



CITY OF CAPE TOWN
ISIXEKO SASEKAPA
STAD KAAPSTAD



BUILDING RESILIENCE TO URBAN CHALLENGES

MAYOR'S PORTFOLIO
OF URBAN SUSTAINABILITY

2018

Making progress possible. Together.

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Foreword

Cape Town faces the challenges of a fast-growing population. Every person should have access to opportunity, progress, social equality, dignity and respect; but against a backdrop of limited and dwindling natural resources, these aspirations need to be met in a manner which does not deplete Cape Town's natural capital.

Many of the City of Cape Town's ongoing projects are tackling these challenges in highly creative and innovative ways.

The Mayor's Portfolio of Urban Sustainability has selected 32 of these projects for assessment in terms of their sustainability in a delicate urban ecosystem – their ability to meet the social and economic needs of Capetonians without compromising the natural system on which they rely.

Supporting, analysing and sharing these projects also serves to change thinking, and to encourage all City project managers to incorporate sustainability parameters into their planning and implementation.

This showcase exhibits some of the best practice achieved, and highlights areas that need improvement for long-term sustainability.

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A message from the Executive Mayor

Urban sustainability requires a new approach

As our city grows, and growing it most definitely is, we need to be mindful of the impact this growth has on our surroundings, our environment, and our enjoyment of the spaces that we use.

Ensuring our urban growth is done responsibly, and in a sustainable manner, requires us to challenge the ways in which we think about urban issues and the ways in which people and institutions behave.

Where we change our thinking, how do we build these changes into habits, procedures, norms and routines? As the City of Cape Town is an inclusive city, and an opportunity city, we need to engage urban institutions, civic organisations and citizens in new ways of understanding and relating to the city about the roles that we all play.

Cape Town's environmental and socio-economic challenges are characteristic of cities in many developing countries. Project managers will need to acknowledge and understand the complex interactions between factors, rather than reducing them to simple linear analysis, to most effectively develop sustainable solutions.

Considering the major success we have had over the past year in averting one of the worst droughts to ever affect the City of Cape Town, this edition of the Mayor's Portfolio of Urban Sustainability features four projects that contribute to enhancing water resilience in the city, demonstrating the type of thinking that should be applied across sectors to ensure the sustainable management of our rich, but limited, natural resources.

The water crisis we recently faced as a city, has also contributed to resilience becoming a continued conversation over the past two years, confirming the need for us to adapt systems and structures that ensure that Cape Town and Capetonians are able to withstand and recover from economic, social and environmental shocks and stresses.

As part of the 100 Resilient Cities programme, the City is working towards implementing its own Resilience Strategy, which will guide the mainstreaming of resilience thinking. I am looking forward to seeing the results of implementing this strategy.

According to UN-Habitat, the key ingredient to realising an inclusive and sustainable city is 'neither money nor technology, nor even expertise, but good urban governance'. Good urban governance involves local governments using inclusive, transparent and participatory approaches to communicate with citizens, keeping them well informed and actively involving them in local decision-making processes. The City of Cape Town embraces these principles. Our inclusive approach places more demands on local government to demonstrate our innovation, and the projects featured in the Mayor's Portfolio demonstrate just how project teams are responding to this need for innovation.

Dan Plato
Executive Mayor



A message from the City Manager

Adoption of the Environmental Strategy

Cape Town's natural environment is a collective asset belonging to all of us. Our natural environment must remain accessible and deliver benefits to both current and future generations. However, many socio-economic challenges stemming from the city's historical and existing inequalities hinder the ability for all citizens to gain access to the benefits of the natural environment.

In 2017, the City adopted the Environmental Strategy to guide sustainable responses to urban challenges facing Cape Town. This strategy complements the Social Development Strategy and Economic Growth Strategy to form part of the overall sustainability model embedded in the Integrated Development Plan (IDP). The Mayor's Portfolio of Urban Sustainability is an important tool for the implementation of the Environmental Strategy.

