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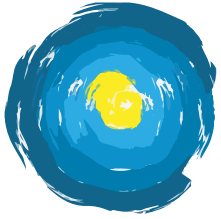
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24



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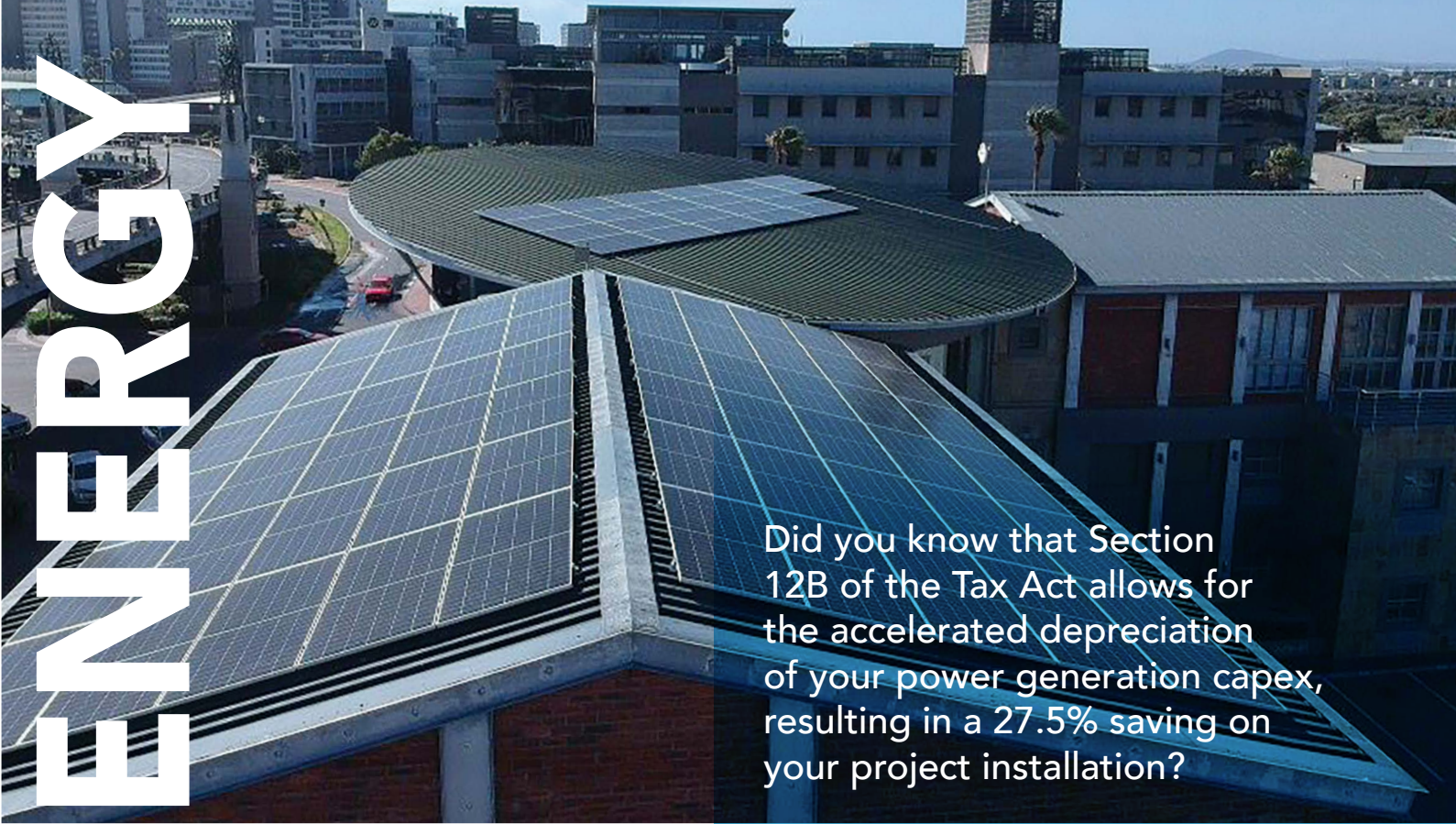
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A look at reimagining our workplaces, and how they could integrate with and support more sustainable communities



+IMPACT

The official publication of GBCSA



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+Impact Magazine, the official publication of the GBCSA, presents thought leadership from local and international green building commentators and practitioners, and showcases the excellent work of GBCSA members. Are you a thought leader in your relevant field? GBCSA members are invited to submit stories about projects, design concepts, materials, research and anything else that promotes a healthy sustainable built environment. Submit a 100-word description of your content idea to: editor@positive-impact.africa

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EDITORIAL ADVISORY BOARD

BOB VAN BEBBER

Bob van Bebber, a senior director at Boogertman + Partners spearheads the conceptualisation and delivery of many of the practices' large complex projects. From Soccer City, the main stadium for the 2010 FIFA World Cup, to large mixed-use precincts as well as the largest single tenanted corporate head office in the southern hemisphere for Discovery Health. He was recently recognised by the South African Professional Awards as the winner of the Professional of the Year: Architecture Class Award as well as the Overall Professional of the Year for 2019. Van Bebber's passion extends into urban design, interior design and education.

www.boogertmanandpartners.com



GRAHAME CRUICKSHANKS

Grahame Cruickshanks has worked as a professional architect, sustainability consultant and management consultant with 20 years of experience in the design, construction and property industry. Focusing much of his career on green buildings and an expert in his field, he has worked on a variety of Green Star and BREEAM certified projects and other building projects in South Africa, Singapore and the UK. Prior to joining Growthpoint Properties as the head of sustainability and utilities, Cruickshank's previous roles included managing executive for market engagement at the GBCSA and manager at EY's Climate Change and Sustainability Services.

www.growthpoint.co.za

JUTTA BERNS

Jutta Berns is an industry leader and one of South Africa's first internationally accredited green building professionals, establishing her company Ecocentric in 2007. She has degrees from the Universities of Bonn (Germany) and Cambridge (UK), and a diverse blue-chip client base. Berns specialises in sustainable and net-zero solutions for large property portfolios. She has several LEED Platinum and 6-Star Green Star projects in her portfolio, is a GBCSA faculty member, a Green Star Assessor and GBCSA TAG member, and winner of the Gauteng Entrepreneur of the Year 2019 Award by the Women's Property Network and 2019 winner of the Established Green Star Awards by the GBCSA.

www.ecocentric.co.za



MANFRED BRAUNE

Braune currently holds the position of Director: Environmental Sustainability at the University of Cape Town (UCT), where he leads the strategy and implementation of environmental sustainability across all spheres of the university since early 2019. He has also served as a non-executive director of GBCSA in a voluntary role since August 2020. Braune's background is as a professional engineer, having worked at WSP Group for over 10 years as a consulting engineer, where he then started and led WSP's green building business for three years and then worked for the GBCSA for 10 years.

<https://www.uct.ac.za/main/explore-uct/sustainability>

MARLOES REININK

Marloes Reinink is owner of Solid Green Consulting. With an academic background in innovation and architecture, she has been working as a sustainable building consultant for more than 15 years in South Africa and Africa. She founded Solid Green in 2010, which is one of the leading sustainability consultancies in Africa and achieved its 100th green building certification in October 2020. Reinink's passion is advocating for a greener built environment and she recently started GreenED, an online education platform for sustainability in the sector. Reinink is an ambassador for the International Living Future Institute; a Living Future accredited professional; and a facilitator of the SA Collaborative Network for a Living Future.

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“I have long understood that climate change is not only an environmental issue – it is a humanitarian, economic, health and justice issue as well.”

– Frances Beinecke, former president of the Natural Resources Defense Council

As the daughter of an architect, I have fond memories of traipsing behind my late father as a child on frequent inspections of the churches he'd designed for Cape Flats communities. At home, my walls are adorned with framed illustrations of iconic historical structures, painstakingly hand-drawn for his portfolio as a student in the '50s.

How times have changed since then – for better, and for worse. He'd have been amazed and proud of the way the built environment has adapted and evolved as we become increasingly aware of our impact on the planet.

Having always nurtured a fondness for design and sustainability, I'm honoured to be wearing a new hat as editor of *+Impact* magazine, a space that showcases the great strides being made by the building and construction sector towards a greener, more sustainable future. The Green Building Councils of the world work tirelessly towards accelerating change, reducing our carbon and waste footprints, and helping reshape our energy landscape.

Underscoring the value of green economy growth is the MSCI South Africa Green Annual Property Index, which, in 2022, continued to support the investment case for energy and resource-efficient real estate. On page 28, you can read more about how green-certified prime and A-grade offices have outperformed non-certified offices of similar quality by 20.9% since 2016.

As a Cape Town native, I'm used to winter showers, but it's been many years since we've experienced so much rain (and the resultant havoc) so early on in the season. Weather extremes seem to have become the norm. In a nod to this – and August being Women's Month – we asked some of the amazing women on Green Building Council South Africa's board to share their views on leadership in the climate-change arena.

An essential part of the sustainability solution is a circular economy. The World Green Building Council (WorldGBC) is the largest and most influential local-regional-global action network, championing the transformation to sustainable and decarbonised built environments for everyone, everywhere.

On 31 May, GBCSA Planet Shapers co-hosted an online launch of the [WorldGBC Circular Built Environment Playbook](#), delivered by its Circularity Accelerator global programme, which calls for a circular economy and resource efficiency in the built environment. Through the playbook, the WorldGBC network aspires to increase awareness and accessibility of circular economy solutions. Green Building Council South Africa's Michelle de Nysschen was joined by Adrian Jackson, Circularity Accelerator Programme Officer, WorldGBC; Dorota Bacal, Sustainability and Innovation Lead, VinZero; Cinthia Espino Castillo, Associate at Foster + Partners Sustainability Group; and Alison Groves, Regional Director at WSP in Africa. You can listen to the webinar [here](#).

As always, we continue to celebrate these champions of change – we hope you enjoy this issue as much as we enjoyed putting it together.

Mariola Fouché
Editor

I was relieved to have submitted my final assignment for the “Business and Climate change towards Net Zero Emissions” short course run through the University of Cambridge in early April. I enjoyed connecting with international lecturers and delegates, and it is inspiring to think that there are many millions of us ‘greenies’ across the globe. What we are trying to achieve can often feel overwhelming, but it’s encouraging to know how far and wide we are in the good fight towards making a positive difference.

Our winter edition of *+Impact* magazine is once again packed full of interesting content. In Johannesburg, we are fortunate to have a relatively short winter season. However, we have been experiencing rather unusual winter rains – climate change impact.

A 6-Star rating always deserves to be celebrated, and The Watershed at the V&A Waterfront has achieved a 6-Star Green Star Existing Building Performance v1 rating. In addition to solar, the building makes use of natural light and ventilation in its design. Our article shares insights from this project.

In our third instalment of Transform Tomorrow – all about the Green Star New Build v2 tool and its implications – we delve deeper into the Resilient, Places and Nature categories as they gear up towards implementation later this year.

Setting a benchmark for sustainable premium office space is the Nexus 1 building – accredited with a 5-Star Green Star Office Design v1.1 rating and the first net-zero carbon level 1 building within Gauteng’s world-class Waterfall City. We look at how it contributes towards the green evolution of this world-class smart city.

It is extremely exciting to see industrial buildings being rated with the launch of the new Green Star- Existing Building Performance (EBP) Custom Industrial pilot rating tool by the GBCSA during 2022. There is huge opportunity for industrial building ratings at a national level. The tool is aimed at rewarding buildings that are managed well, demonstrate good operational performance over a measured period, and contribute to better quality spaces for tenants. Investec Property Fund has rated a number of their assets via this tool.

Fujifilm’s new five-storey head office building in Sandton was constructed to align with Fujifilm Holdings’ climate-action targets, to produce net zero carbon emissions by 2041. The Sandton head office is well on its way to this target, as it recently achieved a Net Zero Carbon Level 1 Base Building Emissions certification through the GBCSA. *+Impact* unpacks the sustainable initiatives of the building and how it managed to attain this certification.

Then there’s an insightful thought-leadership article from Georgie Chennels, entitled “Space Sense – Exploring the Role that People Play”. At the heart of it, the built environment is all about people, and the use of various types of spaces, whether residential, retail, office or industrial.

This is my final chairman’s report, as I hand over the reins to Andre Theys after the GBCSA AGM in July. I can’t believe that a year and half have gone by in my role as chair. I wish Andre all of the best in his tenure and am proud to be handing the organisation over to him in the state that it is.

