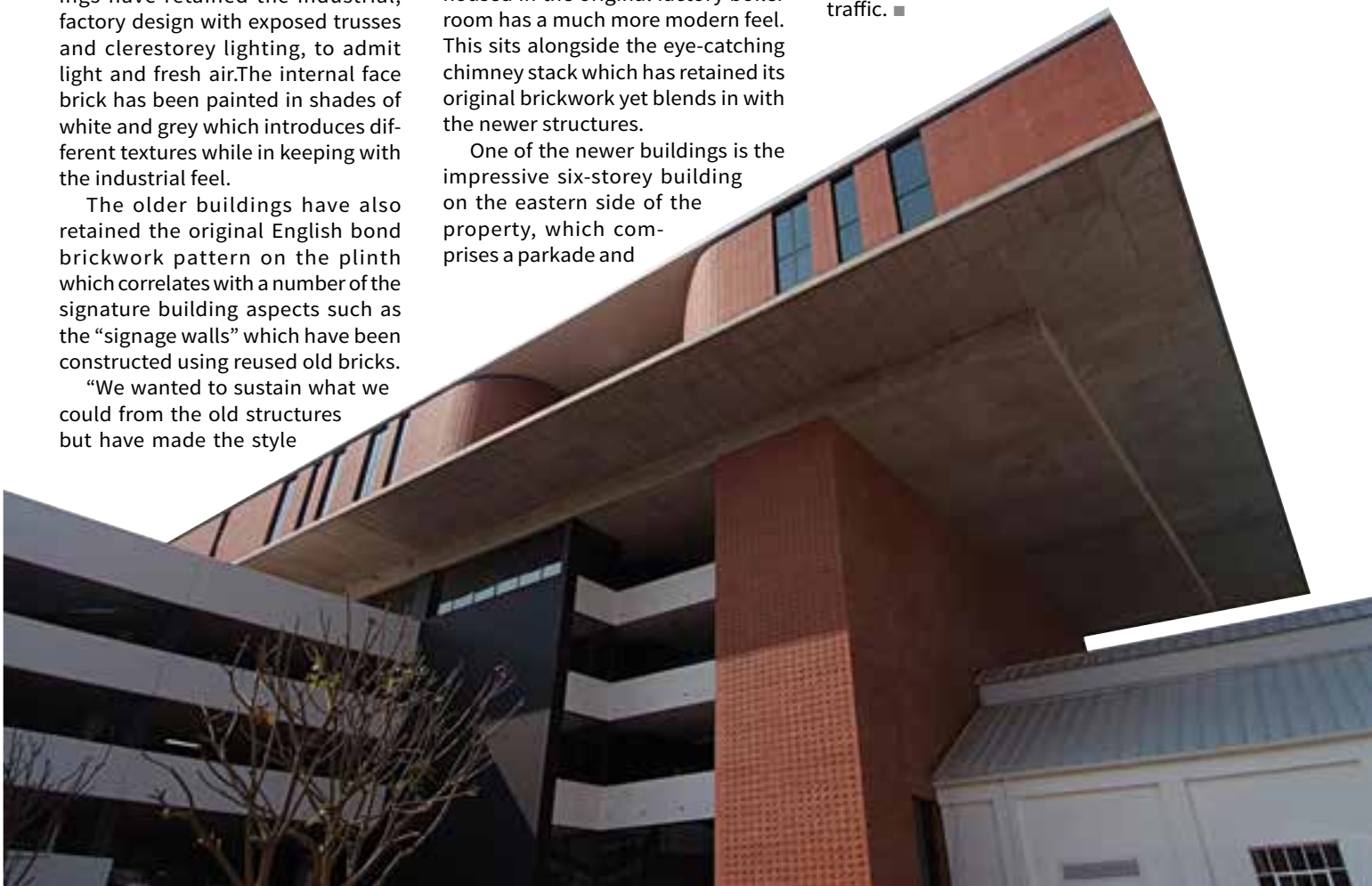
"The original idea was to reuse the old bricks from the demolished warehouse for the wall but, because it is such a vast expanse there weren't enough and we tried different patterns. Corobrik were fantastic, supplying us with a number of samples. The terracotta satin face bricks were the perfect choice, effortlessly blending the feel of the older buildings with a modern look," said Fourie

The design selected for the wall was English bond brickwork with a relief pattern whereby every second half-brick protrudes from the wall by 15mm.

"There was a lot of experimentation on how far the brick should protrude - too much and it would become a dust trap - but it had to project enough to create an interesting façade."

The 15 mm projection created different shadows throughout the day so that the look of the wall constantly changes. The inevitable efflorescence – a white, salt deposit from the face brick – is disguised by the pattern of the bricks.

Dean Jay Architects selected Corobrik's range of Burgundy pavers and used a Herringbone pattern for the heavy vehicle traffic and a stretcher bond pattern for the pedestrian traffic. ■



Philippi Village – a major catalyst for growth

Within Philippi in the Cape Flats there is a lack of office space for local businesses. 'Philippi Village' is an entrepreneurial development, which provides a space where entrepreneurs and businesses can grow and where residents can develop skills and increase their employability. This development will invigorate the area with work, trade and recreational activities. Entrepreneurs will be encouraged to cluster and collaborate to strengthen their businesses, stimulating local entrepreneurship and create promising economic futures within Philippi. Businesses located within Philippi encourage job opportunities for residents within the area and negate them travelling long distances in search of work.