Institutionalising urban sustainability

The Environmental Strategy is a framework for the mechanisms and regulations required to achieve the City's desired sustainability outcomes. The challenges that arise as a result of the interdependencies that exist between the economy, society and the environment demand integrative approaches. For example, climate change, one of four cross-cutting themes underpinning the Environmental Strategy, has implications for all sectors and can only be adequately addressed in an integrated manner. Since urban challenges do not recognise

the walls of departmental silos, the need for a transversal approach is growing in the city. To this end, transversal working groups have been established to better streamline this type of work across City line functions. As such, the value of tools such as the Mayor's Portfolio, which emphasises the need for dialogue across departments around an urban sustainability agenda, cannot be overstated.

In addition to providing a glimpse of sustainability thinking in the City, the Mayor's Portfolio offers project managers a unique platform for idea generation and sharing. The programme demonstrates that lessons can be learnt from projects of varying scales. These lessons are currently being assimilated into easy-to-access best practice guidelines, which will inform project design, implementation and operation. Similarly, cross-cutting programmes like the Mayor's Portfolio ensure the continuity of mainstreaming sustainability.

Lastly, the Mayor's Portfolio challenges project managers to assume their place as custodians of the environment and take joint responsibility for managing and protecting it. This is an ongoing dialogue, and I welcome the contribution of other sectors of society, including academia, civil society and the private sector, to this conversation.

Lungelo Mbadazayo
City Manager

Introduction: Operationalising concepts of sustainability

Cities account for between 60 and 80% of the world’s energy consumption and generate as much as 70% of all greenhouse gas emissions. It is no wonder that a few decades ago cities were perceived as sustainability problems rather than solutions¹.

However, while the influence of cities in driving global environmental challenges is recognised, cities like Cape Town have enormous potential to promote and establish sustainability solutions, to develop on-the-ground interventions, and to shape urban responses to sustainability challenges to the benefit of communities, and ultimately the planet.

The City of Cape Town recognises that in pursuing sustainability, an embedded approach should be adopted. This approach recognises that the economy is a system which is embedded within society, which in turn is inseparable from the natural environment² and its provisioning, regulating, supporting, and cultural ecosystem services. In this approach, sustainability is effectively a lens to be applied to governance, planning, design, decision-making, and implementation at all times, rather than an end-state to be achieved. The City’s recently adopted Environmental Strategy adopts the following definition:

Sustainability is a dynamic process in which all stakeholders are enabled to meet their economic, social, cultural and resource needs, and improve their quality of life, while simultaneously protecting, enhancing and managing the natural environment, and

optimising the economic benefits of ecosystems goods and services. This must occur within the framework of good governance and considered decision-making that ensures that these assets, their current functions and future potential are not undermined, and that a burden is not left for future generations.

The Environmental Strategy stresses that the environment is a shared and common asset that is the joint responsibility of all line functions to manage and protect. How departments contribute and participate in the management and protection of the environment can take on various forms.

The Mayor’s Portfolio of Urban Sustainability serves as one vehicle for the implementation of the Environmental Strategy. Firstly, the Portfolio provides a platform to showcase how the City is mainstreaming sustainability thinking into the design, implementation and maintenance of its projects. Although only a small sample of projects is selected for each edition, these provide learning and knowledge-sharing opportunities, and promote urban sustainability across the City’s line functions.

Secondly, the Mayor’s Portfolio provides a mechanism for operationalising the principles and directives in the Environmental Strategy into actions towards urban sustainability. The projects profiled in each edition of the Mayor’s Portfolio form a collection of inspirational and motivational case studies, and contribute towards a sustainability knowledge hub for project managers. Holistically, the Mayor’s Portfolio series provides a guide towards urban

sustainability and promotes sustainability thinking within the City.

True to its purpose, the third edition of the Mayor’s Portfolio features projects from a range of line functions. This snapshot gives an idea of where and how the City is working towards a sustainable future. The projects contained in this edition are testament to the efforts being made at a project level to build a more sustainable city for current and future generations.