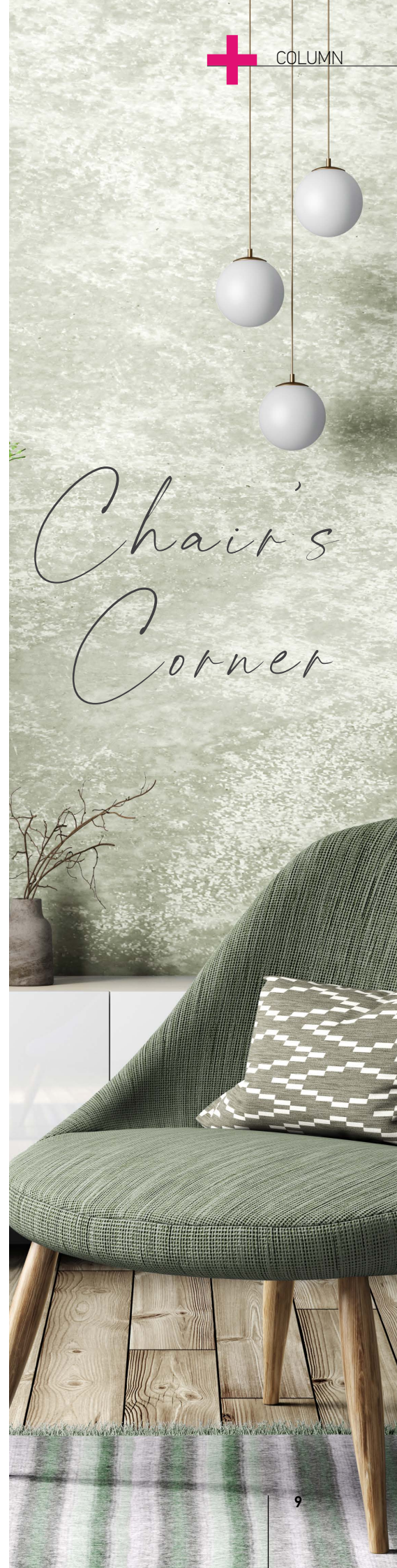
A few areas that I wanted to give attention to during my time as chair included broadening the appeal of the GBCSA to more sectors within the built environment, emphasising the importance of tenants as significant occupiers of space in the built environment and the impact that they can make, and modernisation of the rating tools.

I am delighted to remain on the GBCSA board after my term as chair, so I can continue to serve the industry that I love.

Warm wishes



Brian Unsted
GBCSA Chairman



*Chair's
Corner*



MAKING AN IMPACT

2021/2022 COROBRIK-SAIA AWARDS

Held biennially, the 2021/2022 Corobrik-South African Institute of Architecture (SAIA) Awards of Merit and Awards for Excellence were announced at a gala event held in Johannesburg on 26 April 2023, and live-streamed to audiences across South Africa. The awards programme recognises peers and celebrates unique talent.

The adjudication panel received a total of 42 projects, including two research projects, that were entered into

the national awards programme, which is structured over a two-year period and conducted in two stages. Stage one sees the regional awards for architecture presented by the nine regional institutes affiliated to SAIA.

In Stage two, the winning regional projects that are entered into the national awards receive either a Commendation, an Award of Merit and/or an Award for Excellence, which acknowledges exceptional achievement in the field of architecture. www.saia.org.za



GASS Architecture Studios won Merit and Excellence awards for their project The Onyx – Jewel City.

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WINNERS

ON THE A-LIST

Chief Executive Amelia Beattie of precinct-focused, retail-centred REIT Liberty Two Degrees (L2D) has made it onto Africa.com's Definitive List of Women CEOs for the third consecutive year. The data-driven list recognises women who helm large, listed companies in Africa, and focuses on the business's transformation and operational excellence within the property arena.

With 22 years' experience in the sector, Beattie is passionate about making a difference to the people and communities a property serves, and is equally dedicated to matters of diversity and women's equality in the industry. "Leadership has the responsibility to drive positive outcomes, and celebrating the achievements of women is important with the hope that it will further encourage increased representation of women across different sectors," she says.



Amelia Beattie is CEO of retail investment trust Liberty 2 Degrees, a co-owner in some of South Africa's most iconic shopping centres.

GBCSA MASTERCLASS SERIES

In the coming months, GBCSA's masterclass series offers a deep dive into various technical aspects of green buildings. The two-hour, high-impact sessions range in subject matter and aim to equip green building professionals, architects, developers and contractors with a greater understanding of green building aspects.



The fourth masterclass teams up with Watericon to look at sustainable water-use solutions.

Each masterclass (one per month) addresses a unique building aspect and will be delivered by professional experts in the sector. The sessions are hosted online in the afternoon via the GBCSA Zoom webinar platform, with an informal approach that allows opportunity for engagement.

Together with ProNature, Masterclass 3 on **12 July 2023** focuses on **natural paint technology**. Natural paint is free of volatile organic compounds, contains natural ingredients, is asthma- and allergy-friendly, washable and scrub-resistant.

On **17 August 2023**, Masterclass 4 looks at **sustainable water-use solutions** with Watericon, unpacking technical solutions to reduce water consumption, and implement water harvesting and recycling techniques.

Visit www.gbcsa.org.za/workshops for more information.



Joanne Solomon is CEO at the SA REIT Association and a member of the GBCSA board.

SUSTAINABILITY DISCLOSURE FRAMEWORK

The South African Real Estate Investment Trust (SA REIT) Association is in the final stages of developing its Sustainability Disclosure Guide & Framework, a resource that aims to assist South African REITs and real estate organisations align with international best practices in environmental, social and governance (ESG) reporting.

“This framework will play a vital role in enabling REITs to comprehensively measure, report, and track their sustainability efforts. Establishing clear guidelines and metrics empowers companies to set ambitious goals, identify areas for improvement, and showcase their progress transparently,” said Joanne Solomon, CEO at the SA REIT Association.

Click [here](#) for more.

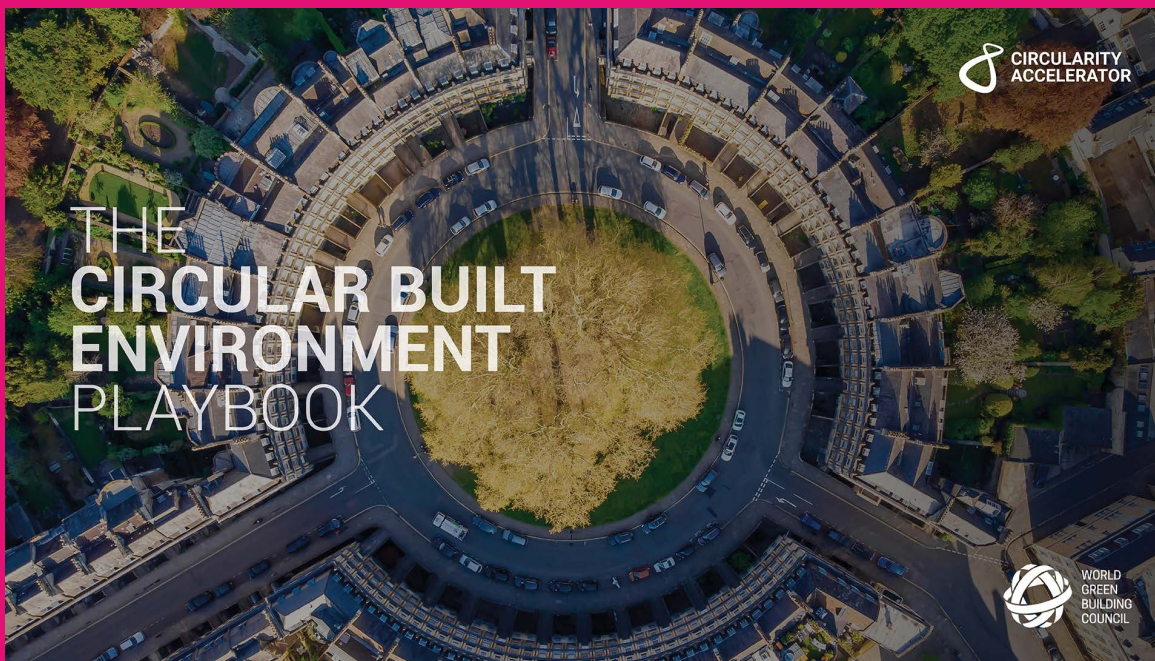
FOR PEOPLE AND PLANET

Launched by WorldGBC in May 2023, the **Circular Built Environment Playbook** report presents market-leading circular principles and strategies in action, calling on the building and construction sector to accelerate the implementation of circular and regenerative principles.

Through this publication, the WorldGBC network aspires to increase awareness and accessibility of circular economy solutions for the built environment sector in order to guide all stakeholders towards sustainable, circular decision making.

The WorldGBC global Circularity Accelerator programme catalyses action for the uptake of net-zero whole life resource depletion in the built environment, and the restoration of resources and natural systems within a thriving circular economy. WorldGBC are driving action towards their guiding goal for resource efficiency and circularity: “A built environment that facilitates the regeneration of resources and natural systems, while providing socio-economic benefit through a circular economy.”

To view or download the report: [The Circular Built Environment Playbook – World Green Building Council](#)



CREATING INCLUSIVE PLACES

Along with a growing awareness that people and communities are fundamental to the success of cities and businesses – as well as a demand for transparency and authenticity – city decision-makers and professionals in the built environment industry are acknowledging the importance of social value in relation to place.

Dr Sara Candiracci leads global sustainable development collective Arup’s Inclusive Cities & Social Value business in Europe, which brings together urban planners, social scientists and environmental specialists to create resilient and healthy cities.

Join the GBCSA’s **16th Green Building Convention, 15-17 November 2023**, at Cape Town’s Century City Conference Centre as Dr Candiracci unpacks how urban planning can deliver social value in cities today. www.gbcsaconvention.org.za



Dr Sara Candiracci is a speaker at the GBCSA’s 16th Green Building Convention on 15-17 November.



CHAMPIONS of change

In celebration of Women's Month in August, we look to some of the female board members on the Green Building Council South Africa for their insights on climate action, and leadership in this space.

Sustainability is increasingly becoming a part of government policy. South Africa has set a target of achieving net zero greenhouse gas emissions by 2050, with a goal of reducing emissions by 28% by 2025, and by 42% by 2030, compared to the country's emission levels in 2005. This target was announced as part of the country's updated Nationally Determined Contribution (NDC), submitted under the Paris Agreement on climate change in 2021.

As these dates draw closer, we asked six of the women on the GBCSA board: **"How can we encourage more women to get involved in climate action and take on leadership roles in this area?"**



ANELISA KEKE
CHIEF SUSTAINABILITY OFFICER, REDEFINE PROPERTIES

“This is a fast-paced and exciting space where women will have an increasingly important role to play as leaders and champions of change. To accelerate these moves, companies should consider offering bursaries to young women to study further in STEM [science, mathematics, engineering and technology] fields, and also in other disciplines that can provide a firm foundation in climate science. Experts in this area should mentor and encourage young women to pursue green jobs and sustainability-related roles.

“From a leadership perspective, boards and executive directors should elevate the strategic importance of women who take up roles in sustainability by actively involving them in the formulation and execution of business strategy and avoid pigeon-holing them into one-dimensional or siloed roles.”



If we don't help shape the future we want, then the one we get will be worth significantly less.



LEVINIA PALMER
HEAD OF FINANCE AND OPERATIONS,
GREEN BUILDING COUNCIL SOUTH AFRICA

“Womens’ voices are underrepresented when it comes to global issues like climate change. To combat this, we should create a space where women are encouraged and inspired to engage in climate action. By ensuring equal opportunity in leadership roles, we can empower more women to get involved in climate action and be part of transforming our planet’s future.

“We need to make sure that women are included in climate-related discussions and have their voices heard. We need to drive funding and support for women-led climate initiatives. And we need to provide education and training programmes to develop leadership skills for women. In addition, each one of us can create awareness around, and drive climate action in, our own circles – whether we’re women or not!”



LISA REYNOLDS
CEO, GREEN BUILDING COUNCIL SOUTH AFRICA

“Roles and careers within the sustainable development space have always been ideal for women. An example of this is the high number of female Accredited Professionals within the green built environment – many of them in leadership roles. So, the question is – how do we expand on this?

“Climate Action is a broad opportunity that needs to be divided into definitive prospects. There are many female graduates who have completed environmental studies and engineering who want to be practically involved in climate change mitigation, but they don’t know where or how to apply their learnings. We need to share the definitive prospects among South Africa’s potential entrepreneurs. Challenges to entry must be reduced and – I believe – leadership will follow.”