The Business Place Philippi in partnership with The Sustainability Institute at the University of Stellenbosch raised funding to conceptualise the project to transform the old cement factory site in Philippi into a mixed use integrated development with light industry, residential, food gardens and a hospital. The project was designed as a thesis project for a Masters in Sustainable Design by one of Cape Town's acclaimed architect's, Philip Briel. This all started in the early 2000s when The Business Place Philippi became the owner of the old cement factory premises.

The residential component and gardens have been planned and will roll out at a later stage. The Business Place Philippi has already provided over 4 000 people with business and development services. The renewal of the much bigger factory precinct as a business office space required development funding. An R80-million cash injection in the form of a joint investment from the Bertha Foundation at UCT's Graduate School of Business and the Jobs Fund. This enabled the construction of the new Business Hub and set the ball rolling for the remainder of the project. Already the ground floor has been fully let. Half of the offices on the first floor, which have been configured to offer much smaller premises, have been taken up, whilst the top floor has been designed to accommodate large companies such as call centres.

A pre-primary school has opened its doors, a Leap Maths and Science Academy has begun operating and the Department of Coffees is about to start trading on the mezzanine concourse. A City Library will be located on the ground floor.

There are a number of entities with a similar vision, who aim to make a difference to the lives of people in the area. This includes Abalimi Bezikhaya, which provide support to urban micro-farmers, Simphiwe Shoes, a small start-up company and the AfriCan Café bakery and coffee shop offers coffee, cakes and skills training.

Founding members of The Business Place Philippi, Alan Fleming, has designed a container-based fish farm. The concept is to develop commercial aquaculture and create job opportunities in poorer urban areas has proved successful. 'The Fish Farm' has already received several innovation awards.

The next phase will be the launch of the Container Walk. The pilot project 24 remodelled shipping containers to form a dedicated precinct for small businesses. The design will give business owners the flexibility to configure their premises to suit their individual needs. The first 24 containers are fully subscribed with more containers in the pipeline.

Amor Strauss, the General Manager of Philippi Village added that the Container Walk will be officially launched shortly. With the MyCiTi bus system rolling out in the Philippi area, this bodes well for the economic node.

Thomas Swana, CEO of the Philippi Economic Development Initiative (Pedi), says that Philippi Village is poised for greater development. ■

South Africa is in need of a new definition of communities where integration is felt on all terrains: working, living, socialising and recreation, shopping in an area that is safe, accessible, of mixed usage and allow for the integration of all economic classes and races.

SOLAR PANELS FOR TAXI RANK

The City of Cape Town opens a green taxi rank with solar panels in Nomzamo.

The City has transformed the informal taxi rank opposite the Nomzamo Community Hall in Lwandle into a sustainable public transport facility with solar panels on the roof, washing facilities for minibus-taxis, kiosks for informal traders and bathroom facilities for commuters.

Previously, minibus-taxis at the informal rank in Nomzamo operated from a potholed asphalt surface with inadequate food and seating facilities, no bathrooms and very little shelter against the elements.

The City's transport authority, Transport for Cape Town, came up with a new design focused on providing the residents of Nomzamo with a dignified space where they can board taxis," said Mayoral Committee Member: Transport for Cape Town, Brett Herron.

Since the recent opening 115 minibus-taxis have been operating from this facility transporting more than 20 000 local residents. The majority of the commuters travel to work in Somerset West and Stellenbosch central business districts, Somerset Mall, the Strand railway station, Gordon's Bay and Heldervue.

"The new rank aims to accommodate the minibus-taxis in the most efficient manner, reducing the traffic violations on Michael Street. Our main focus, however, was on the safety and comfort of pedestrians and as such, the roadway along Michael Street, which passes through the minibus-taxi precinct, has been raised and paved with a grey interlocking concrete paver so that drivers are aware that they are entering a public transport area with a high number of pedestrians,' said Herron.

Overhead canopies have been provided at the loading areas, as well as the pedestrian walkways, providing commuters with protection against the sun and rain. Low walls and bollards under the trees can be used for seating and there are a number of refuse bins to discourage littering.

Apart from an administration building, the facility is also equipped with a security tower that has an unobstructed view of the taxi rank, pedestrian walkways and the community centre.

The taxi wash bay accommodates two minibus-taxis at a time and has an overhead canopy, metered water supply, as well as an underground oil separator, which prevents oil and grease from entering the sewerage system.

TCT has also constructed six kiosks for local traders and entrepreneurs. "This is a great business opportunity for a local entrepreneur providing food and refreshments. Each kiosk has been provided with water, wash basins, fat traps and an extractor.

The water and electricity costs will be recovered from the traders as each kiosk is metered separately. Construction of the R12 million taxi rank has a rooftop solar photovoltaic panel system for electricity generation, there are 68 solar panels on the roof, arrayed at optimum orientation to the sun, which provides 16% of the entire facility's electricity during the peak periods, inclusive of the trading kiosks. The taxi rank will be provided with batteries for the storage of reserve solar electricity, which will be used at night or on cloudy days, ensuring the taxi rank can operate completely off the electricity grid," said Herron. ■

Atholl Towers

The Atholl Towers office development in Johannesburg, South Africa, was recently awarded a 5-Star Green Star SA Rating by the Green Building Council of South Africa (GBCSA).