In addition to the Vision category which was added in the 2016 edition of the Mayor’s Portfolio, this edition features green bond and game changer projects and highlights projects that contribute to water resilience. Though these projects are at varying scales, the Mayor’s Portfolio emphasises the importance and impact of sustainability thinking through each project.

Additionally, the Review Panel engagements for this edition led to challenging “accepted norms” relating to urban sustainability. This discourse provided opportunities for fresh thinking and invited deepened perspectives of urban sustainability. As a result, the 2018 edition of the Mayor’s Portfolio includes, for the first time, a guest column (pg. 101) to provide for creative, unfettered thinking around understandings of urban sustainability. Our first columnist is Peter Willis, a Senior Associate of the Cambridge Institute for Sustainability Leadership and conversation strategist, who has been a part of the Mayor’s Portfolio Review Panel since 2015. ●

1 UN World Cities Report, 2016
2 City of Cape Town Environmental Strategy, 2017

The women at work programme (pg. 80) addresses gender discrimination by improving working conditions for females in an otherwise male-dominant sector.





Overview

Key elements of the portfolio

Strategic support

To effectively embed sustainability best practice within the City, this portfolio has benefited substantially from the support and guidance of the Strategic Policy Unit, the advisory forum and the review panel of sustainability practitioners. The input provided has facilitated and encouraged the incorporation of aspects of sustainability in City projects and stimulated the ongoing sustainability dialogue in the City.

The strategic support for this programme ensures that sustainability objectives are upheld in decision-making and moves the City towards a stronger foundation of environmental sustainability, serving as an incentive to other institutions and organisations to adopt a similar focus.

Advisory forum

The advisory forum, which consisted of directorate representatives, was established to provide high-level strategic input to the Mayor’s Portfolio.

The forum provided insight into projects to be profiled, and advised on mechanisms to ensure the most favourable outcomes and the fulfilment of longer-term objectives.

Review panel

The review panel of persons external to the City of Cape Town is comprised of eminent representatives from the Western Cape Provincial Government, the academic sector, private sector professionals, and civil society leaders.



The Customer Feedback project (pg. 68) aids responsiveness to public needs and helps the City identify areas where customer service can be improved proactively.

They were invited to join the panel because of their knowledge, interest and work in broad areas of urban sustainability.

This review panel played an important role in process review as well as moderating the assessment of the projects included in the Mayor’s Portfolio. The process includes group review sessions of the project methodology, individual study and analysis of initial project assessments, determination of final assessment, and provision of feedback to project managers.

Assessment algorithm

The advisory forum and review panel identified and reviewed 12 sustainability objectives or criteria (see pg. 110) to ensure that each of the sustainability objectives would remain constant in order to monitor change.

The following guidelines directed the selection of sustainability objectives/ criteria:

- 1. Relates to the achievement of sustainable development.
- 2. Easy to understand, regardless of field or specialisation.
- 3. Easily attainable data.
- 4. Accommodates the varying time and spatial scales and project contexts.

Each objective/criterion was interpreted by one or more sub-criteria or guidelines and was loosely defined to allow for creativity and flexibility in determining how an individual project fulfilled each one.

The assessment scale relied more on descriptions than absolute numbers to avoid a potentially misleading quantitative analysis of project data. Thus interpretive criteria and guidelines were incorporated.

Assessment process

To simplify outcomes, the qualitative scale was linked to a quantitative one. ‘Poor’ was graded ‘1’ and ‘excellent’ a ‘5’. The scoring against each of the 12 axes was then represented on a spider diagram as shown on pg. 110.

Once the assessment framework was finalised, each directorate was given the opportunity to identify projects that met the following criteria:

- 1. Project implementation should be underway or recently completed. New and active phases of older projects are also encouraged.
- 2. Projects should address socio-economic and environmental issues in an integrated manner and within a framework of good governance, so encompassing the principles of sustainability.
- 3. Projects should be making a positive change in their sector, while crossing sector boundaries and working transversally.
- 4. Projects should be innovative or original in their approach.
- 5. Projects should demonstrate collaboration and partnership building.



Access to safe, affordable electricity provides an enabling environment for people to learn, work and develop livelihoods while they are at home.