JOANNE SOLOMON

**CHIEF EXECUTIVE OFFICER,
SA REIT ASSOCIATION**

“As the real estate sector strives to achieve the ambitious goal of net zero greenhouse gas emissions by 2050, the pivotal role of women in driving this transformation cannot be overlooked. Women bring diverse skills, innovative thinking and a collaborative approach to addressing environmental challenges in the real estate sector.

“Recognising their unique perspectives and capabilities, industry leaders emphasise the need to empower women and promote their leadership in sustainability initiatives. Through inclusive decision-making, targeted investments and mentorship programmes, the industry aims to harness the potential of women leaders in building a sustainable and resilient future.”



Women in sustainability roles should be actively involved in the formulation and execution of business strategy.



SHAMEELA SOOBRAMONEY

**CEO, NATIONAL BUSINESS INITIATIVE (NBI),
FORMERLY CHIEF SUSTAINABILITY OFFICER, JSE**

“It is already firmly established that diversity on boards, in all its forms – including gender diversity – is closely associated with the better performance of companies. Women are disproportionately affected by the increasingly frequent and severe effects of climate change, so having their voices and inputs on achieving net zero is critical if we are to have outcomes that support a just transition to a low-carbon future.

“At every level of leadership and in every context, an explicit effort needs to be made to include women. Women in turn should themselves seek out the platforms where actions are being decided on, and actively help provide a consistent and credible signal to our markets, investors and international partners that a net-zero and climate-resilient economy and society is our defining context for economic growth and social inclusion. If we don’t help shape the future we want, then the one we get will be worth significantly less.”

ILSE SWANEPOEL

**CHIEF OPERATING OFFICER,
REMOTE METERING SOLUTIONS (RMS)**

“To achieve South Africa’s net zero targets, it is imperative to encourage women’s active participation and leadership in climate action. Promoting equal access to education, especially in STEM fields, is key to expediting women’s advancement into leadership positions, harnessing their passion and capabilities.

“Mentorship programmes and networking opportunities can further empower aspiring women leaders, while highlighting female role models and success stories inspires others to follow suit. Fostering supportive and inclusive environments, addressing gender biases, and collaborating with women-led organisations create spaces for women’s voices to be heard and valued. As the bedrock of families and communities, women spur a transformative impact that ripples across society towards a more sustainable future.” +





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Holding all the

GREEN CARDS



Having already been awarded a world-leading 6-Star Green Star rating, V&A Waterfront Holdings' second evaluation of The Watershed gained them an additional point. What's on the green horizon for the precinct?

WORDS Anne Schaffer. IMAGES V&A Waterfront

PROJECT NUTSHELL

Location:	17 Dock Road, V&A Waterfront, Cape Town
Green Star rating:	6-Star Green Star rating – Existing Building Performance V1
Type of building:	Commercial and retail
Project date:	October 2022
Project size:	7 623m ² total gross floor area

Above the retail component of The Watershed at the V&A Waterfront in Cape Town is a co-working incubator.



In 2017, Green Building Council South Africa (GBCSA) awarded a world-leading 6-Star Green Star – Existing Building Performance (EBP) rating to V&A Waterfront Holdings’ The Watershed. This year – in the new-normal post-pandemic context – this operational efficiency rating was repeated, and The Watershed maintained its rating. As a refitted existing building, moving up from 77 to 78 points, it’s firmly cemented its place as a world leader. The V&A Waterfront has now set its sights on Net Zero for existing and new buildings by 2030 to 2035, ahead of the 2050 target set by the City of Cape Town.

Wolff Architects reconfigured the old industrial Blue Shed building at the V&A Waterfront in 2014. Retaining much of the warehouse’s original structure and materials, the vision for this new space – The Watershed – was quite different and highly innovative. The architects not only repurposed the building, but redirected the flow of the entire precinct too.

THE BACK STORY

The Blue Shed had always been a clumsy physical obstacle, circumnavigated by pedestrians moving between the Two Oceans Aquarium and the rest of the V&A. The architects opened both ends of the Shed, thereby creating ‘an inside street’ through the building. The Watershed’s open-ended structure now forms a natural thoroughfare between the aquarium and the V&A. This accomplishment flipped its purpose from a market into a very specific local retail experience, channelling the clientele past vendors en route to their destination – including the City Sightseeing Red Tour Bus start point.

There were to be two elements to the building: the ground floor ‘street’ known as The Watershed, designed for SMME retail, and on floors one and two, a co-working office space or incubator for start-up businesses and new ventures, plus a wellness centre.

AND THEN THERE WAS LIGHT

The Watershed design aligned closely with Wolff Architects’ and V&A Waterfront Holdings’ clear ethos around sustainability. The volume of materials, features and finishes retained meant fewer materials were required. The design retained the original timber warehouse floor, and the windows on the south-east side were refurbished. The old corrugated sheeting in the gables was replaced with new translucent sheeting, which allowed natural



“
The architects repurposed the building and redirected the flow of the entire precinct.”

light into the space and opened up views of the harbour and Table Mountain. A 100m-long skylight contributed to the introduction of natural light.

The first floor was created by suspending a 50x50m gridded steel floor from the Blue Shed’s original gantry crane. With no columns needed, the wide-open space below was full of possibilities for everything from exhibitions to live entertainment.

The design of this essentially covered open-air space took advantage of natural daylight. The opened ends of the building facilitated cross-ventilation and minimised heat gain, reducing the need for mechanical ventilation (fans) and air conditioning. The air quality, too, was excellent. The subsequently high daylight levels achieved – together with the skylight – meant less artificial light was required. Energy-efficient fluorescent and LED lighting was installed, which draws less energy and lasts longer, thereby reducing the frequency of maintenance.

Water consumption was significantly reduced by the installation of water-efficient fittings. From taps to toilets, they are designed to be low flow/low flush, hence waterless urinals and handwashing basins with on-off sensors.



HIGH-PERFORMING BUILDING

Post construction, François Retief of Sow & Reap was appointed as the green consultant. He talked about the additional elements contributing to sustainability: “The Watershed is an excellent example of passive design in a commercial retail context, and the proof is in the pudding, which is what the Green Star Existing Building Rating sets out to demonstrate. Being naturally ventilated with excellent daylight, the building performs well in terms of air quality, lighting quality and energy efficiency.”

“The installation of a 300kWp solar panel plant generates enough energy to supply much of the building’s needs and even feeds into the V&A network – it uses less than half the energy of a similar retail centre of its scale.”

More recently, to improve tenant thermal comfort during winter in particular, fireproof glass louvre windows were installed at each end of the shed; so too, roller doors offer protection from the elements.

GREEN-MINDED TENANTS

The vision of The Watershed was to create a dynamic and supportive retail platform for SMMEs producing local product, sourcing local product, and creating product from recycled and upcycled materials – waste seen as a commodity – and it was strongly focused on female empowerment. Over and above the SMME tenant criteria, the V&A seeks tenants who are aligned to, in particular, the sustainability ethos of the V&A and they are all signatories to the Green Lease. Currently, The Watershed has 153

SUSTAINABILITY EDUCATION, AWARENESS AND SURVEYS

Mareli Cloete is a senior manager at the V&A Waterfront. Her focus is on environmental sustainability, utilities, and health and safety. She works extensively on the rating of existing buildings within the Waterfront, and their operational efficiency. “Utilities come very much into play from a sustainability point of view, because it’s about analysing consumption patterns and trends, and driving down consumption,” says Cloete. Regular audits are conducted to review indoor environment quality, transport trends and other sustainability factors.

Cloete considers tenant education and awareness around energy and water to be a key factor in changing behaviour: “We have various monitoring systems and a metrics indicator dashboard by which we can track our tenants’ consumption and behaviour patterns. The systems are very granular, so we are able to track and monitor The Watershed’s consumption over any given period. Education involves quarterly tenant forum meetings with discussion around sustainability features and projects, which we, as landlords, have implemented across the property. We field a large number of tenant queries about how they can reduce water and energy consumption.” She also pointed out the V&A’s strong focus on reducing single-use plastics as signatory to the SA Plastics Pact, with a purpose to reduce single-use plastics by 2025.

For Cloete, one of the superb aspects of the building is its on-the-doorstep access to amenities such as



“
The design of this essentially covered open-air space took advantage of natural daylight.”

subletting tenants selling a vast selection of products ranging from ceramics, textiles and furniture to fashion and jewellery. The mix is bright and bold, and a highly appealing local drawcard for both local and international visitors.

Upstairs, the incubator – Workshop 17 – is a commercial, business-orientated space with an amphitheatre, hot-desking, working lounges, a work café, and breakout and conferencing facilities for start-up businesses and new ventures, conducive to business collaboration. There are between 150 and 193 tenants.

Referencing the GBCSA Innovation credits, Retief highlighted the V&A’s strong focus on SMME and local crafter support that consistently goes into The Watershed, and the inestimable value of this in terms of a creating a sustainable and inclusive economy: “In addition, we included a motivation around [the] COVID [outbreak] and the assistance that the Waterfront gave to all these SMMEs throughout this period.”

public transport: “Upwards of 80% of tenants and 87% of visitors use alternative transport over single-occupant driving. Alternatives include public transport, carpooling, cycling and walking. There are safe pedestrian pathways and bicycle/motorcycle parking areas around the building. The MyCiTi bus stop is directly outside the building.”

The sustainability of the entire V&A Waterfront is stringently managed, from recycling to green cleaning, to green tenant criteria. Innovation is high on the list, and there’s an ongoing conversation about and exploration of new green best-practice initiatives.

For Retief, constant surveying forms an important source of information in the EBP tool, highlighting how users – tenants and visitors – experience the building, as well as its operational efficiency. With that information, the landlord is able to introduce meaningful interventions for the benefit of all. +



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DEEP DIVE:

Nature, Resilient & Places

In the run-up to the Green Star New Build V2 tool launch, we delve deeper into each category, starting with the first three.

WORDS Marlinée Fouché

With the launch of the pilot phase of the New Build V2 tool set for later this year, each category is gearing up towards implementation – but who are they aimed at, and what can you expect? We look at three of the eight categories in more depth.

The Green Star New Build V2 tool per category, unpacked:

RESILIENT CATEGORY

Minimum requirements: Climate-Change Resilience
Other credits: Operations-; Social-; and Heat Resilience



How do you continue operations when it's not business as usual? That's what the **RESILIENT** category wants project teams to consider. According to founder and director of Ecocentric and category director Jutta Berns, this category speaks directly to what investors are looking for, and is aligned with the JSE, sustainability and climate-change disclosure requirements. "It pushes developers, policy makers and design teams to break free from conventional thinking and explore state-of-the-art solutions that bolster resilience."

There are four elective credits against which points can be awarded, with one minimum requirement embedded into the category.

CLIMATE-CHANGE RESILIENCE encourages teams to assess and communicate the building's exposure to climate-change risks in a specific location, and to have plans in place to mitigate those risks.

According to Yovka Raytcheva-Schaap, Technical Specialist at Zutari engineering consultants and task force member, there are two levels to target the credit. The first is the development of a climate-change risk and an adaptation assessment, using a template provided by the GBCSA. This is done by the project team. The second pathway requires the appointment of a specialist in climate-risk assessments and adaptation who carries out a more detailed, project-specific assessment, based on a recognised methodology. The latter pathway allows for targeting of the maximum available points.

Berns elaborates that building design, construction and location is of relevance, and emphasises the importance of thinking ahead: "You have to try and predict future data through science, and use it together with historic data to design a building that will still stand for another 20, 40 or 50 years."

OPERATIONS RESILIENCE aims at mitigating the impact of acute shock (short-term disruptions, such as an earthquake or floods) and chronic stress (longer-

term disruptions, like aging infrastructure or a c c e s s to water and electricity) on an operational level. To gain points, teams must firstly carry out a comprehensive risk assessment, and for a better ranking, the involvement of a professional is required. According to Berns, elements to consider range from energy, water and communication to digital infrastructures and systems, and could include the availability of the plans for the building, contact lists for when the communication network drops, or not only relying on elevators.

"Even if the measures are not fully implemented at this point in time," Raytcheva-Schaap says, "it is important that the buildings are designed such that they can be fitted at a later stage." Concerning electricity, she adds that all new projects they are working on are moving towards alternative energy installations, most of which include solar PV Systems. According to her, it not only maintains operational resilience, but is also a more environmentally friendly alternative to the use of generators.

SOCIAL RESILIENCE adopts a strategic approach to mitigate the impact of acute shocks and chronic stress on the building's occupants or users, and the surrounding community. To achieve points, buildings targeting this particular credit must have a social resilience plan for the building to act as a support structure in times of crisis. This may be improving community health and wellbeing, or providing opportunities for local employment, skills development, training and education.