Aurecon was commissioned by ALW Estates to provide Environmentally Sustainable Design (ESD) services for the project, which exceeded the initial Green Star ambitions for the building by incorporating a range of innovative sustainable features.

Located between Katherine and Patricia streets in Sandton, Atholl Towers was developed in two phases. The first phase was completed in 2011 and comprises a 4 500 m^2 office building with the Volkswagen Group South Africa's Sales and Marketing Operations as tenants. The second phase consisting of 10 211 m^2 of offices and 480 parking bays with five basement levels was completed in April 2015.

Marni Punt, Environmental Sustainable Design (ESD) consultant at Aurecon, says the building is a modern, iconic design with open concept spaces. Some of the noteworthy aesthetic features include full-height façades, frameless glass and overhanging elements that create uniquely framed views of a shared public outdoor area between the two phases.

"For example, the frameless, full-glass façade is not only energy efficient, but it has a self-cleaning silicone base that ensures minimal maintenance over the coming years," says Punt.

Some of the other energy efficiency features include optimised air conditioning, a central heat recovery system and motion sensor light fittings. The domestic hot water system is integrated with the air conditioning system to receive recovered heat during cooling or simultaneous cooling and heating modes. When cooling is not required by the air conditioning system, it acts as an air-cooled heat pump to efficiently deliver heat to the domestic hot water system.

Sustainability initiatives that were incorporated include the use of recycled shutter boards for concrete casting, recycled steel components, the use of low Volatile Organic Compound (VOC) paint, low formaldehyde timber and finishes, the smart application of insulation materials and blinds to maximise thermal comfort for building occupants, as well as a rainwater harvesting and water conservation systems.

The project also has an extensive metering system connected to a fully automated Building Management System. A total of 55 power meters are distributed throughout the building and water meters have been installed for all major water uses. This is an important building management tool that will assist the facilities managers to efficiently manage the building in future. Access to consumption data is provided via the local facilities management PC or via a web browser. Trend logs will display the history of the water and electricity meter values, allowing usage trends to be accumulated and analysed to identify when and where peaks occur. ■

New sanitation plant

Leon Basson, Shadow Deputy Minister of Water and Sanitation for the Democratic Alliance says that the Minister of Water and Sanitation, Nomvula Mokonyane, is expected to sign a R10 billion contract to build an acid mine desalination plant.

Experts in the industry have reported that this 'pump and treat' plan is ill-considered, economically unfeasible and environmentally unsustainable. Basson says, "We will request that the Portfolio Committee Chairperson, Mlungisi Johnson, invite South Africa's leading scientists and experts in the field to present their concerns in relation to the Department's plan."

A key concern, according to experts, is the exorbitant cost of treating acid mine water to a potable standard.

"Whilst we understand the enormous risk our country faces with regard to water shortages and that an urgent plan is required - we must approach the solutions in a holistic manner to benefit from our interventions – and one that does not result in crippling costs."

The Department has estimated that there is sufficient water in Gauteng until 2018, but thereafter there will be insufficient water to continue the dilution process of mines in the western basin. This will have an impact on Gauteng and the Free State. As this long-term plan will be implemented by both the Departments of Water and Sanitation and Mineral Resources, Basson questions how much money departments will contribute towards construction and operational costs of the desalination plant.

Basson urges Mokonyane to table this plan before Parliament as a matter of urgency to address all the issues. ■

POLYPIPE FOR AFRICA

In the process of this growth, however, it is important that construction does not come at the expense of the natural environment and local communities and, as Philip Wood of Polypipe explains, there are ways in which responsible road construction can contribute to water conservation and reuse.

The need for transport development in Africa is clear. Continent-wide, there are 204 kms of road per 1 000km^2, of which only a quarter is paved. Put into perspective, the UK has more than 6 000km of paved road per million inhabitants, compared with 1,367km in South Africa and just 19km in South Sudan.[1]

Statistics like this have prompted many agencies into action – the Program for Infrastructure Development in Africa (PIDA) committed 30% of its budget to transport, aiming to grow the current network of major roads from 10 000km to 100 000km by 2040.

Similarly, the South African Government's 2012 National Infrastructure Plan committed to invest R827 billion into building new and upgrading existing infrastructure, in the three years.

In its 2014 Annual Report, the South Africa National Roads Agency Ltd (SANRAL), outlined its commitment to sustainable building practices, citing a close partnership with the Departments of Water Affairs (DWA) and Environmental Affairs (DEA), as well as working to improve the storm water and subsoil drainage installations for enhanced environmental management.

Throughout Africa, efforts are concentrated on improving the continent's road infrastructure network, with a view to improving access to healthcare, education, employment and trading opportunities.

Already in 2015 the South African sugar industry is facing potential losses of R920 million due to drought in the KwaZulu-Natal province where a disaster has been declared in the majority of districts.

This instability in precipitation leads to a clear need for efficient rainwater storage and harvesting – protecting property, livestock and people from flash flooding while enabling rainwater reuse to aid in times of need. Incorporating effective drainage and water storage solutions when planning road infrastructure projects is one way to mitigate the effects of excessive rainfall or extreme shortage, enhancing the environmental credentials of transport projects as well as the safety of road users.

