ENVIRONMENTAL BENEFITS USING **ISOBOARD**

Early Southern Africans understood well how to build for comfort and survival in our sometimes brutal climate, from cob houses to bee-hive huts. With the advent of modern mass produced building materials, and the ability to intervene in internal climates through air conditioning, the need for a comfort focus in the building envelope diminished.

It became more cost effective to build inexpensively and control the temperature mechanically later, using the world's then cheapest electricity to run heating and cooling systems. Many buildings have been built by developers, for whom it would not have made economic sense to provide a benefit such as high levels of thermal insulation, which is generally hidden within the fabric of the building, and for which there was no general market demand. This means that many existing buildings are not adequately insulated, and mimic the temperature of their external environment.

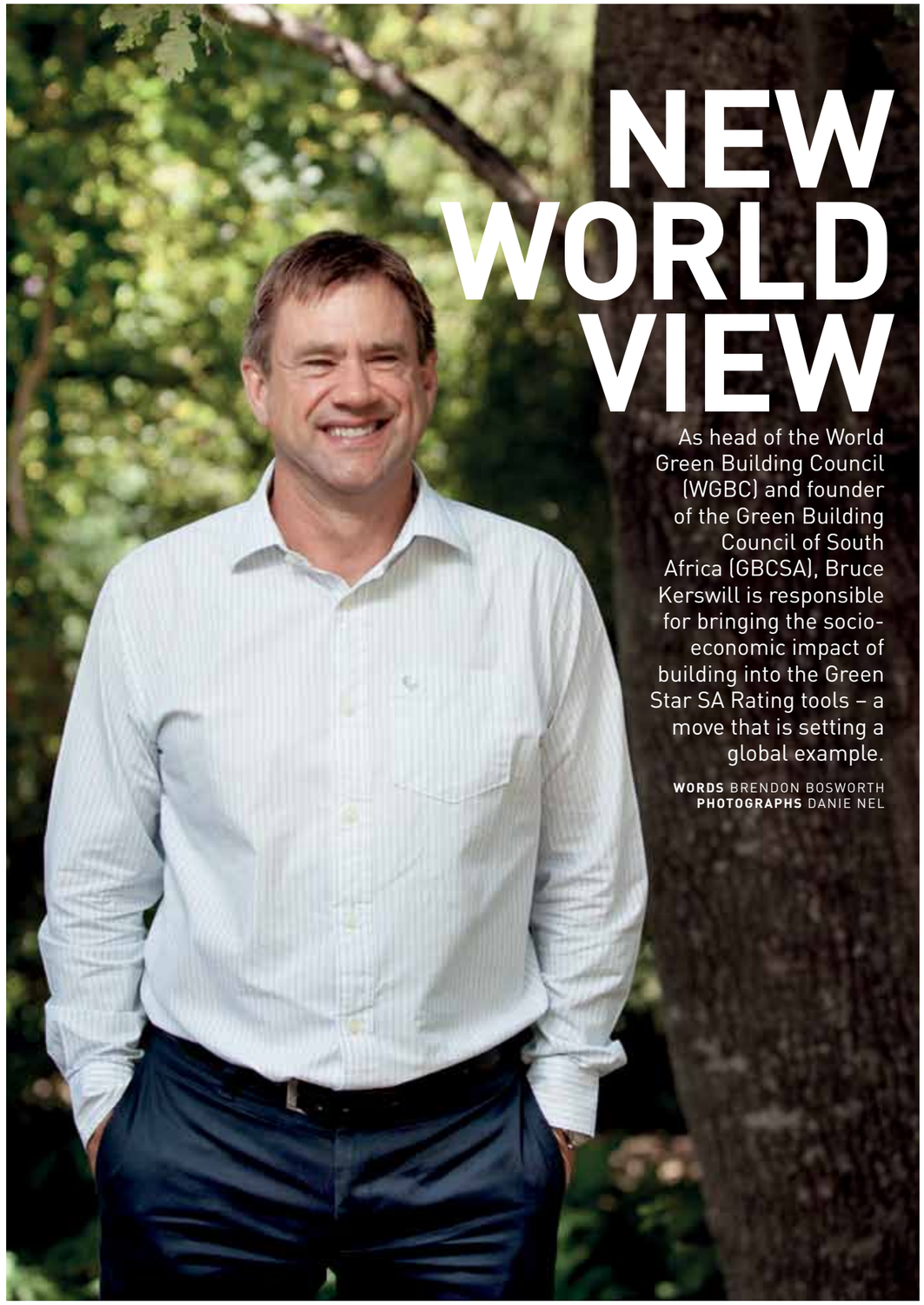
Adequate insulation has the effect of containing the internal temperature of a building within the range where humans are most comfortable, generally between 20 and 27 degrees Celsius.