Raytcheva-Schaap says a building designed to store additional volumes of water "could provide water for the neighbouring community in case of water interruptions". Berns uses a major power outage as an example: "[The building's power amenities could be designed such that] people would be able to come into the building to charge their equipment."

The **HEAT RESILIENCE** credit leans more towards design requirements than strategic planning and, says Berns, it encourages design teams to reduce the overall heat-island effect of built-up areas. "It's similar to credits we already have for other Green Star tools, like the Multi Unit Residential and the Retail Centre tools," she says. Elements to consider include green roofs, cool roof coating, roof covering and roof-top PV installations.



In the built environment, you have to solve both the environmental and the socio-economic challenges.



PLACES CATEGORY

Minimum requirements: Contribution to Place

Other credits: Identity of Place; Movement and Connectivity; and Safer Spaces



Lapalala Wilderness School, Sean Gibson

One of the goals of the Places category is the appropriate integration of projects with their location.

The **PLACES** category – according to Adrie Fourie, category director and head of the Sustainable Cities and Research department at Solid Green Consulting – highlights the imperative that building design should no longer be regarded in isolation. The credits aim to ensure improved social cohesion, the appropriate integration of projects with their location and a commitment to people-centred design.

“In the built environment, you have to solve both the environmental and the socio-economic challenges,” says Marc Sherratt, task force member and Managing Director at MSSA. “There hasn’t been the understanding that you must solve both challenges simultaneously. We live in Africa, and we have dire socio-economic challenges – if not solved, these will result in our countries crumbling.”

The category has its challenges, but task force member and partner at DHK architects, Peter Stokes, says we shouldn’t be discouraged: “If you’re a good designer, you should not be scared of this category.”

CONTRIBUTION TO PLACE ensures the development of an integrated design team response to the contextual opportunities and challenges of a site, while ensuring projects create accessible spaces that can contribute to community building and interactive engagement. As a minimum requirement, a checklist is being developed to help teams cover the basics themselves. Stokes believes this is low-hanging fruit.

MOVEMENT AND CONNECTIVITY encourages mobile diversity that builds on the opportunities of a building’s design and location to encourage occupants and visitors to use active, low-carbon and public transport options. Stokes believes it’s one of the more difficult credits, because it is influenced by its location and accessibility, and if

a building is in the city centre, the team will have to drive it. “I’ve worked on schemes where they’ve developed green transport plans to enable connectivity and transportation by offering tickets, finding a bus system, or encouraging a local transport system to extend its route if there are enough people.”

Zendré Compion, Sustainable Building consultant and task force member, advises that “instead of considering place-related credits as being difficult, the industry needs to realise the great impact that early decisions around location and available infrastructure can have on sustainability throughout the building lifecycle.”

As the starting point of implementing this credit, it would be expected that a project performs the mobility



Rammed earth is traditional to cultures in the Limpopo region, at a smaller scale. It’s known as *thidelo* in tshi-Venda, and *thitelo* in si Pedi.

Lapalala Wilderness School, Sean Gibson

assessment and Mobility Plan. To achieve more points, the project must demonstrate that at least three initiatives that contribute to sustainable mobility have been implemented. “The second part of this credit is the practical implementation in response to the relevant challenges and opportunities for sustainable mobility, and the project is encouraged to show how the building’s design and location encourage walking, cycling and public transport,” says Compion.

So why go through the trouble? Stokes uses a retail scheme as example: “The more people you can get interfacing with that building, the more successful the tenants will be, and the financing of those buildings becomes easier.”

IDENTITY OF PLACE urges teams to find appropriate ways to reflect the local culture, heritage and identity by publicly demonstrable design interventions.

As the starting point when considering this credit, the goal is to ensure that the relevant research has been done. Professional teams will have to submit a culture and heritage report of the site and be able to document the research.

“The next level is to implement a project out of this research, communicating with the public realm and expressing information on the street edge as to how the building is designed to educate people with regard to its local history and culture,” says Sherratt. “This can include public artworks, for example.” The highest tier requires social upliftment and requires proof of engagement with the site’s vulnerable communities. “[These can be] things like public toilets or integrating with the informal waste recyclers, without compromising security,” he adds.

SAFER SPACES rewards design teams for an integrated approach to ensuring that a site is safe through its design. According to Fourie, the intent is to create safer spaces that support all end-users while accommodating the South African context and focusing on a people-centred design.

Stokes elaborates with the following advice: “Most people overthink it. They think the only way to make something safe is to put a high fence around it with lots of spikes, and lights and cameras and sensors, but that makes for a very inhumane environment.” He believes safety should be built into the design via, for example, the design of thresholds, the inclusion of passive surveillance or good lighting.

NATURE CATEGORY

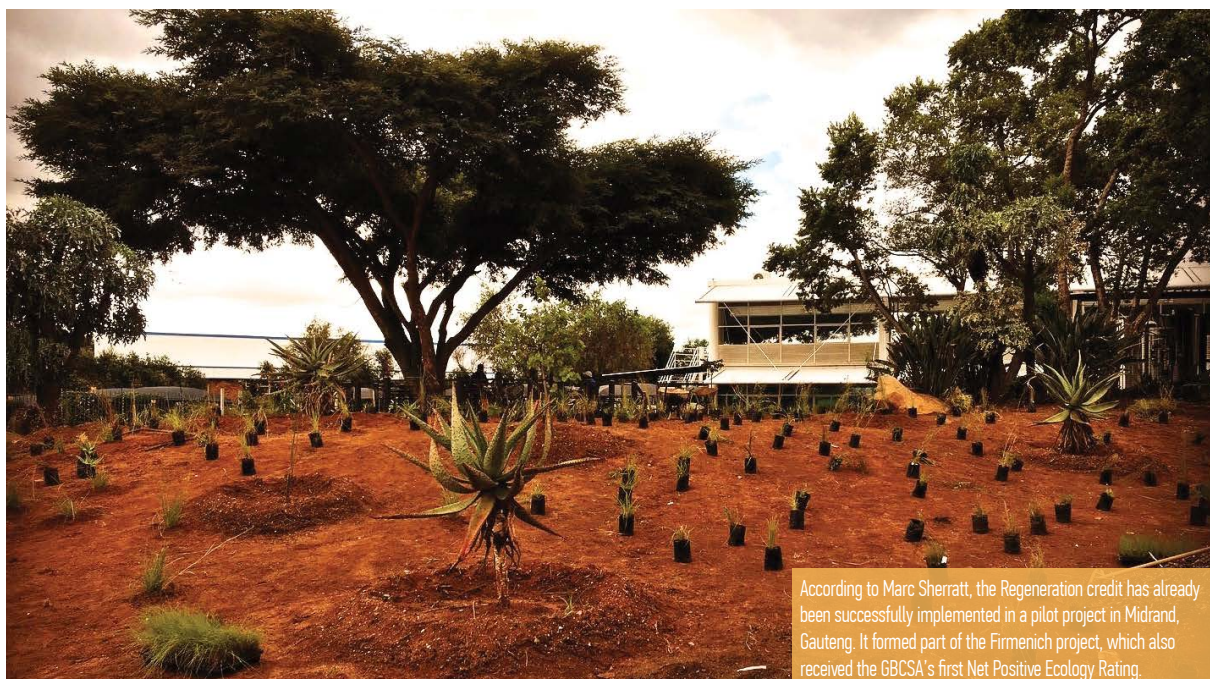
Minimum requirements: Impacts on Nature
Other credits: Ecological Regeneration; Nature Connectivity; Nature Stewardship; and Waterway Protection



The credits in the **NATURE** category calls on the anti-extinction warriors, conservation stewards and biodiversity creators. There’s also room for engineers to prove their worth and, according to category director and Technical Principal at MPAMOT Mike Aldous, they are not only targeted at organisations with large land portfolios. “The objective is to be as universally accessible as possible, allowing project teams to plot their own compliance path based on opportunities and site constraints.”

IMPACTS ON NATURE aims to safeguard the ecological value of a site, protecting watercourses and discouraging development in sensitive natural areas, while aligning with the local biodiversity context. Aldous says they tried to simplify the process by aligning the requirements with current legislation. “Some of the basic criteria would be considering development within the proximity of watercourses, the impact on wetlands, or the site’s ecological value and

GBCSA



According to Marc Sherratt, the Regeneration credit has already been successfully implemented in a pilot project in Midrand, Gauteng. It formed part of the Firmenich project, which also received the GBCSA’s first Net Positive Ecology Rating.



The Firmenich project in Midrand, Gauteng.

sensitivity.” Along with that, credits from previous tools have been incorporated in a progressive-option manner, and include aspects around light as well as conserving existing natural soil, hydrological and vegetation elements.

The **ECOLOGICAL REGENERATION** credit encourages teams to move away from exotic landscaping towards reintroducing locally indigenous landscapes and biodiversity. “In one sense, you have a prescriptive pathway,” says Aldous, “where you have 10% of plants from one species, 20% of plants from one genus and 30% of plants from one family. It forces you to take a more integrated landscaping approach.”

According to Sherratt, who is also on this task force, there are three points in this credit: “The first is if 60% of your plants are locally indigenous, the next level is two points for 80% of your plants being locally indigenous, and then three points for 100% locally indigenous plants.” This credit is also not restrictive, because the emphasis is on regeneration rather than restoration. “Restoration is you bringing back the original species. Regeneration speaks to the freedom to choose the landscape that would bring the most biodiversity back,” says Sherratt.

The GBCSA teamed up with the South African National Biodiversity Institute (SANBI) to support the project team’s outcome. According to Sherratt, SANBI has an online vegetation map of the whole country. It can be used by anyone and provides lists of site-specific plants.

Sherratt adds that there are various benefits: natural biodiverse landscapes absorb more carbon than exotic landscapes, giving you a carbon sequestration advantage, and the budget allocation for landscaping can be lower when considering the full lifecycle of selection.

NATURE CONNECTIVITY aims at connecting species throughout the site, and to adjacent sites, at least within a 500m radius of the project site. As a basic requirement,



The Nature category calls on the anti-extinction warriors, conservation stewards and biodiversity creators.

connectivity should be achieved by providing an ecological stepping stone to existing habitats.

Dr Peta Brom, Senior Sustainability Consultant and Certification Operations Manager at Ecolution, says it’s possible for even urban renewal projects to gain at least one point. The team should do an assessment of the fauna in the specific area, identify their lifecycles and enhance the habitat or features of the development accordingly. You could, for example, provide bird boxes as well as natural grazing or nesting material to attract certain species.

To reach exceptional levels, Aldous says, “The site must be built to encourage structural connectivity and demonstrate continuous unbroken connectivity with the natural area.” According to Brom, you must address structural barriers, such as roads between landscaped areas, in such a way that small animals can safely move between natural and landscaped areas.

NATURE STEWARDSHIP encourages project teams to provide restoration or protection activities beyond the development boundary. According to Aldous, it’s tricky, because it’s off-site, and the team is still working through some of the legalities of how these projects can be achieved and maintained in South Africa.

Brom is, however, excited. “I’ve seen a groundswell in community initiatives where people are adopting a relatively degraded patch of natural habitat and getting involved in various levels of rehabilitation activities.” Initiatives like these will now be acknowledged officially on various levels.

WATERWAY PROTECTION is, says Aldous, very much geared towards blending engineering with delivering a sustainable urban drainage system, and the goal is to minimise any negative impact on the natural watercourses. Elements to consider are preventing increased development run-off volume and intensity when natural environments make way for impermeable development, as well as minimising contamination in the form of total suspended solids, nitrates and phosphates from man-made sources.

“Most of the bigger municipalities have started implementing various storm-water management and sustainable urban drainage design requirements within their basic urban planning and township approval processes,” says Aldous. “We’ve been trying to stitch these together in such a way that we come up with a nationally applicable standard that pulls the best practices together.” +

CALLING ALL SUSTAINABILITY PIONEERS

“We are looking for projects to pilot this tool,” says the GBCSA’s Head of Technical, Georgina Smit. GBCSA encourages and invites any stakeholders currently planning a new build project to consider embarking on this pioneering industry journey with them by piloting this tool on their project. GBCSA is able to support this process and will allow the current tools to also be used concurrently. “Please let us know if you are interested in joining this industry initiative, and to be part of writing the next chapter of green building history,” says Smit.



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FUTURE FORWARD: Green Real Estate

The MSCI South Africa Green Annual Property Index continued to support the investment case for energy- and resource-efficient real estate in 2022.

WORDS Growthpoint Properties and GBCSA
IMAGES Growthpoint Properties

Released annually since 2016, in conjunction with the Green Building Council South Africa (GBCSA) and sponsored by Growthpoint Properties (JSE: GRT), the index provides an independent, globally consistent view on the investment performance of green-certified and non-certified offices.