- 6. Projects should definitively contribute to the implementation of the City of Cape Town’s Economic Growth Strategy, Social Development Strategy (SDS) and Environmental Strategy.
- 7. Projects should empower the communities in which they operate or the greater Cape Town community, for example with skills, employment, connections and networks, or knowledge transfer. This also applies to empowering City staff with improved thinking, operational strategies and modes of work.

- 8. Projects should encourage replication through ease of process, creative or cost effective use of material, and strategies that position the project as a true example of practical ways to achieve sustainability.

Interviews with project managers facilitated the collation of information on how the project met assessment objectives. This was then translated into an assessment table, diagram and a project profile, which summarised the challenges being addressed by the project and outlined some of its key aspects.

Project managers were then invited to review their respective profiles and initial assessments, and were afforded the opportunity to affect concrete interventions to strengthen aspects of their project and enhance its sustainable practices, prior to a final assessment.

After the final project profiles and initial assessments had been completed and internally reviewed, they were presented to the review panel for their verification and formal assessment. ●



Strategic links

Integrated Development Plan

The portfolio links to the strategic focus areas (SFAs) of the City's IDP (see also pg. 105), which are as follows:

Opportunity city: This recognises the need to build an economically enabling city by ensuring that people have decent jobs. The need to conserve biodiversity in Cape Town for enjoyment by present and future generations is also recognised as a key element of making it a city of opportunity for everyone.

Safe city: Safety is essential to the public's experience of the city. Sustainable development builds resilience and ensures that the city and its residents are protected from anticipated and unanticipated changes from both natural and human-induced sources. It is therefore key to building a safe and resilient city.

Caring city: The primary purpose is to look after the health and well-being of citizens and visitors. Projects that meet sustainability criteria will contribute to a healthier urban landscape.

Inclusive city: Residents should have access to the resources they need. This recognises present and future generations' rights and requires an approach that does the same.

Well-run city: Institutional arrangements need to favour democratic and transparent processes. Best practice in sustainability contributes to improved governance through efficient, effective and appropriate processes.

City strategies

Three City strategies are pivotal to development:

1. Environmental Strategy;
2. Economic Growth Strategy; and
3. Social Development Strategy.

These strategies reflect the three dimensions of sustainability on which this portfolio is based: environmental, social and economic.

Environmental Strategy

The Mayor's Portfolio aligns with and profiles projects which support the principles and directives of the Environmental Strategy. These include:

- adopting a long-term approach in decision-making, operating and planning for the future;
- promoting and enhancing equity and accessibility to ecosystem goods and services, natural open spaces, and the social, educational, spiritual, and recreational opportunities these provide;
- recognising, protecting, and promoting the social, cultural, and economic value of the natural environment to communities, businesses and individuals;
- focusing on resilience, enabling the city to withstand and mitigate the negative impacts of environmental hazards, and proactively reducing Cape Town's vulnerability;

- recognising, protecting and, where possible, proactively restoring ecological infrastructure and ecosystem goods and services;
- proactively preventing adverse environmental impacts, including pollution and the generation of waste, and where this is not possible, minimising and managing those impacts;
- ensuring that resource efficiency and low-carbon development are embedded in all aspects of its work;
- adopting the methodology of environmentally sensitive and low impact urban design and ensuring the long-term functionality of key ecological infrastructure;
- prioritising and promoting the education and empowerment of all citizens;
- ensuring that the value of both natural and cultural heritage is recognised, protected and promoted, and that the benefits and opportunities it provides to communities are realised.

Project managers were challenged to think broadly about their projects and to consider the role these played in promoting best practice in sustainability.

These considerations included references to the above principles, giving attention to the approaches embedded in the design and implementation of projects.



Economic Growth Strategy

The principal objectives of the EGS are to grow the economy and create jobs, establishing Cape Town as an 'opportunity city'. The strategy presents the City's response to the most fundamental challenges facing Cape Town: too many people are poor and unemployed and, unless we shift gears and prioritise economic growth, this is unlikely to change.