There are a number of drainage, storage and water transport options available to optimise surface water and storm water drainage, suitable for installation beneath or adjacent to the carriageway as necessary. Polypipe, the UK's leading manufacturer of plastic piping and water management systems, works closely with infrastructure bodies in Britain and worldwide, including the UK's Highways Agency to design solutions for the most challenging applications and these products are ideally suited to the particular challenges of road infrastructure installations in Africa.

In the last few years, Polypipe partnered with a leading engineering solutions provider to deliver large-scale that included major transport link between London and Wales. The improvement works, covering one of the busiest junctions in the country, focused on stabilising the road surface and improving drainage works – in all, 15 000m^2 of lime-cement stabilisation work was completed. Polypipe's Ridgidrain solution was selected to provide a drainage solution capable of transporting large volumes of water away from the road surface to maintain safety and stability.

Ridgidrain is a highly popular solution for both infrastructure upgrade and new road projects. It offers excellent hydraulic performance, high corrosion and impact resistance and a simple but secure jointing system. Ridgidrain was supplied in a variety of diameters from 150 to 450 mm to suit the water management system, and as it is manufactured from lightweight, easy-to-handle high-density polyethylene (HDPE), can be supplied in long lengths for minimal jointing. Its flexibility and structured ring design means it can resist high traffic loads without cracking or leaking, and the pipes are less likely to block due to an extremely smooth bore, minimising maintenance.

For further information visit www.polypipe.com/international ■

AUHF 2015

The African Union for Housing Finance (AUHF) 2015 conference and exhibition will take place at the Safari Hotel and Conference Centre in Windhoek, Namibia on October 26-28. The 31st annual conference and exhibition attracts key stakeholders from the member associations of mortgage banks, building societies, housing corporations and organisations to fund shelter and housing on the African continent.

This year's theme 'Making Housing Finance Markets Work in Africa' aims to address the changes in the market and there is clearly room for growth, by comparison to international mortgage markets.

The World Bank estimates that if only the top 3% of Africa's population were to access mortgages, the continent's mortgage debt to GDP ratio could rise by 18% (excluding South Africa). This activity could contribute as much as US$300 billion to GDP across the continent.

Then, there is the much wider market for non-mortgage housing finance – pension backed lending, housing microfinance and savings to support households' incremental housing processes.

The event is coupled with an exhibition of practitioners, lenders, developers and building material suppliers.The conference is presented by the AUHF in association with SBS Conferences and hosted by the National Housing Enterprise, Namibia.

For further information email: antony@sbsco.za or visit www.sbs.co.za/auhf2015 ■

Free biometric support

In celebrating a decade of excellence, the South African biometric solutions provider Ideco is offering its partners and customers free support through its world-class repair and support centre.

Ideco is the certified repair and maintenance agent for global electronics solutions company Safran Morpho in sub-Sahara Africa.

Ideco Managing Director Marius Coetzee says, "We have more than 10 years of experience of intricate repairs. We go beyond board replacements to guarantee our customers the lowest total cost of ownership. More importantly, we offer free support to all our partners and customers. That's the difference!"

Coetzee says Ideco's Repair Center offers a 'Fast Track' option to ensure mission critical equipment is given high priority. "Be sure to ask for the fast track option when booking in any urgent repair."

A two hour warranty swap-out or repair is available for all products sold through Ideco's official distribution channel and are covered under the standard or extended warranty options. The company keeps sufficient spares and stock on hand to ensure that repairs can be completed as quickly as possible.

"As an added level of convenience, customers have access to an easy online tracking option through our web portal that allows them to track repair progress online. Automated reminders are also sent after three months to ensure devices are not forgotten," he explains.

"Our repair centre still offers repairs on discontinued Morpho access devices and our repair centre has sufficient spares for all devices. For peace of mind, make sure you deal with one of our certified partners when selecting a biometric solution," he concludes.

Ideco is regarded as Africa's leader in the design, distribution and integration of biometric solutions. This is largely due to the extensive and specialised experience gained from implementing notable large-scale civil and forensic projects. These include the world's largest digital conversion of paper-based fingerprint records for the HANIS project of the South African Department of Home Affairs and the implementation of an automated criminal background checking service in partnership with the South African Police Services (SAPS).

In South Africa, Ideco has distributed well over 100 000 fingerprint readers which have been deployed to securely manage more than 2,5 million people in a diverse range of professionally-managed, security-conscious businesses.

For more information contact Ideco on 086 104 3326 or visit www.ideco.co.za ■

Glue free linking system

The flexible adhesive-free system used to install Interface carpet tiles offers a versatile, practical solution for residential and commercial use.

Kevin Bates Alberts Carpets (KBAC), sole distributors for Interface, launched two new eco-flooring ranges Equal Measure and Near and Far, from the world's largest modular flooring producer.

Interface TacTiles are small, clear plastic adhesive squares placed under the carpet tiles to link them firmly to each other. This system creates a floating floor layer with the carpet tiles securely held together, but not permanently stuck down.

Lesley Fidrmuc from KBAC explains, "Compared with traditional carpet tile glue, TacTiles are environmentally-friendly and bring no volatile organic compounds (VOCs) and unpleasant glue odours to the home or office. This greatly improves indoor air quality and, in the business environment, means that an adhesive-free installation of carpet tiles is possible while staff are working, as there is no disruption of business or inhalation of glue fumes by employees. TacTiles are quick to install and do not need time to set: as soon as the carpet tiles are laid, the floor is ready to use. There is also no sticky mess on the backing and no need for a costly clean-up of the sub-floor."