The index showed that green-certified Prime & A-grade offices produced an improved total return in 2022 and outperformed non-certified office assets of a similar quality by 50 basis points (bps) during the year.

According to Growthpoint Head of Asset Management: Offices, Paul Kollenberg, “The MSCI index once again shows that green buildings are good investments. But more than that, it reflects lower power and water costs in these properties. At a time when tenants are looking at ‘total cost of occupation’, and utility prices keep escalating, it makes sense to rent space in a green efficient building. Added to that, the cost of providing backup power to these properties will be reduced because consumption is lower.”

At the end of 2022, the index sample comprised 303 prime and A grade office properties valued at R58.2 billion, of which 164 were green-certified buildings. These were compared to 112 non-certified offices of a similar quality.

“These results confirm that there are long-term benefits associated with pursuing green building certification. With some tough market conditions at play, green-certified buildings are demonstrating their resilience and value,” says Georgina Smit, GBCSA Head of Technical.



Green-certified Prime & A-grade offices outperformed similar non-certified office assets by 50bps in 2022.

GREEN OFFICES HAVE OUTPERFORMED BY 20.9% SINCE 2016

For the year ended December 2022, the green-certified office sample delivered a total return of 6.1%, 50bps above the non-certified sample’s return of 5.6%. Since the index’s inception in 2016, the sample of green-certified offices outperformed the non-certified sample by a cumulative 20.9%.

Over this seven-year period, green-certified offices had a 2.1% lower vacancy rate and 1.0% higher net operating income (NOI) growth. This robust NOI growth underpinned green offices’ income return, which was in line with that of non-certified offices despite a 25% higher capital value per square metre. A 30% higher NOI per square metre compared to non-certified office buildings reinforced the premium that blue-chip occupiers are placing on green office accommodation.

GREEN OFFICE CASH FLOWS ARE DEEMED LOWER RISK

Green-certified offices boasted significantly lower per square metre usage of electricity (-4.5%) and water (-14.3%) compared to non-certified offices. With administered costs rising at rates higher than inflation, these costs can



Paul Kollenberg, Head of Asset Management: Offices, Growthpoint Properties



Eileen Andrew, MSCI Vice President



Graeme Cruickshanks, Head of Sustainability and Utilities, Growthpoint Properties



A striking glass facade across two interlinked towers characterises Growthpoint's premium-grade office development at 144 Oxford.

have a significant impact on performance over the lifecycle of a property. In 2022, the green-certified office sample's gross cost-to-income ratio was 39.7%, substantially lower than the 43.0% of the non-certified subset. As a result, green offices had a 20bps lower capitalisation rate and a higher forward income growth, implying that its future cash flows were deemed both lower risk and likely to grow at a faster rate.

GREEN-CERTIFIED OFFICES ARE BETTER ACROSS ALL MEASURES

Released in April 2023, the MSCI South Africa Green Annual Property Index demonstrated the positive relationship between green-certified buildings and investment returns but also of its impact on property fundamentals that could underpin future performance.

“The highlight of these results lies in the reduced cost-to-income ratios. It shows that through certification, owners can manage costs better because they have future-proofed their assets. In the current market, where rentals are difficult to increase, managing costs – especially water and electricity – is more important than ever, so efficiency is paramount,” says MSCI Vice President Eileen Andrew.

CEO of GBCSA Lisa Reynolds stated that “In the past few years, the conversation has shifted. Green-certified buildings always made business sense due to



Through certification, owners can manage costs better because they have future-proofed their assets.



Blue-chip occupiers are placing a premium on green office accommodation.

the financial savings in the utility bills. Currently, we add the concepts of risk into the conversations – the risks due to the impact of climate change, the risks due to the lack of resource security and, most importantly, the risk of stranded assets. Certified green buildings play a huge role in mitigating these risks. I believe that this is confirmed by the MSCI results.”

As a leader in environmentally conscious commercial property development, Growthpoint owns and manages the largest portfolio of green-certified buildings in Africa. Its green buildings contribute to greater climate change resilience and reduce its carbon footprint as it continues to strive for excellent environmental, social and governance (ESG) performance. Growthpoint's sustainability strategy is to certify its entire portfolio of buildings as carbon neutral by 2050.

Growthpoint Head of Sustainability and Utilities Grahame Cruickshanks says, “In addition to the financial, operational and risk-mitigating advantages demonstrated by the MSCI index, green buildings are essential for organisations – both landlords and tenants – to meet their ESG commitments. Growthpoint invests in green buildings because it is the right thing to do for environmental sustainability and South Africa's green economy growth.”

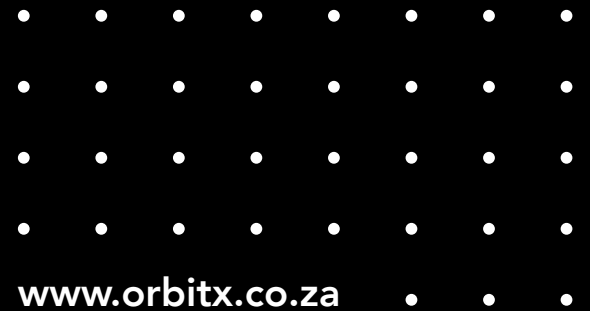
To view the MSCI SA Green Property Index fact sheet, visit www.msci.com/www/ipd-factsheets/msci-south-africa-green-annual/0163242457 +



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A GREEN CONNE



Nexus 1 is the first completed building that forms part of the Nexus precinct, located in Gauteng's burgeoning Waterfall City.

WORDS Nicole Cameron IMAGES Franz Rab

PROJECT NUTSHELL

Location: 37 Magwa Crescent, Waterfall City, Midrand
Green Star rating: 5-Star Green Star Office Design v1.1 rating
Type of building: Offices and entertainment terrace
Project dates: February 2021 – February 2022
Project size: 7 363m²

CTION



Developed by Attacq, the four-storey Nexus 1 is located on Magwa Crescent in Gauteng's Waterfall City, and forms a part of the Nexus precinct, together with the Courtyard Hotel and two other office buildings positioned in a landscaped site on a shared basement. In February 2023, the new building was accredited with a 5-Star Green Star Office Design v1.1 rating by the Green Building Council South Africa (GBCSA), with further aims to achieve an As-Built rating and Net-Zero Carbon certification to demonstrate its intent on contributing to sustainability in the built environment.

VISUAL APPEAL

With the whole Nexus precinct being designed by LYT Architecture, including two buildings still to come, the brief was to design a building with a distinctive architectural style, and in keeping with Attacq's commitment to meeting a minimum 4-Star GBCSA Green Star rating. The building's facade holds visual appeal through a multifaceted treatment, with the use of glass, precast concrete fins, and ventilated porcelain tiles in different shades of grey. These respond to the orientation of each elevation, adding interest while remaining aligned with the uncluttered visual language used throughout Waterfall City. The vertical elements create an impression of height, while the colour palette complements the neighbouring Courtyard Hotel.

The access to natural lighting available to Nexus 1's central core and surrounding office space was maximised to achieve energy saving, at the same time promoting occupant wellbeing. There is an entertainment terrace on the third floor, with two fire escapes located within the central core of the building, leaving the rest of the space available for easy tenant sub-division.

Entrance to the building is from the road or the central piazza, which is accessible from all buildings on the square, with pedestrian and cycling routes connecting to nearby residential and commercial precincts. While all Waterfall City buildings are located close to public transport routes, cycling facilities are promoted, as this is the ultimate low-carbon commuter choice.

BEST IN CLASS

A host of advanced features in the building deliver best-in-class environmental sustainability. Notably, the project achieved full points for the energy use credit, meaning that the base building has net-zero modelled emissions. Elri Syfert, Sustainable Building Consultant at Solid Green Consulting, says that this was achieved through passive and efficient design measures, and a solar PV system. "Due to the PV system, the peak electrical demand load on electricity infrastructure has been reduced by 34%," she says.

The building's lighting design ensures the use of artificial lighting with minimal energy consumption, as the energy use of 1.5W/m² per 100 Lux was set for the office lighting power densities. Given that gathering information is key to understanding and managing building systems, sub-metering of the major energy-consuming systems



A host of advanced features in the building deliver best-in-class environmental sustainability.



The vertical elements in the building's facade create an impression of height.



A rendered image depicts the entrance and lobby of Nexus 1.

is in place. This is also the case when it comes to water consumption, with sub-metering present, and savings measures such as water-efficient fittings that limit the modelled occupant water usage to 0.56L/day/m².

As construction is an activity associated with a high level of greenhouse gas emissions, a project-specific environmental management plan was developed and implemented for the duration of construction, thus establishing guidelines to follow for minimal environmental impact. Likewise, a project-specific Waste Management Plan was developed and implemented to reduce the contribution of waste going to landfill. All of the selected gaseous and fire suppression systems and thermal insulants used for the development have an ozone depletion potential (ODP) of zero, to eliminate any contributions towards long-term damage of the earth's stratospheric ozone layer.

A WORLD-CLASS SMART CITY

Such commitment to green practices is evident throughout the world-class smart city that is Waterfall City, which – for the eighth time in nine years – was named Best Mixed-use Development in South Africa last year at the International Property Awards. As part of Attacq's environmental, social and governance (ESG) strategy, sustainability has been a key focus area for the group, with the vision to develop Waterfall City as a safe, sustainable, mixed-use city that provides a vibrant and healthy living environment. As Attacq's former Chief Development Officer Giles Pendleton put it: "We believe that buildings should not be considered in isolation from their environments and communities, but rather complement and accentuate their surroundings. The rigorous focus on material selection, human comfort, air quality and human health features of our buildings rightly prioritises the most important asset of our buildings – people."

The Nexus 1 building sets a benchmark for sustainable premium office space, as it will be the first net-zero carbon level 1 building within Waterfall City. Syfert says that the features to ensure that the building qualifies for this rating will include the reduced demand gained through passive

design measures and performance building simulations done early on in the project, energy-efficient equipment and appliances, and adding renewable energy to cover the remaining energy demand.

A total system size of 223kWp will produce an estimated power production of 379 900kWh/year. This will meet the building's annual energy use in terms of heating (2 758kWh), cooling (130 159kWh), ventilation (85 779.1kWh), fixed lighting (88 337kWh), miscellaneous fans (37 024kWh) and hot water (3 184kWh).



The Nexus 1 building facade comprises three materials: glass, precast concrete fins and porcelain tiles.



The four-storey Nexus 1 is located on Magwa Crescent in Waterfall City, and forms a part of the Nexus precinct.

MAINTAINING A LEGACY

“For the As-Built submission, we need to ensure that future tenants adhere to the Green Star requirements relevant to the project,” says Syfert. “Solid Green has prepared a Green Guide, outlining these requirements, which must be given to future tenants and future fit-out teams to implement from the concept design phase.”

Most exciting, perhaps, is the fact that a building like Nexus 1 represents what is fast moving towards the acceptable ‘green standard’ – a far cry from where the industry stood a decade ago. Syfert comments on the exponential growth in the sector: “Where building green was a ‘nice-to-have’, it is becoming a ‘must-have’. In order to obtain international funding, ESG reporting is required, and that has had a huge impact, with third-party verification from an organisation like the GBCSA contributing significantly to a company’s ESG. Alongside South Africa’s commitment to the Paris Agreement, developers with large portfolios are also under pressure to design and build in a way that reduces carbon footprint.”



Nexus 1 represents what is fast moving towards the acceptable ‘green standard’.

Along with growth in the industry, the costs of going green have been reduced, and the long-term benefits usually outweigh any price premium. This relates to both financial and environmental benefits. Syfert says that the Nexus 1 developers were able to reduce their carbon footprint along with the occupancy costs. And, as Lourens du Toit, Head of Sustainability, Infrastructure and Land at Attacq, explains: “We pursued a net-zero carbon level 1 certification to demonstrate our commitment to developing environmentally friendly and sustainable spaces for our clients, as well as a broader commitment to a sustainable built environment in general.”

There is little doubt that Gauteng’s Midrand is richer for the ethos that Waterfall City has brought in creating a green environment that benefits residents and businesses operating within the precinct. Nexus 1 paves a new way forward, with its enhanced approach to sustainable planning and development.