While recognising the pressing need for rapid and inclusive economic growth, the EGS observes that "to build an opportunity city, economic growth ought to be environmentally sustainable in the

long term". The City has identified the green economy as a key growth area, both in terms of 'eco-tourism' and facilitating the development of green industries and sectors, particularly those with significant job creation potential.

Objective 3.4 of the EGS promotes the protection of environmental assets, expansion of eco-tourism in a sustainable manner as well as the establishment of green industries. It further encourages the profiling of the City as a tourist destination and a global sustainability leader.

These strategic elements support this portfolio's emphasis on sustainable future growth. Projects that showcase urban sustainability arose from integrated planning, where design teams sought to create opportunities for investment and job creation.

Social Development Strategy

The SDS orientates the work of the City towards improved quality of life for all Capetonians, especially those who are marginalised. At its core, the SDS focuses on addressing poverty, inequality and social ills while simultaneously promoting active citizenship and the participation of people in their own development.

- The SDS approach to the City's work is based on five principles:
- using the available resources and assets to promote social development;
 - focusing on impacting the lives of the poor, vulnerable or marginalised;
 - facilitating partnerships for maximum impact;
 - assessing the projects' level of sustainability; and
 - directing interventions at the areas of greatest need.

The SDS asks decision-makers at all levels of the organisation to consider what they do and how they do it. This helps build a safer, more caring, and inclusive city where all people are able to realise their potential.

The SDS approach differs from previous approaches, which viewed social development as the domain of a specific directorate concerned with relatively small, discrete projects. The SDS considers all of the City's work as geared towards improving the well-being of all people in Cape Town, which is reflected in this portfolio's integrated approach to sustainable project assessment. To effectively achieve this, communities need to be given the opportunity to participate in their own development, and a transversal approach to social development needs to be adopted. ●



The Water Demand Management and water restrictions project (pg. 58) demonstrates how the City helped Capetonians move towards a more water-efficient and water-conscious future.



Projects at a glance

In total, 32 projects are profiled in this edition of the Mayor's Portfolio of Urban Sustainability. They are managed and supported by various directorates, and demonstrate best practice in sustainability. For each of the 12 assessment objectives, every project was scored on a scale of 1 ('poor') to 5 ('excellent'). Projects scoring above 37 were awarded a silver star rating, while those above 40 received a gold star rating*. The gold star rating is awarded to projects that consistently performed well across all categories and are identified as examples of best practice in sustainability.

*The thresholds for silver and gold ratings differ between editions due to changes in the respective assessment processes.

Portfolio projects

The projects featured in the Mayor’s Portfolio are presented with a description of the project’s objective, design, and implementation, as well as an evaluation of the project’s contribution to sustainability mainstreaming in the city. Although most of the projects profiled relate to more than one dimension or category of sustainability, they are categorised into one of four headings depending on what is judged to be the strongest element within each project:

- Vision
- Social
- Economic
- Ecological

The categories presented in the Portfolio are intended to showcase how projects, that would otherwise be limited to addressing social, economic, or ecological problems in isolation, can be planned, designed, and developed to positively influence a range of elements of sustainability. For example, rather than using conventional building materials and technologies to construct the Delft Early Childhood Development (ECD) Centre, the project team opted for alternative building materials. In addition to a focus on reducing the ecological footprint of the Centre, the project also involved significant community upliftment, employment of local labour, and transfer of skills in alternative building methods.

This edition of the Mayor’s portfolio introduces three markers, namely:

Water resilience

Green bond

Game changer

Most profoundly, water resilience projects are those that contribute towards building a water sensitive Cape Town and promoting sustainable urban water management. These projects are in response to the growing realisation of the significance of climate change and the increasing need to ensure resilience to future uncertainties in urban water supplies.

Game changer projects are those that have the potential to trigger massive sectoral changes locally as well as nationally. Although the assessments of these projects do not currently capture the long-term impact of these projects at this stage, it is important to note that these are key projects that are still in the early phase but will likely have high impact in the foreseeable future.