Fidrmuc said, clients have also realised the potential of simply changing Interface carpet tile "rugs" to match new décor and moods. "Drawing from Interface's vast range of carpet tiles, the rugs could feature unlimited patterns or designs. One visitor, for example, indicated that he would link various Interface carpet tiles to form the British flag on his tiled rug. Generally, the stand showed the unlimited potential of Interface carpet tiles: from full-floor installation to decorative rug applications - all incorporating the different patterns and colours that carpet tiles make possible; and all linked with the TacTiles adhesive-free method of installing carpet tiles," she added. ■

Save the date

The 2nd annual Women in Energy conference will take place at the 2016 Africa Energy Indaba on February 16 and 17 at the Sandton Convention Centre and promises to build on the success of the 2015 event. Following the success of the inaugural Women in Energy Conference, the Africa Energy Indaba will again be hosting the Conference as an official event. Programmes favouring renewable energy and energy efficiency will create numerous jobs and business opportunities throughout the African continent, and women have a large role to play in the development of sustainable energy projects.

The Women in Energy Conference has been designed to recognise the increase in leadership and development of women involved in the African energy sector. Last year, NEPAD Agency CEO, Dr Ibrahim Mayaki said, "It is high time to empower women to leadership positions in the energy field in Africa and to tap into their valuable contributions, skills and competitive advantage, to solve Africa's huge challenges of energy shortage. Energy is a very wide field and opens enormous job opportunities for women at all levels to show and use their talent, be it in traditional means of generating energy or renewable or gas and fuel."

The event provides a platform for women to network, share their knowledge, and discuss achievements for the advancement of women to leadership positions across all Energy sectors.

This is your opportunity to play a role in developing women in the energy sector across Africa!

For further information go to www.africaenergyindaba.com ■

Quality control and tender submissions

Streamlining business through systems and efficiencies is non-negotiable in a highly competitive and often saturated marketplace – but in the quest to cut costs and still remain efficient, quality cannot be compromised.

Virginia Voigt National Quality Manager at GIBB, a leading black-owned engineering consulting company says, "Quality control is essential to building a successful business. It ensures adequate delivery of products and services that meet or exceed clients' expectations."

"Sufficient quality control and measures also form the basis of an efficient business that minimises waste and operates at high levels of productivity," she adds.

Voigt is responsible for establishing the processes needed for quality management systems and to warrant their correct implementation and maintenance.

Quality is also a top priority of the Tender department at GIBB, led by Niri Jainath. She shares, "As the Head of Tenders it is my responsibility to ensure that our tender submissions are of the highest quality and distinctively demonstrate the GIBB value proposition. This is achieved through the establishment, implementation and maintenance of the GIBB tender process."

A high level of detail goes into a tender document especially with the various compliance requirements, and the omission of anyone of these requirements could render the tender disqualified, Jainath therefore ensures that the tender process accommodates for stringent checks before submitting. "High level research into the client's business and industry requirements are coupled with internal knowledge to develop a client specific tender submission. Tenders are generally packaged according to the client specification. Resources vary between tenders, however general internal resources would comprise technical, editorial and production resources," added Jainath. The ISO 9001 is a quality control system based on an internationally recognised standard which is published by the International Organisation for Standardisation. The ISO 9001 provides a strong foundation for achieving a wide range of marketing and operational benefits. At GIBB, ISO certification audits are conducted annually. Internal audits are conducted according to audit plans which are compiled quarterly. This is to ensure that new, as well as long-running projects are audited.

"We conduct regular internal audits (last financial year we completed 145 audits) which plays a pivotal role for the external audit and managing GIBB's risk." Voigt adds that GIBB has been re-certified until June 2018. "Having an ISO certification also has benefits for tenders, as it gives credible weight to our proposals by providing assurance to our clients that we are compliant with international quality standards."

However, even with the backing of ISO, industry challenges and competition still exist. Voigt summarises, "When quality is incorporated into your everyday work life, it becomes a habit. The system enables us to execute high standard deliverables which makes an impact on clients' impression of the firm. The ultimate aim is client satisfaction and clients can be assured of quality services." ■

CI information specialist

Susan Battison, Bongani Methula and Kizzy Shipalana.

Kizzy Shipalana has joined The Concrete Institute's Information Centre team as Information Specialist. A qualified Librarian with more than 10 years' experience in the field, Shipalana started her career at the South African National Biodiversity Institute (SANBI) as a library student in 2001. In 2003, she was appointed permanently as a Librarian. Shipalana worked for Ditsong Museums of South Africa from 2007, also as Librarian, prior to joining The Concrete Institute. She holds a BA (Hons) Library and Information Science degree, from UNISA. ■

Textured paint

A wrinkle-finish paint that adds natural texture to metal roof tiles, cladding and decorative surfaces is in demand by specifiers and architects across the country.

The BeckryTex 351 paint recently introduced by global coil and industrial coatings specialist, Beckers Industrial Coatings offers durability under harsh African conditions. According to Beckers' Managing Director Sub-Saharan Africa, Willem van Heerden, so far the coating has proven popular north of the border due to the product's superb finish that closely resembles real concrete tiles or textured natural cladding.

"On roof tiles for example, instead of adding chips, sand, adhesive, colourants etc to the coating, manufacturers can instead use the wrinkle finish coating, which has 100% adhesion and can be pre-coated onto coils for use by manufacturers. step process like any other coil or sheet plating process," said van Heerden.