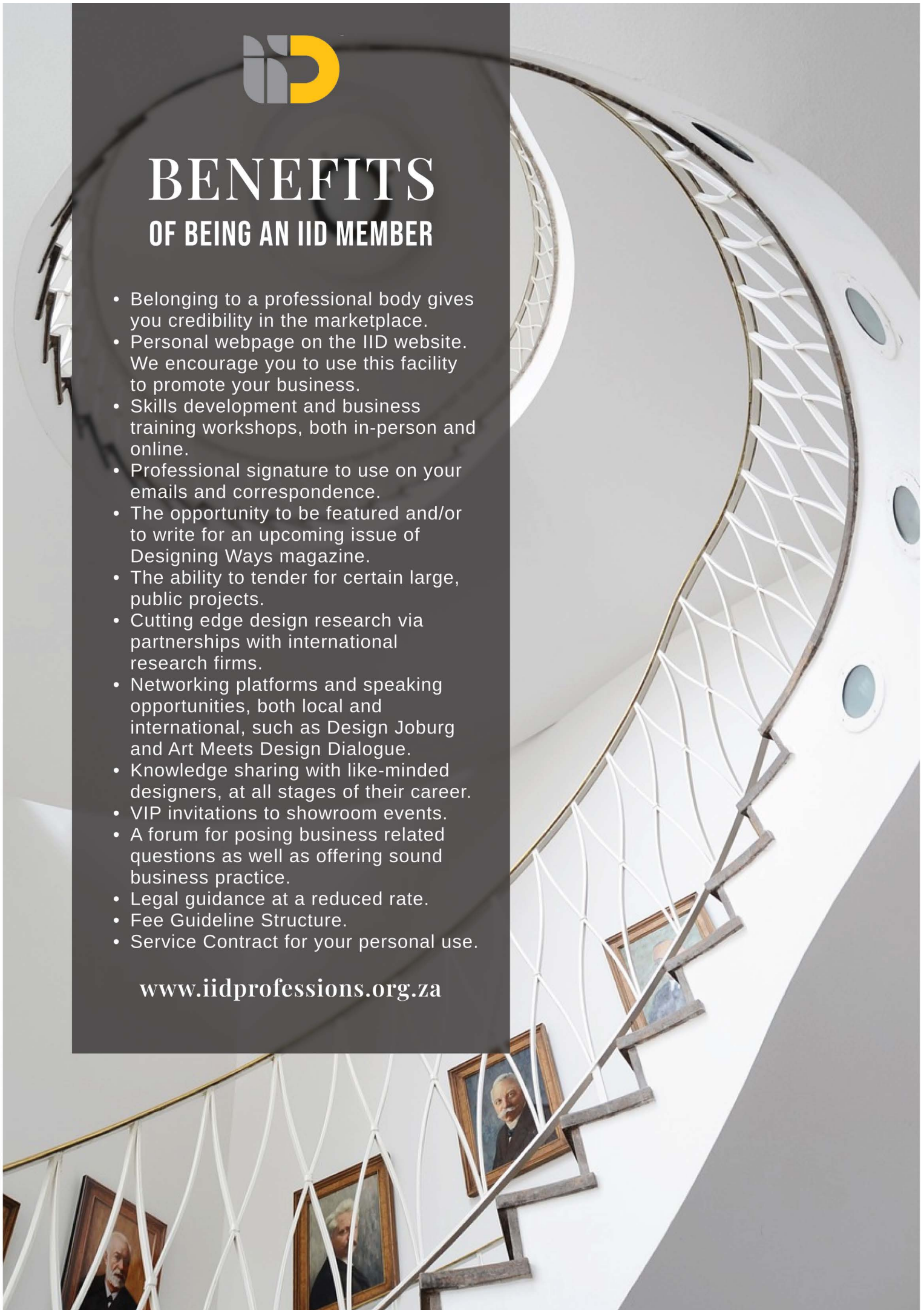
As Waterfall Management Company CEO Willie Vos says, “Winning the Best Mixed-use Development in South Africa award again reaffirms Waterfall City’s world-class status. Such recognition is an ongoing achievement that we and all our partners are very proud of. It has been an honour to watch this development evolve, and we have entered a new and exciting phase of our evolution as a world-class smart city. We will continue to showcase the excellence of Waterfall City and look forward to what the future holds.” Nexus 1 represents the start of this exciting future ahead. +



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INDUSTRIAL RESOLUTIONS

Investec Property Fund's
existing industrial
buildings earn their stars



The first industrial buildings – in Investec Property Fund’s portfolio – have been awarded their Green Stars using the customised Existing Building Performance Custom Industrial PILOT tool.

WORDS Melinda Hardisty
IMAGES Investec Property Fund

The installation of a new 550kWp PV array significantly improved the energy efficiency at 39 Imvubu Park Place.



The Green Building Council South Africa's Green Star Existing Building Performance (EBP) rating tool has been available for a few years now. It's aimed at rewarding buildings that are managed sustainably well, can demonstrate good operational performance over a measured period, and contribute to better-quality spaces for tenants. Although designed for use on as many building types as possible, the increased demand for it on industrial building justified a customisation to update some elements for consistency.

Late in 2020, adaptation of the tool commenced so that it could be used to measure operational performance of industrial buildings. The Existing Building Performance Custom Industrial PILOT tool was launched in June 2022.

EXISTING INDUSTRIAL BUILDINGS TOOL

Industrial buildings have some very different operational requirements from commercial properties. Certain building types such as offices, large shops, places of assembly and educational buildings were able to use the original EBP tool in its standard form. In practice, it has largely been successfully utilised for commercial office projects. Some other typologies like multi-unit residential, light manufacturing, warehousing, indoor sport facilities, healthcare and laboratories could apply to have some criteria adjusted for their needs through an eligibility ruling from the Green Building Council South Africa (GBCSA). While some industrial buildings have received Green Star ratings using this tool, it also highlighted some of the areas that needed to be a little more specialised.

GBCSA Technical Manager Jenni Lombard explains that the new tool was created in response to the growing industrial sector, the unique building operations, the lack of relevant energy and water benchmarks, and the huge variance in landlord and tenant responsibilities. Lombard explains that the tool development involved a "customisation process to offer the market a standardised

guideline for energy and water benchmarking for industrial buildings, as this currently does not exist in the South African property market. It also clarifies the nuances around industrial building ownership. For instance, many tenancies operate on triple net leases, placing a lot of the operational decision-making with the tenant and not the landlord". She adds that the industrial typology itself is quite varied, incorporating sub-categories like distribution centres, warehousing, light manufacturing, and workshops. The tool enables landlords and tenants to work together to measure and improve operational performance.

Because this tool focuses on buildings' operational performance, many of the requirements revolve around defining how the building is to be used by occupants. So, plans, policies and programmes need to be compiled in manuals as part of the submission for a Green-Star rating.

Director at Ecocentric Jutta Berns was the sustainability consultant involved in all of Investec Property Fund (IPF)'s building submissions. She highlights the importance of tenant involvement in the measurement and improvement of operational performance. "The landlord and tenant communication process can get very complicated; it is certainly simpler with owner-occupied buildings," she says, "and with the industrial sector, the landlord has even less control over processes than they would in a commercial building. Requesting full disclosure from the tenant on energy and water-process loads is extremely difficult." It does, of course, help where the tenants concerned have their own corporate targets and policies on sustainability that align with the landlord's goals.

As with the standard EBP tool, buildings' performance in terms of energy and water use is measured over a 12-month period. Berns explains how staff also completed questionnaires about the indoor environment, which includes aspects such as natural daylight and fresh air, particularly in occupied spaces. Indoor air quality is also tested for factors such as carbon monoxide and other contaminants. The certification is then valid for three years, and a building will then need to be re-certified.



39 Imvubu Park Place comprises 9 715m² of industrial space.



INVESTEC PROPERTY FUND

Investec Property Fund Limited aims to have its properties certified to a minimum 5-Star Level. Many of its commercial office buildings have already been rated, or are in the process of being re-rated.

Graham Hutchinson, Head of South African Business at IPF, highlights the importance of sustainability to the company. “In line with our ambition to unlock the potential of space and desire to lead in a more sustainable built environment, Investec Property Fund Limited has partnered with the GBCSA to participate in the Green-Star Existing Building Performance Industrial Custom Industrial PILOT,” he says. We look at five of IPF’s industrial buildings, which have now been rated 4-Star as part of the EBP Custom Industrial PILOT tool.

39 IMVUBU PARK PLACE, RIVERHORSE VALLEY

IPF-owned 39 Imvubu Park Place, in Riverhorse Valley, KwaZulu-Natal, is an industrial distribution centre. A listed pharmaceutical manufacturer is the single tenant at this property. The building comprises 9 715m² of industrial space for the distribution of medical supplies, as well as a supporting office and administration component.

Sustainable building features include a 19% improvement in energy efficiency when compared to the facility’s historical performance. This was largely due to the installation of a new 550kWp PV array during the course of the assessment period. Water efficiency is also 71% better than the industry benchmark.

Where existing buildings are occupied by tenants, as in the case of IPF’s portfolio, they have to be intrinsically involved in the development of plans and the implementation of guidelines during operations. Berns highlights that



The tool enables landlords and tenants to work together to measure and improve operational performance.

this can be one of the most challenging aspects of the assessment and certification of existing buildings. In this case, however, with the tenant being a pharmaceutical company, they already had very developed operational protocols, particularly for things like waste management.

So, it was easier to implement guidelines in an already structured setting. As part of the exercise, tenant engagement ensured their buy-in on defined sustainability requirements and protocols. A green travel plan was set up based on staff surveys, particularly encouraging the use of public transport for all building users. The tenant also co-signed policies for green cleaning, which reduces hazardous chemical use, sustainable procurement and purchasing, and solid waste management.

49 DIESEL ROAD, JOHANNESBURG

A soft-drink manufacturer is the single tenant occupying 49 Diesel Road in Isando, Johannesburg. The facility is a 22 668m² industrial building serving as a distribution centre for soft drinks, including space for distribution operations and an office component. The assessment period for this building showed that it is 63% more energy efficient than the industry benchmark.

As with 39 Imvubu, Ecocentric prepared policies and guidelines for tenant implementation, outlining sustainability targets and setting out the operations around travel, green cleaning, sustainable procurement and purchasing, and solid waste management.



15 Pomona Road, in Kempton Park, houses a logistics and distribution centre.

15 POMONA ROAD, GAUTENG

Located at 15 Pomona Road, in Kempton Park's Pomona, Gauteng, this 9 038m² industrial building houses a global logistics company. It is a logistics and distribution centre with a small supporting office component.

The assessment period revealed it to be 56% more energy efficient and 62% more water efficient than the normalised industry benchmarks. Ecocentric compiled operational policy and guideline documents for green cleaning, solid waste management and green travel for implementation by building occupants.

16 POMONA ROAD, GAUTENG

Right next door is 16 Pomona Road, an industrial distribution centre occupied by a leading manufacturer and distributor of agricultural machinery and technology.

The company occupies a 7 394m² facility, which includes a small office component. Ecocentric assisted with setting out policies for operational use and a green travel plan. The building proved to be 60% more energy efficient and 80% more water efficient than the normalised industry benchmarks.

10 JANSEN ROAD, GAUTENG

The 19 294m² facility at 10 Jansen Road in Gauteng's Jetpark is home to a tyre manufacturer. The complex comprises a distribution space, a fitment centre and administration offices.

The monitoring process revealed that this industrial building is 45% more energy efficient, and 66% more water efficient than the normalised industry benchmark. A green travel plan was developed, and policy and procedure protocols for green cleaning, sustainable procurement and purchasing, and solid waste management were implemented.



The EBP Custom PILOT illustrates that a useful green building benchmark for industrial buildings is available.



15 Pomona Road is a 9 038m² industrial facility.



16 Pomona Road is 60% more energy efficient and 80% more water efficient than industry benchmarks.



10 Jansen Road, Jetpark, is home to the distribution hub and fitment centre of a leading tyre manufacturer.

BEYOND THE PILOT

Lombard states that the GBCSA is pleased with the pilot projects thus far, as it “illustrates that the Customisation has been successfully applied and a useful green building benchmark for industrial buildings is available”. She adds that IPF is a “key industrial participant and has



IPF has been involved from the onset of the tool customisation as a data supplier.

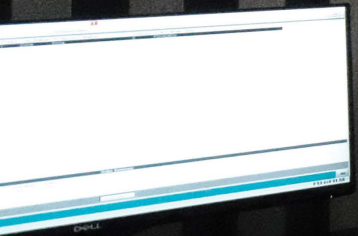
been involved from the onset of the tool customisation as a data supplier. Without this data, the formation of the energy and water framework for industrial building-types would not have been possible”.

For IPF, Hutchinson adds: “We are proud that through our partnership with GBCSA we are able to obtain the five Industrial Green Star certifications, and we look forward to continuing to collaborate for the sustainability of the environment and the societies we operate in.”