In 2017, the City issued South Africa’s first Climate Bonds Initiative accredited green bond. This green bond was also awarded a GB1 rating by international ratings agency Moody’s. The green bond will finance Cape Town’s long-term strategy of mitigating and adapting to climate change through investments in water, sanitation and coastal projects. Some of the specific projects to be financed by the City’s green bond include the treatment of effluent to transform it into potable water and water management initiatives.

The Mayor’s Portfolio is an ongoing programme that promotes increasingly sustainable practices. As a result, projects that showcase new aspects or improved processes can be featured more than once. In this edition for instance, the Company’s Garden, featured in the first and second editions of the Mayor’s Portfolio, is featured again for demonstrating continued development and consistent efforts in new areas toward sustainability in an ever-changing urban environment.

Since the Mayor’s Portfolio is a programme focused on projects coordinated by a local authority, there is often a discrepancy between innovative and mandatory projects. Not all the projects featured in the Mayor’s Portfolio are new or novel, but regardless of whether they are mandatory or ground-breaking, each one demonstrates unconventional thinking needed to build a more sustainable urban environment. ●

Investing in environmental health interventions and preventative medicines (pg. 48) provides children with the necessary information which could lead to them changing their own behaviour and improving their own health.



Vision portfolio		
Project	Description	Evaluation summary
1. MyCiTi Integrated Rapid Transit network: Phase 2	Providing access to a seamless public transport network for residents in the metro-southeast.	Addresses major social challenges inflicted by apartheid spatial planning policies by providing a direct, efficient and scheduled public transport service.
2. Princess Vlei Conceptual Development Framework	Collaboratively formulating a vision and establishing principles to guide development at Princess Vlei.	Comprehensive engagement process that brought together a variety of stakeholders to establish a common long-term vision.
Social portfolio		
Project	Description	Evaluation summary
3. Appointment systems learning initiative	A bottom-up approach to developing clinic appointment systems.	Improves productivity and efficiency by encouraging knowledge-sharing and the development of context-specific solutions.
4. Greenville Garden City: Phase 1 ★	Mobilising a public-private partnership to build an integrated human settlement.	Mitigates the challenges resulting from increased urbanisation through partnerships and innovative building technology.
5. Health Service design	Using design thinking methodology to re-engineer clinic systems and processes.	Identifies new ways to listen, communicate and solve challenges by equipping staff to improve productivity and efficiency in their respective facilities.
6. Healthy Living Lifestyles programme	Promoting health and exercise by offering communities different activities that improve quality of life, health and skills, and empower leadership to ensure long-term sustainability.	Provides sustainable and accessible activities that encourage an active and healthy lifestyle in communities.
7. Mfuleni urban node and urban park ★	Giving purpose to underutilised City-owned land to integrate community facilities and create functional spaces where people can access childcare, recreation, healthcare and transportation.	Demonstrates the judicious and targeted use of limited public resources within local areas in need of renewal.
8. Municipal electrification programme	Providing electricity connections to communities in underserviced areas.	Improves socio-economic conditions by creating an enabling environment for households to develop their livelihoods.

Social portfolio (continued)		
Project	Description	Evaluation summary
9. Phola Park stormwater upgrade 🌧️	Transforming a degraded stormwater channel into a safe public open space.	Demonstrates a transversal approach to addressing a range of socio-economic issues.
10. Schools deworming programme	Education programme designed to help Grade R and Grade 1 learners better understand the link between the environment and their health.	Successfully supports children, a vulnerable group, by tackling a wide range of diseases as well as how to care for the environment by not littering and avoiding contaminated spaces.
11. Smart parks: Phase 2	Development of high quality community-designed and resource efficient recreational spaces.	Demonstrates improved and better adapted parks to suit community needs as a result of continued learning and reflection.
12. Sweet Home Farm upgrading informal settlements programme	People-centred approach to delivering sustainable, high-quality engineering services.	Thorough engagement sessions to facilitate effective interaction between the public, local government and decision-makers.
13. Thermal ceiling retrofit programme	Improving the living conditions of beneficiaries who have been living in subsidised houses that were built prior to 2005 with no fitted ceilings.	Creating decent living spaces by correcting the shortcomings in previous housing designs.
14. Upgrading intersections for non-motorised transport	Making the environment for non-motorised transport (NMT) mobility more pleasant, accessible and safe.	Cost-effective approach to improving safety without reducing road capacity or drastically slowing traffic down.
15. Water Demand Management and water restrictions ★💧	Using water restrictions and an education programme to improve water efficiency and encourage consumer behaviour change.	Engaging with a variety of stakeholders to encourage citizens to adjust their water demand in an informed and intentional manner.