He explains that its strength comes from the fact that it is actually a high-gloss coating that appears to be matt due to the texture (wrinkles) in the paint. These are available in rough, medium and fine textures depending on the manufacturers' requirements and can be used to provide a premium feel to items coated in this manner. Van Heerden points out that the BeckryTex 351 coating is economically priced and represents an opportunity for roof manufacturers in South Africa who are currently using sand, chips etc, to simplify their operations.

For further information contact 016 428 4011 or go to www.beckers-group.com ■

Beaver 250 strips glued flooring

According to Devin van Zyl, CEO of Lambson's Hire, the secret to the Beaver 250's effectiveness is the straight shot conrod drive blade system. The superior design means that the operator can see what he is doing with the blade, allowing the stripper to deliver aggressive force exactly where it is required.

The Beaver 250 is ideal for commercial, industrial and medium sized domestic projects, readily stripping glued down flooring, commercial carpets, gummy adhesives, vinyl tiles, solid vinyl, radial rubber tiles, sheet rubber, indoor and outdoor sports surfaces, roofing material and some ceramic tiled floor surfaces.

At 91 kg, the scraper has an increased weight ratio over similar machines, making it productive yet simultaneously very manageable. Vibration dampened handles and the adjustable blade height increase operator friendliness and comfort, while increasing turnaround time. This 240 volt push type floor scraper runs on a 1.5 kW motor and has 70 to 250 mm blades for varying conditions. The design of the machine makes blade change-outs quick and easy while the large wheels promote enhanced controllability.

The Beaver 250 floor scraper has a folding handle, which allows for easy transportation in cars or light delivery vehicles. The compact size of the scraper, at 525 mm wide, 1084 mm long and 858 mm high, allows for storage even in confined spaces.

"Lambson's Hire are experts in concrete surface preparation and the Beaver 250 is the perfect addition to our fleet, underpinning our philosophy of stocking equipment that is able to deliver immediate, cost effective results," says Van Zyl. ■

New start-ups succeed

In the same period that saw the South African economy contract, the Rand depreciate, the Consumer Confidence Index plunge and Eskom gear-up load-shedding, 63 jobs were created by 27 start-up and early-stage businesses located mainly but not only in Gauteng.

Pavlo Phitidis, CEO of Aurik Investment Holdings, says that in the build up to and during one of the most difficult periods in South Africa's recent economic history entrepreneurs showed what they are made of by growing their businesses and employing more people.

The jobs were created in industry sectors such as construction, engineering, business services, technology, textiles, energy, green technology and logistics by entrepreneurs on the Entrepreneur Internship Programme (EIP). The capacity building programme is supported by Anglo American's enterprise development arm Zimele.

"What made this programme powerful was the fact that start-up and early-stage businesses in sectors beyond mining were also selected to include construction, engineering, energy and green technology and others," said Phitidis.

"Anglo's EIP shows how big business can get involved in providing the right support to high-potential entrepreneurs and accelerate economic momentum. The small and medium business sector is the primary environment in South Africa right now where job creation can take place at scale. Big business is under pressure to cut jobs, the public sector system is already bloated and with our growth rate down to 1.4%, retrenchments across the board are on the cards. But we can fix our ailing economy – one entrepreneur at a time!"

The EIP was conceptualised as a bespoke business mentorship programme by Aurik together with Anglo's supply chain executives. Phitidis adds: "Despite a 35% drop in South Africa's Total Early Stage Entrepreneurial Rating (TEA Rate) last year, business owners on the EIP grew their turnover dramatically.

"Turnover growth is a critical indicator for an early-stage business success potential."

He cites a number of start-ups that have performed:

Purechem (owned by former Anglo employee Phineas Letsoalo), is located in Johannesburg. During the programme, his staff complement grew from one to five and grew to become a major manufacturer of specialist flux, the chemical compound used in the fire assay process that determines the metal content of ore.

Tebogo Technical Enterprise reported a 305% growth in turnover during the programme and its staff complement grew from 18 to 26. The business offers electrical infrastructure construction services.

Ensight Energy Solutions first employed ten people in the business. Today it employs 40 people and 10 new local graduate engineers will join its ranks soon. It reported a 64% growth in turnover during the EIP. Focusing on complex industrial environments. Ensight reduces business costs through energy productivity programmes. It saved its first client millions, and has just signed up a new contract.

FDM Development and Promotion went from a staff complement of seven to 27 and experienced a 13% growth in turnover during the programme. The business provides services in concrete rehabilitation and maintenance, chemical coatings, industrial flooring and epoxy applications systems.

115 Electrical Solutions offers electrical and mechanical engineering consulting and electrical construction and maintenance. At first there were two people, now there are 10, and more are set to join as 115 Electrical Solutions forges partnerships for bigger contracts. It reported a 52% growth in turnover during the EIP.

Paardekraal Hardware cc is located in Rustenburg, in the heart of the industrial and economic strife that began last year. With a 76% increase in turnover during the programme, its staff complement grew from 12 to 26.

Phaledzi Investment Group reported a 524% growth in turnover during the EIP. At the outset of the programme, two people were employed in the business. Currently, 15 permanent workers are employed.