At present, there are 18 projects registered with the GBCSA for the Existing Building Performance Custom Industrial PILOT. +



FUJIFILM



FUJIFILM



PICTURE Perfect

Fujifilm South Africa unveiled its new head office in Sandton, celebrating two milestones – a decade operating in the country, and a Net-Zero Carbon Level 1 Modelled rating from the GBCSA.

WORDS Katherine Graham
IMAGES Nathalie Boucry

PROJECT NUTSHELL

Location: 18 Holt Street, Sandton, Johannesburg
Green Star Rating: Net-Zero Carbon Level 1 Modelled
Base Building Emissions certification
Type of Building: Commercial office
Project Dates: Certified March 2023
Project Size: 999m² total gross floor area

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When Fujifilm SA moved its offices from Woodmead to Sandton, its commitment to climate action was already top of mind. Five years ago, Fujifilm – Japanese photographic company turned global high-tech corporation – announced its Sustainable Value Plan 2030, in line with the United Nations’ Sustainable Development Goals.

The company’s environmental goals under this plan included focusing on climate change, promoting the recycling of resources and addressing energy issues towards creating a decarbonised society. Part of Fujifilm’s commitment was to tackle climate change by using renewable energy to achieve net-zero carbon emissions by March 2041.

These ambitious aims have been concretised by the building of its new 999m², five-storey headquarters in the heart of Sandton. “The choice of constructing the building in Sandton as our regional head office for sub-Saharan Africa was because South Africa still offers the most advanced infrastructure on the sub-continent and is ideally located to support our customers in the surrounding countries,” explains Wessel Visser, corporate group director at Fujifilm South Africa.



The Fujifilm Technology Centre Africa is the only one of its kind on the continent.

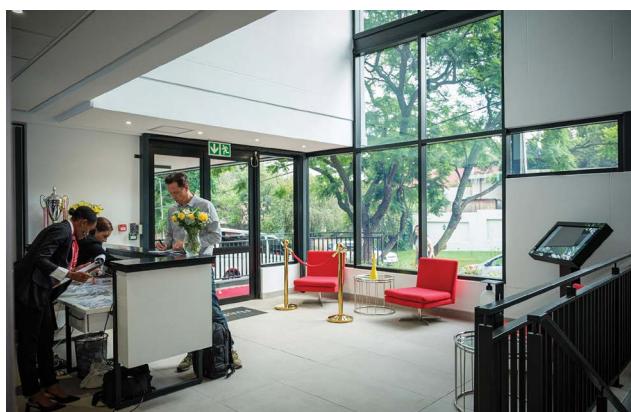
The building boasts an array of impressive green features, such as solar roof panels with an annual production of 112 000kWh; motion sensors and day/night lighting; energy-efficient and water-conservative plumbing; and rainwater harvest tanks.

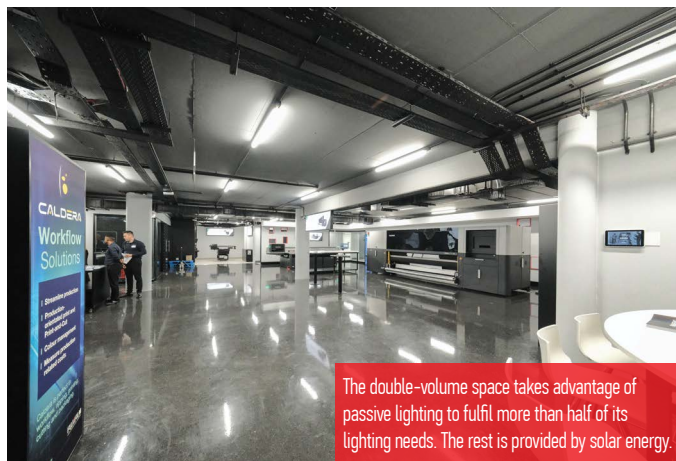
A UNIQUE TECH CENTRE

In addition to being an office space, the building incorporates a Fujifilm repair centre and a technology centre. The Fujifilm Technology Centre Africa is the only one of its kind on the continent, providing a demo and training hub for the company’s different departments. Here, customers can receive hands-on, up-to-date training on a range of innovative products. These include graphic communication (wide-format printing, packaging, commercial digital and commercial



Fujifilm’s new SA head office boasts a number of sustainability features, including solar panels and rainwater harvesting.





The double-volume space takes advantage of passive lighting to fulfil more than half of its lighting needs. The rest is provided by solar energy.

offset), medical systems (radiography, mammography, pathology and X-ray diagnostics), and imaging solutions (Instax instant cameras and printers, Fujifilm X-series and GFX mirrorless cameras).

Visser says the feedback about the new head office has been overwhelmingly positive. “Our clients like the modern look and feel of the building, plus its central location,” he says. “Many are not aware of the scope of Fujifilm’s operations, such as our healthcare solutions, so they learn a lot from seeing all the products on display.”

Employees are happy too: “While it’s exciting to work in a new space, there is also the opportunity for them to invite clients to view the different showrooms,” explains Visser. Importantly, Fujifilm can now hold events here – a 30-seater auditorium offers customer product training and photography workshops. “We recently hosted our regional medical distributors here for a two-day event,” he adds. “Our floor space can now accommodate photographic exhibitions – we have one planned for later this year, which will showcase the work of Fujifilm ambassadors.”

HARNESSING THE SUN’S ENERGY

Part of the building’s appeal is its reliance on passive lighting. “Optimising the passive design of the building to run off the sun’s energy reduces the amount of power needed for lighting and comfort, which constitutes up to 40 to 60% of a building’s energy use,” asserts Thato Molapo, modelling and simulation consultant at Solid Green Consulting.

Collaborating closely with Empowered Spaces Architects and project architect Gabriella Cotter, Molapo

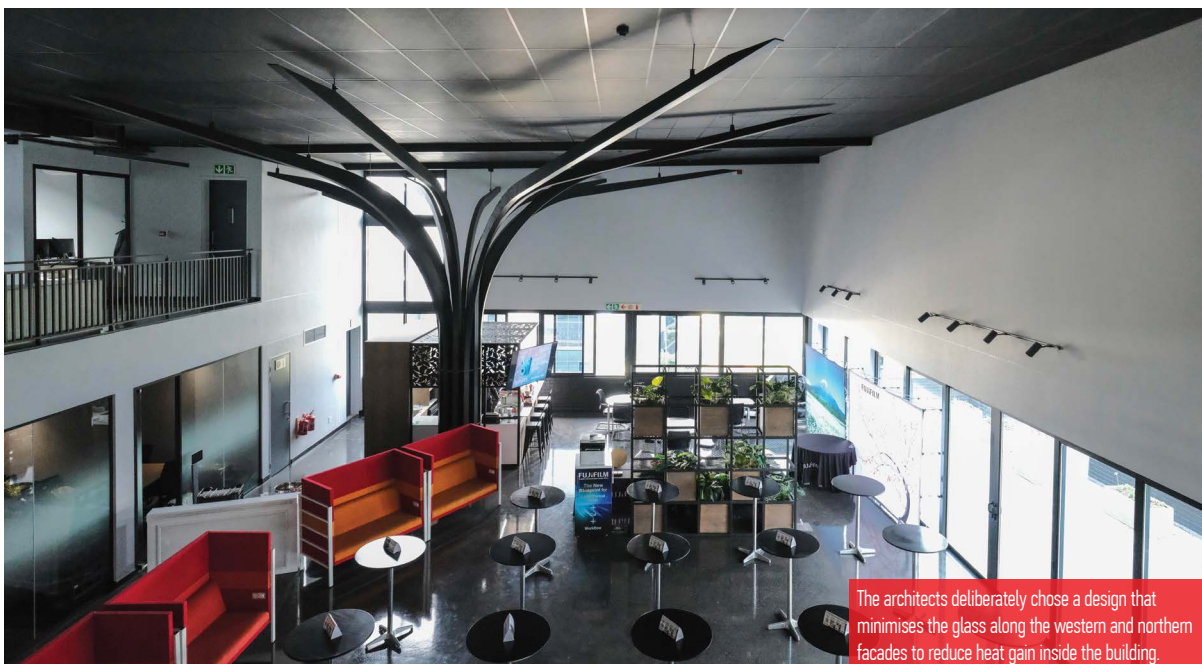
initiated an integrated design process. “We began by setting targets to reduce the building’s carbon emissions in line with the client’s requirements,” he says. “In order to meet these targets, we investigated climate opportunities and challenges, and then considered passive and active design interventions.”



Part of the building’s appeal is its reliance on passive lighting.

The building’s zero-carbon rating was enhanced with the help of Daisy Energy, the company responsible for the solar panel installation. “By leveraging our expertise and incorporating innovative technology, we were able to assist Fujifilm in designing a building that aligns with their sustainability goals,” says Keegan Sternslo, managing director of Daisy Energy. “This demonstrates the effectiveness of our collaborative approach in creating environmentally conscious and economically viable solutions for our clients.”

Finding a suitable design for the building was challenging, given that the architects had to work within the constraints set by Fujifilm SA, admits Cotter. “One of the biggest challenges the project team faced was adapting the existing design for the building to Fujifilm’s bespoke requirements,” she says. “We overcame this by working closely together in order to incorporate Fujifilm’s requirements, while retaining the original intention for the design.”



The architects deliberately chose a design that minimises the glass along the western and northern facades to reduce heat gain inside the building.

Coter credits the efforts of Solid Green Consulting in achieving this rating. “They guided us with their energy studies and made recommendations, such as glazing specifications,” she says. The design the architects settled on was one that minimised the glass along the western and northern facades to reduce the heat gain inside the building. “We did our best to think cleverly about facade positions, shading devices and building orientation to allow for a thermally comfortable working space, while at the same time producing a beautiful building.”

DISTINCTIVE, MODERN DESIGN

The last of four to be constructed at the Holt Street precinct, the building presented a challenge to the contractor, Bantry Construction. “The fall of the site and the maximisation of the land also made the building construction difficult,” concedes Coter. The design team overcame this by engaging with the neighbouring tenants to redirect access to maximise the construction area.



The jacaranda tree forms an integral part of the front facade.

“We are proud of the distinctive, contemporary design and prime position on William Nicol Drive,” she says. “This building completes the mini-commercial precinct, responding to both the developers’ and tenants’ requirements and climatic conditions.”

Another feature of which she’s particularly proud is green – literally. “We were happy we could keep the jacaranda tree along Holt Street,” says Coter. “From the onset of the design process, special care was taken to retain the tree and it forms an integral part of the front facade. This added complexity to the build and all the teams took extra care to protect it during construction. We feel it complements and finishes the building, which was always our intention.”



Great care was taken to preserve the jacaranda tree in front of the Fujifilm SA building.



The building boasts an array of impressive green features.

ON RENEWABLE ENERGY IN AFRICA

Does the professional team believe their work will be emulated by others in the built environment? Definitely, says Molapo. “We are confident this building will motivate more stakeholders in the private sector to construct energy-efficient buildings and invest in renewable energy,” he says.

“Building a sustainable future for generations to come requires collaboration from individuals, communities, the private sector and the government to actively address the challenges of climate change, environmental degradation and resource depletion,” adds Molapo. “By achieving a Net-Zero Carbon Level 1 Modelled rating from GBCSA for this building, we feel that we are taking responsibility in actively contributing to advancing sustainability in the built environment.” Cotter concurs: “We are very proud to add Fujifilm SA’s headquarters in the Holt Precinct

to our list of green buildings. We feel this is the only way forward for all our buildings and look forward to implementing the lessons learnt at 18 Holt on our projects, going forward.”

The client is pleased with the way the building has turned out. “The new office at 18 Holt Street provides Fujifilm South Africa with the ability to not only have a centralised workspace, but also to showcase the different innovative products from our divisions in the Fujifilm Technology Centre Africa,” says Visser.

He also believes the timing of the new headquarters is significant, given that Fujifilm celebrated their 10-year anniversary of their operations in the country last year. Many dignitaries attended the ribbon-cutting ceremony in March, such as Japanese ambassador to South Africa, Shigeru Ushio. “We remain committed to South Africa and value our presence in the country,” says Visser. “We believe Fujifilm South Africa has a lot to contribute to the region.”

One of the firm’s key focus areas right now is to grow their medical diagnostic business on the continent. “We believe Fujifilm’s innovative technology in this area can address many of the challenges facing healthcare in Africa.” +



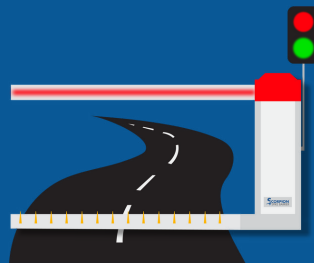
The ribbon-cutting ceremony in March was attended by Japanese dignitaries, including Japanese ambassador Shigeru Ushio (top left, second from right).