Economic portfolio		
Project	Description	Evaluation summary
16. Atlantis Investment Incentives Scheme	Attracting local and foreign investments to promote economic development in Atlantis by addressing market failures.	A suite of incentives designed to create an enabling environment for the private sector to grow the economy and improve the quality of life for local citizens in a sustainable manner.
17. Biodiversity management skills development	A programme providing an ongoing opportunity for training and skills development for a career in biodiversity management and conservation.	Significantly contributes to conservation capacity on nature reserves thereby promoting and enhancing ecological integrity.
18. Business Query Tracking System	A platform established to coherently track and analyse all business service requests, transactions and queries.	Provides support to entrepreneurs and excellently improves the City's efficiency and responsiveness.
19. Customer feedback project	End-of-call survey software used to obtain immediate feedback from customers contacting the City.	Customer feedback provides the organisation with insights that it can use to ensure quality assurance and serves as an early warning system for service delivery challenges.
20. Energy efficiency in municipal operations	Ongoing retrofit of buildings, traffic lights, street lights, buildings and wastewater treatment plants.	Enhancing resource efficiency by driving down energy consumption in City operations.
21. Improved water metering  	Multipronged project aimed at improving the accuracy and completeness of water consumption records, as well as incentivising and controlling water consumption in the city.	The installation of water management devices to protect the City's revenue, respective households from further debt accumulation and to aid water conservation at households with inexplicably high water consumption levels.
22. Invest Cape Town	Collaborative initiative to develop a strong identity for Cape Town as a forward-looking, globally competitive business location.	Promoting collaboration with the business community and forming partnerships in order to develop a business community identity.
23. Treated effluent re-use  	Formalising the use of alternative water sources for non-drinking needs such as irrigating landscaping and flushing toilets.	The use of treated effluent enhances resource efficiency very well by reducing water demand and promoting the re-use of water.
24. Western Cape Industrial Symbiosis Programme  	Service that connects companies so that the underutilised or discarded resources of one company can be used by another.	Contributes to diverting waste from landfills by finding ways in which waste can become valuable and used as an input in other processes.
25. Women at Work programme	Creating an environment for women to enjoy economic inclusion by supporting skills development initiatives in high growth sectors.	Increasing the employability of women with minimum education and skills the opportunity to improve their education and training.

Ecological portfolio		
Project	Description	Evaluation summary
26. Construction of the Delft Early Childhood Development Centre 	Considered design exemplifying unconventional building methods for the construction of a public building.	Addresses major environmental challenges and promotes resource efficiency by adopting a more sustainable approach to construction.
27. Dassenberg Coastal Catchment Partnership 	Partnership initiative to protect critical ecological infrastructure, unlock socio-economic opportunities, promote climate change adaptation and mitigation, and promote the natural and cultural heritage of the area.	Facilitating development within the urban edge while promoting conservation by securing high-quality critical biodiversity areas outside the urban edge.
28. Energy Efficiency Forum (now Energy, Water and Waste Forum)	Equipping commercial sector with practical knowledge and support to promote energy-efficiency action and investments.	Facilitates engagement and builds consensus with the business community to make energy-efficiency knowledge and support accessible.
29. Muizenberg to Clovelly Main Road upgrade 	Rehabilitation project comprising of a new road surface, a retaining wall above Clovelly Railway station and replacement of underground services.	Reconstructing the road and replacing aged infrastructure to ensure the safety of road users and access to basic services for residents.
30. Restoration of the Old Granary building	Leveraging an existing, disused asset to benefit the public by restoring the building externally, while sensitively restoring the interior space.	Demonstrates a sensitive approach to refurbishing a public asset and contributes to addressing harmful effects of environmental degradation on heritage resources.
31. Small-scale embedded generation programme 	Promoting the uptake of rooftop photovoltaic (PV) systems and small wind turbines in the commercial and residential sectors.	Allowing electricity customers to connect to the City's electricity grid demonstrates the City's proactive yet conservative approach to energy security.
32. Using non-potable water in the Company's Garden 	Reconnecting the Garden's irrigation system to spring water in order to preserve the Garden as a recreational space for residents and tourists.	Improving resilience to future droughts through use of an alternative water resource and ensuring the conservation of a cultural landscape.