The consequence of many of our earlier lifestyle choices is the threat of global warming, and we are obliged to take remedial action, from a statutory as well as moral and economic viewpoint.

All new buildings in South Africa must meet the energy efficiency standards as determined in SANS 10 400 XA, however, there are as yet no stipulations requiring energy efficiency measures in existing buildings through retro-fitting. Many owners have however taken it upon themselves to add thermal insulation to the building envelope to make their homes and buildings more comfortable, thereby reduce heating and cooling, particularly in this era of rapidly increasing energy costs.

ISOFOAM SA (PTY) LTD

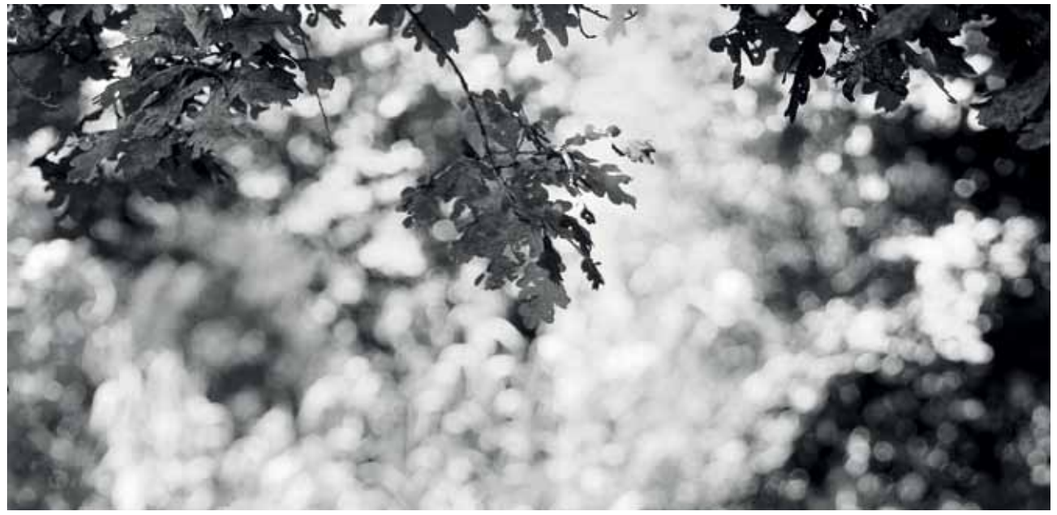
Isofoam SA (Pty) Ltd was established in 1995 by the Kuwaiti Kharafi Group of companies with the aim to introduce Extruded Polystyrene (XPS) Insulation board into the South African Building Industry. XPS provides the user with a foam board which retains heat flow resistance at the 5yr aged values for the life of the building. Isofoam SA (Pty) ltd have distribution centres in CapeTown, Pretoria and Durban with outlets in PE, Bloemfontein and Edenvale.



NEW WORLD VIEW

As head of the World Green Building Council (WGBC) and founder of the Green Building Council of South Africa (GBCSA), Bruce Kerswill is responsible for bringing the socio-economic impact of building into the Green Star SA Rating tools – a move that is setting a global example.

WORDS BRENDON BOSWORTH
PHOTOGRAPHS DANIE NEL



Cups of tea at Bruce Kerswill's home in Newlands, Cape Town are made with water boiled in a blue kettle on a two-plate stove that burns methane gas. The gas filters up from a bio-digester in the back yard, filled with decomposing dog droppings, vegetable scraps and run-off.

This eco-friendly system, complemented by other green features at the modern home, is fitting for someone of Kerswill's standing in the green building community. He launched the GBCSA in 2007 and was recently elected chairman of the WGBC.

Sitting at an outside table with the eastern face of Table Mountain seeming so close that it feels like part of the conversation, Kerswill speaks about what motivates his work in the green building sector.

"The way society is structured, companies are pretty much incentivised to exploit resources and people," he says. "There's a growing inequity in the world."

He points to commentators like Paul Gilding, an Australian writer and sustainability adviser who maintains that humanity has reached its limits, both economically and environmentally.

"I think you're starting to see a recognition amongst people that that's right," he says. "We have to operate within our constraints. There's more of a sense that we do have the environment as a constraint. There are limits to growth."

Taking a line from Rick Fedrizzi, president of the US Green Building Council, he captures the gist of what sustainability in the built environment is all about: "We're trying to get our industries to create places that protect our planet and nourish our souls."