SUSTAINABILITY FEATURES OF FUJIFILM’S SA HEAD OFFICE

- Installation of rooftop solar panels with an annual production of 112 000kWh
- Glass specifications upgraded to double-glazing along the western and northern facades
- Energy-efficient lighting, along with motion sensors
- Water-wise plumbing
- Rainwater harvesting
- Water-wise planting
- A design that minimises the glass along the western and northern facades to reduce heat gain inside the building

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TORNADO TURNSTILES



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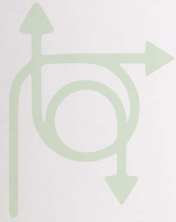
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SPACE AGE

**Maximising
efficiency through
shared spaces**



Considerations for setting up shared spaces for better efficiency over time, and better sustainability outcomes.

WORDS Georgie Chennells



A circular economy emphasises the need for the efficient use of resources, and while much attention has been given to the design and construction of buildings, an often overlooked aspect is utilising space more effectively. Pre-pandemic, global commercial real estate services company Jones Lang LaSalle (JLL) reported that an average of 40% of office space was underutilised.*

Today the amount of underutilised space is much greater in general, as evidenced in the ‘ghost towns’ we are seeing in many corporate offices. Here we explore various models and strategies to reduce office space while maintaining efficiency and supporting the needs of employees.

THE ROLE OF THE WORKPLACE

To be able to make decisions around office-space reduction, we need to understand the role that space plays in supporting an organisation’s employees, as well as the broader corporate ambitions of the company.

Businesses ultimately rely on people to deliver their commercial success, so the office must support these people in their work activities. It’s a strategic asset for a business. Considerations such as collaboration needs, technology setup and the importance of certain amenities to different teams should guide decisions about space reduction. The models below have the common theme of using shared space to achieve better efficiencies.



Flexible working is shown to improve productivity, engagement and wellness.

Adopting more flexible ways of working

A shift towards flexible working setups and remote work has significantly reduced the average occupancy in office spaces. By aligning the number of desks with lower occupancy rates, companies can use space more efficiently. This transition affects the entire workplace system, from physical space to operating processes and systems.

The switch from individual, personal desks to shared, more flexible desking arrangements requires a massive mindset shift for employees, and impacts on organisational culture and business outcomes. If it is to succeed, moving from “my desk” to “our space” requires purposeful engagement with those affected, and has to be managed sensitively.

More broadly, how we work is evolving along with advances in technology and platforms. Work styles like flexible working, activity-based working and smart working are just some of the ways of working associated with less office space, more flexibility and more employee choice.

Flexible working is shown to improve productivity, engagement, wellness and collaboration. However, these shifts must be purposefully managed to be truly adopted by employees, and their value realised.

Choosing access over ownership

For facilities that are infrequently used, such as boardrooms or specialised equipment, companies could consider leaning on neighbours or nearby suppliers to meet these needs. Many office parks and coworking spaces are now offering such facilities on demand for neighbours, members or tenants.

Similarly, it might also make sense to access, rather than own, amenity benefits for employees, such as gym or sports



Unsplash

Work doesn't just take place at a desk, and offices today need to supply a variety of spaces for employees if they are to attract them back.

“Buildings are currently responsible for 28% of global energy related operational carbon emissions (from energy needed to heat, cool and power them).”

– WorldGBC report: *Bringing Embodied Carbon Upfront*

*Source: JLL report: www.us.jll.com/en/transform-with-technology/build/utilization-intelligence

Unsplash



Large-spanning rooms with open floor plans can flex to suit different purposes over time. Furniture and fittings play a role here too.

facilities, or food courts. Considering lifestyles of the workplace occupants before setting up the operating model can yield a more attractive and convenient experience for employees, making it “worth the commute” in their minds.

Adopting a model of access over ownership can reduce space requirements as well as foster relationships with nearby local suppliers. This can support a sense of community and connection for those living, working or accessing the spaces in those areas.

Conversely, considering what hosted amenities could be made accessible to neighbouring businesses might also be an opportunity for optimisation. After-hours adult learning classes, community meetings and study space could all offer win-win scenarios through sharing.

Designing flexibility into the space

Setting up office floorplates to adapt to different purposes over time means less space is built, and what is commissioned is used more efficiently. Adaptability can be achieved through flexible wall systems for meeting rooms that allow them to change size, or versatile floorplates that are able to transform into alternative spaces such as exercise or exhibition areas. Simply furnishing a space with modular or multi-functional furniture can also support ongoing flexibility.

By designing flexibility into the space, the building can adapt to meet new needs over its lifetime and minimise resource-intensive remodelling.

REALISING THE OPPORTUNITIES OF PHYSICAL SPACE CHANGE

Those three strategies fit beautifully into the narrative of a more efficient, conscious, resilient organisation. In addition, the human outcomes from organisations that offer more flexible working options and more choice in work environments demonstrate fantastic benefits for health and wellbeing, as well as performance.

Critical to the success of the spatial models above is a purposeful process of engagement with both those who are part of setting up and operating the space, and those who are impacted by it. This transition is best approached holistically, ensuring that the entire workplace system of people and processes, and the physical place, evolve together. Some key areas to consider are:

- The shift must be aligned with corporate ambitions**
Reducing space, changing access models and applying levels of flexibility require upfront investment and buy-in from multi-stakeholder teams, both in the setup and operations of that space. Facilities Management,



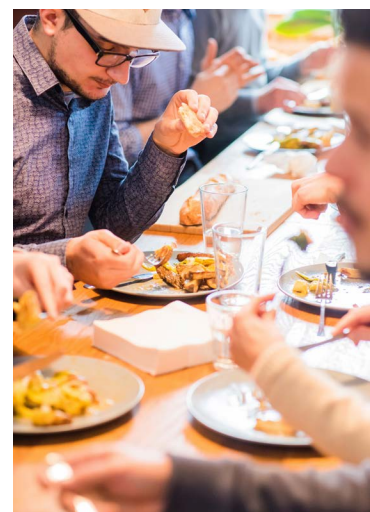
How we work is evolving along with advances in technology and platforms.

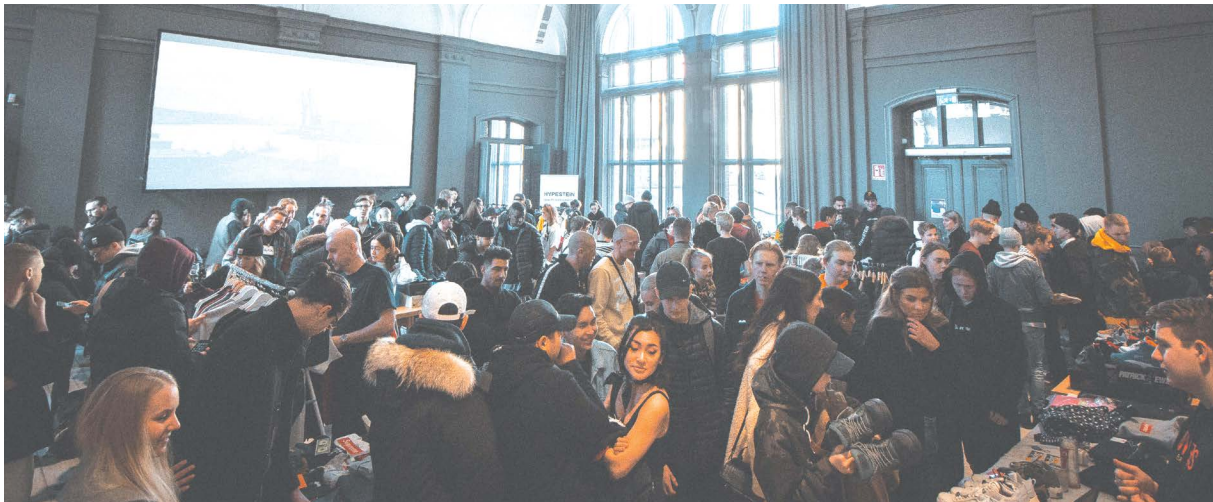
Unsplash



Offering access to healthy amenities like fresh food cafes is made by making use of shared facilities.

Pexels





Unsplash

HR, Technology and Ops, for example, will all be part of the conversation. These different role players will all contribute to the experience of the workplace and the enablement of the future workplace culture.

This requires different parts of the organisation to work together around one vision for the workplace, which must be spearheaded by leadership to ensure that all involved are aligned and equipped to do so.

🏡 Workplace insights can support understanding and scenario planning

Reducing space without proper investigation and testing could lead to a costly backlash where not just productivity, but also business trust and reputation are affected. Various types of data can be used to better understand space scenarios and their impacts before commencement. Testing is recommended.

Both organisational data (such as headcounts, organograms or employee surveys) and building data (for example, floor plans, programme of spaces or occupancy trends) should be thoroughly reviewed before a space is changed. Engaging leaders and employees in organisation-wide surveys and interviews, and focus groups, can also yield insights around key priorities and opportunities for optimisation.

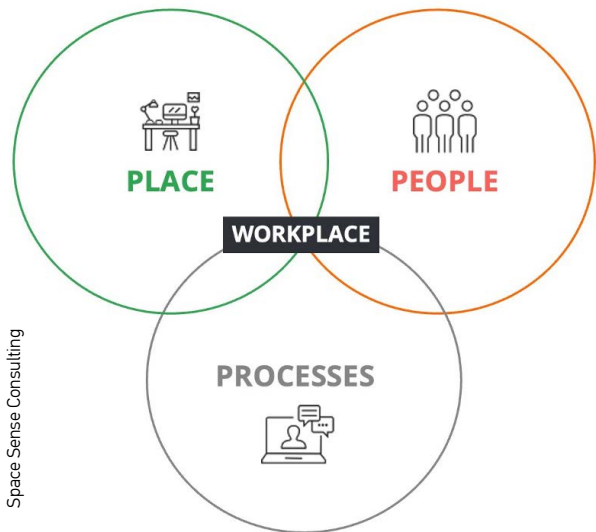
🔄 Co-created and change-managed

While the physical space can support behaviour change, for the space to be truly efficient and optimally utilised, its end-users must be empowered to do so. This means engaging them in a considered change-management process. The ideal outcome is that employees buy into and are committed to the change quickly. They are able to access the new environment and variety of spaces and operate from Day One with confidence – and they are excited about it!

Without considered change-management function, you could anticipate friction and fallout: heightened resistance, poor adoption, increased time and resources spent, and unplanned costs.

🏡 Treat it as journey of learning and growth

There's no one-size-fits-all when it comes to optimising space. Each organisation is different, and every spatial context is different. The best way to navigate something like this is with an open mind, a team spirit and a learning approach from all involved.



Space Sense Consulting

FOR THE GOOD OF ALL

The current workplace paradigm shift presents a fantastic opportunity for better spatial efficiency, with better outcomes for organisations, occupants and the planet. This is an opportunity to reimagine what our workplaces could be, and how they could integrate with, and support, more sustainable communities.

But to truly realise the benefits, space-change projects must be purposefully managed around clear objectives and incorporate active involvement from leadership, project teams and end-users. +

SPACE SENSE

Workspace consultant at Space Sense Consulting, Georgie Chennells has been helping clients realise strategic and design projects for 15+ years, both in the UK and South Africa. While she specialises in workplace strategy and transformation, her background includes architecture, corporate communications and marketing. She believes that the workplace is a living system, in constant evolution, and can be a powerful force in the life of an organisation.



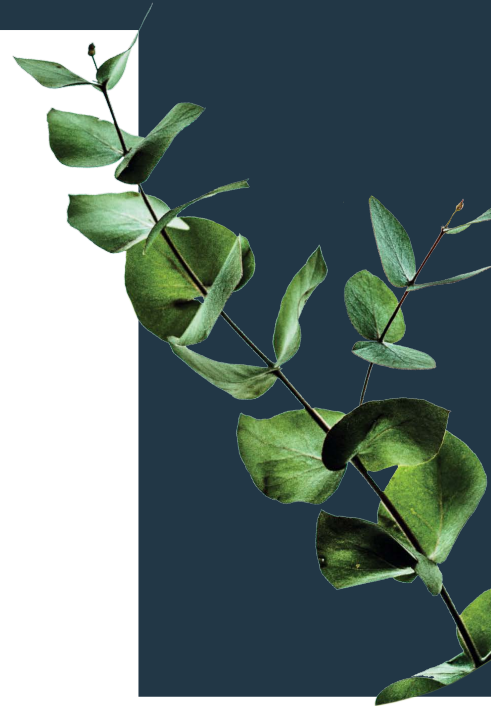


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