"In the first phase of this programme which kicked off in 2013, a total of six jobs were created and an average turnover growth exceeding 3,000% was achieved. In the second phase which started in 2014, a total of 57 jobs were created and an average turnover growth of 52% achieved," says Phitidis.

The EIP provided specialist support and skills required by entrepreneurs who wanted to build a business or take their existing business to the next level. Aurik held sessions, seminars, group capacity building activities and focused interventions with the entrepreneurs. These combined business development support with industry exposure, mentoring and networking. For further information visit www.aurik.co.za ■

Groundbreaking year for SARMA

Expect more from the ready-mix industry in the future was the message from the AGM. SARMA's hard work and planning has culminated in professionalising the industry, as well as the widespread adoption of certified readymix as the construction material of choice by the country's most influential construction bodies.

Simultaneously, the country's main contracting firms, as well as government parastatal such as the South African National Roads Agency Limited (SANRAL) and other state owned entities have also specified that only SARMA certified readymix concrete may be used on their sites.

SARMA President, Deon Fourie explains, "This had the knock-on effect of attracting a growing number of non-member readymix suppliers, who have begun working tirelessly to meet membership requirements to become part of the association.

The message from the South African Readymix Association's (SARMA) Annual General Meeting is that 2015 will go down as the most groundbreaking year since the establishment of the organisation.

As a result membership has grown in leaps and bounds with growth of 11% in accredited member numbers during 2015."

He added, "This is good news for the local construction industry, as it ensures our construction projects have world-class concrete. It also ensures that acceptable minimum standards are maintained that will put an end to building collapses and ramshackle houses as a result of inferior products being used."

Speaking at the recent event, he concluded that these developments mark a watershed as the construction industry embraces quality over price. "SARMA certified members comply with the regulations and had often been undercut by non-compliant readymix suppliers. This not only jeopardised the integrity of the structure but also led to unfair competition," said Fourie.

He thanked SARMA's General Manager, Johan van Wyk for increasing the number of organisations that will only use accredited readymix and slowly winning the fight to professionalise readymix concrete in South Africa.

"Under his leadership the Association is also throwing its weight behind adopting new standards for readymix, as well as pushing for higher standards from the country's laboratories when it comes to dealing with concrete." ■

Waterproofing contracts

a.b.e. Construction Chemicals' VIP Polyurea coating was recently specified for the mini dam water feature at Number on Brae in The Willows, Pretoria.The German Voelkel Industrie Produkte (VIP) range is licensed and distributed by a.b.e Construction Chemicals. Noel Abendroth from a.b.e. says that the VIP QuickSeal LP 65 was selected for the new water feature with a small windmill and mini-dam which adds a rural atmosphere of the venue.

The main contractor, C&M Projects, Pretoria specified "Quickseal LP 65 is a modified polyurea elastomer especially designed for easy, low pressure waterproofing applications. The product contains no solvents or VOCs and provides an economical lining for a wide range of applications requiring robust, durable, flexible water-tight membranes." VIP Polyurea was specified by main contractor Deco Systems for the Protea Hotel in Sea Point to seal leaks on the existing parking deck. Thermoseal was applied to the 1 220m^2 area and VIP Polyurea Quickseal MP 250, a modified Polyurea, was used for this project with an Aliphatic polyurethane topcoat. At the Fury Ford motor dealership in Woodmead, Johannesburg, Custom Linings applied VIP Quickseal PP 350 on sealing expansion joints on the parking ramp to ensure that water did not leak into the shops below. "VIP QuickSeal PP 350 is a spray-applied, instant curing flexible membrane that can be built to any thickness in one application. Very cold, very hot or even very humid environments do not affect curing time or physical performance of the product which provides flexible, seamless, hard-wearing substrate protection. Its rapid spray application and instant curing characteristics results in shorter shutdown times than traditional systems," says Abendroth. ■

Funding for SAPITI

The South African coatings industry has been given a major boost by the Chemical Industries Education and Training Authority (CHIETA) allocating funding for the new SA Paint Industry Training Institute (SAPITI) centre in Bedfordview.

The funding will be allocated for high tech equipment and accessories equipment for the SA Painting Manufacturing Association's training arm SAPITI. Deryck Spence, Executive Director of SAPMA says that CHIETA approved a discretionary grant for the operational requirements of the new Training Centre. This includes all high-technology equipment and studios to facilitate inter-active video conferencing tuition in multi-faceted Coatings Technology.

"This will allow education to complement electronic face-to-face tuition. CHIETA has also funded specialised laboratory equipment as well as equipment for practical training, extensive tuition material, fittings, office equipment, computerised student data bases and an electronic assessment question bank."

Spence says that government's recognition of the need for training in the coatings sector, coupled with the upliftment of skills and job opportunities the new training is great news.

"The coatings industry has travelled a long road with CHIETA, continuously improving relations and mutual understanding along the way, now culminating in this vital funding. The industry and CHIETA now have total consensus as far as training is concerned and we are immensely grateful for the opportunity to reduce the critical skills shortage in the industry. It endorses the fact that both the Minister of Higher Education and Training, Dr Blaze Nzimande, and CHIETA Acting Ceo, Ayesha Itzkin, understand the importance of industry-specific training. The news of the grant has been received with gratification by all SAPMA members and our retail members will also benefit from the new training," he says.

Mandy Linossi, SAPITI Training Administrator, said: "The new web-based training to be offered at the Centre will enable SAPITI to raise the standard of professionalism, technology and practical knowledge of sales and advisory staff in the retail market. It will provide the retail market with the training it now urgently needs to comply with Consumer Protection Act legislation."