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Kerswill credits former US vice-president Al Gore's 2006 movie ***An Inconvenient Truth*** for fuelling his awareness of the urgency of responding to climate change. "Climate change is such a major thing and it's coming to us like a train on a track. It really surprises me that society doesn't galvanise into action," he says. "We know about the problems. I don't want to be accused by later generations, saying 'you knew about it. Why did you do nothing?'"

ROOTED IN REALITY

Kerswill studied town and regional planning as an undergraduate student at the University of the Witwatersrand. He describes the discipline as "an intervention in the system to try and improve conditions". Being in the property business – in 1999 he co-founded the Spire Property Group, of which he is now managing director – the built environment was an obvious place for him to intervene. And it's a sector where greening has an impact, since buildings are a major drain on energy supplies, using about 40% of the world's energy.

While Kerswill values the environmental gains made through greening the built environment, his understanding of sustainability is underpinned by an important human element. He was instrumental in developing the GBCSA's recently released rating optional socio-economic rating category plug-in. The plug-in, which can be used with any of the rating tools and is in its pilot phase in South Africa this year, offers Green Star SA credits for building elements that create employment, lead to skills development, and enhance health and safety, among others. This is a needed intervention for South Africa, ranked as one of the most unequal societies in the world, with an unemployment rate just over 24%.

"We're a developing country and have these overwhelming issues of poverty, illiteracy, unemployment and health issues. There was a realisation that through the process of building a building, we could address those things," he says. The job creation aspect also appeals to government, which has commissioned various green buildings over the past few years, he adds.

South Africa is the first WGBC member to deploy this plug-in, which was jointly developed by the GBCSA and WGBC. Once the pilot is completed in South Africa, the framework will be offered to other countries, particularly those in the developing world. They can adapt it and incorporate it into their green building rating tools, Kerswill explains, adding there has been interest from countries in South America.

As a businessman, Kerswill is aware it can be difficult to sell green concepts to the business world if they are more costly than conventional alternatives. At the same time, though, businesses can gain a marketing advantage by engaging in practices that society respects. "I think there's an enormous public awareness of environmental and social issues that is much deeper than people think."

He notes that the cost of green buildings has come down to the point where they can be on par with, or just slightly more expensive to build than conventional buildings. And green buildings come with lower operating and occupancy costs because of their efficiency – a drawcard for business. This is one of the reasons Kerswill is pushing for the greening of buildings in the Tower Fund, which Spire listed on the JSE in 2013. The fund has 27 properties in its portfolio with a combined value of R1.64 billion.

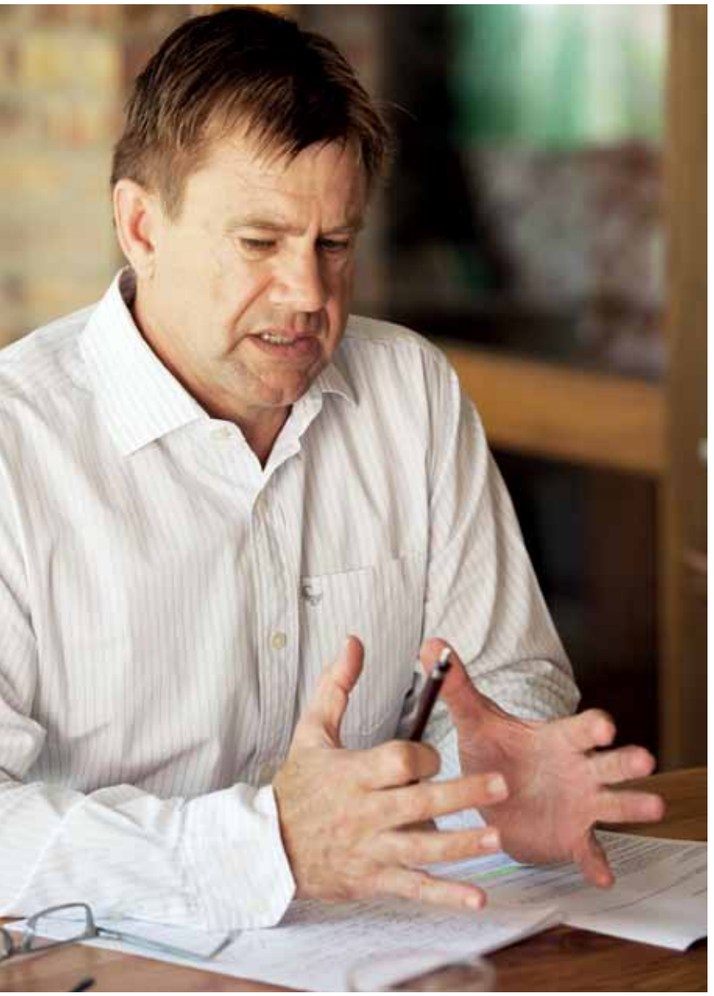
"We're saying that the green initiatives we're taking will result in lower occupancy costs for tenants and the Tower Fund," he says. "And it makes you more competitive in the market."

FUTURE VISION

The green buildings that grace South Africa have typically been built from scratch. Kerswill says in future the focus will shift to greening existing buildings. "New buildings represent about 2% of your total stock, which leaves 98% of stock not addressed. You can really only start to make a big impact when you start addressing existing stock. That opens up the whole universe: every building in the city."

A centerpiece for this type of refurbishment is New York's Empire State Building, which is in the process of being retrofitted so that its total energy use will be cut by 38%. Retrofitting existing buildings is also popular in Australia.

In a move toward greening the system as opposed to individual buildings in South Africa, Kerswill foresees an emphasis on greening new and existing



precincts and communities. Major gains can be made through efficient land use, sharing services, area-based heating, community-wide recycling programmes and planning for public transport to reduce on the use of cars. "You're planning the system to minimise your inputs – water and energy – and minimising outputs of pollution and waste," he says.

Community greening is already happening in other parts of the world. The US Green Building Council, for example, has a LEED for Neighbourhood Development tool that sets standards for smart development. Developments in this programme include Mueller in Austin, Texas, a mixed-use community being developed on the site of an old airport. It features biking and walking paths to cut car use and an on-site power plant with properties sharing heating and air conditioning infrastructure.

The Green Building Council of Australia (GBCA) has developed a national framework to guide community-oriented sustainable design. The GBCSA has held a scoping session about developing a similar tool for South Africa – something it will be working on in future. Kerswill says the tool will likely differ from the Australian version because South Africa is a developing country.

"The challenges of a developed country are to try and reduce energy, water and resource consumption while maintaining people's standard of living," he says. "In developing countries, we've got to try and achieve the efficient use of energy, water, and resources but we've got to uplift the standard of living."

SOWING SEEDS

Kerswill owes his grounding in green building principles to the GBCA. He traveled to Australia in the mid-2000s to learn about building green, did a Green Star Course, and was urged by Romilly Madew, CEO of that organisation, to start a Green Building Council in South Africa. He credits the Australians for helping guide the formation of the GBCSA and says there was an understanding that once established, the GBCSA would support other countries, particularly in Africa, looking to develop their green building sectors.

While green building developments around the continent are still in their early stages, Kerswill and the GBCSA are playing a supporting role. As it stands, South Africa is the only African country with a fully established Green Building Council. There are eight other countries – Namibia, Botswana, Mauritius, Zambia, Tanzania, Nigeria, Ghana and Kenya – that are starting their own councils.

The GBCSA has done Green Star SA courses in Namibia, Ghana and Mauritius. It has also done

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“local context reports” to allow the Green Star SA rating system to be used in those countries, he says.

After attending a UN Habitat conference on green building in Nairobi, Kenya, a few years ago, Kerswill came away optimistic about the potential for green building to take hold on the continent.

He says attendees noted that in African cities green buildings make sense practically and economically. This is particularly the case in places where infrastructure, be it power supplies or water systems, are under pressure and tenants face frequent outages. A building that runs off half the energy and water needed to feed a conventional building helps alleviate pressures on stressed grids.

With the new wave of development taking place in Africa, developers also don’t want to build “obsolete buildings” – those that use too much energy and are costly too maintain, he says.

A PROGRESSIVE TREND

The green building movement continues to gain momentum in South Africa. Kerswill says despite being quite far behind the rest of the world about five years ago, the country’s green building market is now on par with what’s happening in the most advanced parts of the world.

But despite the gains made in the green building sphere, good environmental practice can still be a tough sell in the corporate world, where the bottom line reigns supreme. As part of its strategy for reaching out to businesses, the WGBC is focusing on identifying and collaborating with firms seen as leaders in the green field, Kerswill explains.

“There are always progressive companies and there are always reactionary companies,” he says. “There are lots of companies with vested interests who don’t want to see change.” But since staving off climate change is essential, those businesses that refuse to make change are “on the losing wicket”.

Businesses that voluntarily come to the table and embrace green principles help grow the green building movement. But to really protect the environment, Kerswill maintains that stronger regulation is necessary. And the WGBC advocates for legislative change, especially where existing legislation may block more efficient ways of building.

“I think the future of our civilisation depends on (business) being regulated,” he says. “People shouldn’t be allowed to build a building that consumes excessive amounts of energy, water, or materials.”

www.gbcsa.org.za
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