Plans have already been drawn up for the building of the Training Centre and construction work is expected to start soon. It is hoped that the Centre will open its doors early next year.

The Centre will have access to the internationally-respected British Coatings Federation (BCF) training modules and will offer technical tuition at advanced levels as well as for non-technical industry staff to improve their knowledge of coatings.

SAPITI's Surface Coatings Technology Course is aimed at a variety of operations in the coatings industry including staff working in QC laboratories, technical sales representatives and raw material supplier representatives. The course is also suitable for staff with careers focussed on product development and formulation, technical support, trouble shooting and problem solving. For further information contact SAPMA on 011 615 1195 or go to www.sapma.org.za ■

42 new women research professors

The 42 new research chairs, awarded to local women researchers, has increased the total number of chairs under the South African Research Chairs Initiative (SARChI) to 197.

Making the announcement recently, Science and Technology Minister Naledi Pandor said so far SARChI had involved mostly men, with four out of five research chairs going to male professors. "We have 42 new female research professors." Minister Pandor said, "The additional women research chairs were not quota appointments, but impressive candidates of a high calibre."

Established in 2006 by the Department of Science and Technology (DST) and managed by the National Research Foundation (NRF), SARChI is a government human capital development intervention to strengthen and improve the scientific research and innovation capacity of South African public universities. ■

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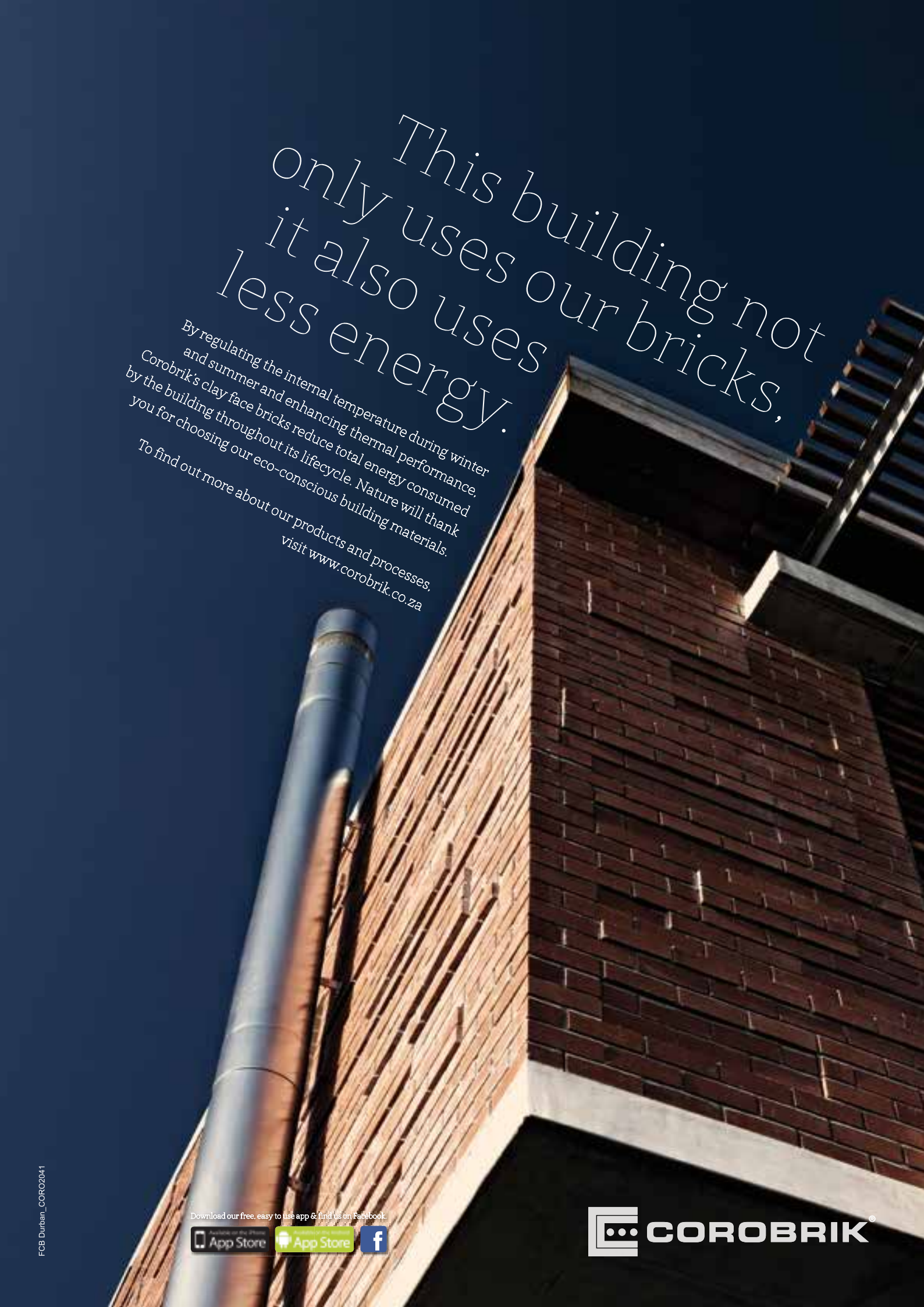
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