Portfolio project sections

Vision portfolio

This recognises the importance of projects which have achieved substantial outcomes through innovative and visionary planning.

It also includes participatory initiatives and outreach programmes aimed at promoting sustainability, including behaviour changes and the application of innovative design-led processes, leading to a paradigm shift in service delivery around urban sustainability projects.

While the projects featured in the visionary section of the portfolio may lead to future “on-the-ground” developments, this is not a prerequisite for inclusion.

The projects focus on each of the pillars of sustainability variably, but are all characterised by:

- exemplary foresight;
- inclusive and thorough planning and design; and
- commitment to sustainability principles.

They represent important aspects of urban sustainability, but, because they currently lack tangible “on-the-ground” outcomes, they are not accompanied by a formal sustainability assessment.

Social portfolio

The projects in this section are driven by a strong social component. Most of them have significantly involved communities in the development of processes and structures. Although the pillars of sustainability are interconnected, the projects in this category were originally motivated by the need to address a social problem that arose from within the community or came from the everyday dynamics within communities in the city.

Economic portfolio

Given South Africa’s high unemployment rate, significant inequality, and globally competitive markets, projects of an economic nature are designed and implemented to stimulate economic activity and generate economic growth.

The projects are aligned with the need to create sustainable employment opportunities and facilitate the alleviation of poverty. As a result, these projects perform strongly in the economic field of the assessment, and are also driven by the need to ensure optimal use of existing resources in a responsible and balanced manner.

Ecological portfolio

These projects are directly linked to the capacity of the biosphere to meet the needs of current and future generations. By using and enhancing natural resources responsibly in the short term, the projects ensure these are available in the long term. These projects are primarily focused on empowering people and organisations to carry out their activities and obligations in an ecologically sustainable manner. ●

Smart parks (pg. 50) provide our most underserved communities with safe, high-quality park facilities and play equipment that gives children the opportunity to develop physically and cognitively.





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Project 1: MyCiTi Integrated Rapid Transit network: Phase 2



Problem statement

Cape Town, like other South African cities, is characterised by a low-density spatial form, which promotes racially divided living areas with the poor living furthest from city centres. Furthermore, apartheid’s road systems, which persist today, favoured use by private vehicles. Capetonians have to endure long travel distances, high peak period travel demands and limited inter-peak travel demand, which all contribute to an unsustainable transport system.

Public transport has a vital role to play in reducing transport emissions and traffic congestion in the city, as well as improving accessibility to jobs and education opportunities. This is particularly important for disadvantaged communities who are heavily reliant on public transport for both their social and economic livelihood.

Project outline

MyCiTi is a bus rapid transit (BRT) service, with feeders, which forms part of the City’s Integrated Rapid Transit (IRT) network. Phase 2 of the MyCiTi service comprises the roll-out of two corridors in the metro-southeast, namely the T11 MyCiTi corridor connecting Wynberg and Khayelitsha and the T12 MyCiTi corridor connecting Mitchells Plain and Claremont.

These corridors will provide dedicated roadway and stations to facilitate rapid public transport, linking feeder routes to trunk routes and extending the coverage, as well as linking different modes of

transport in the area to provide access to a seamless public transport network.

Project design

All of the City’s public transport plans are founded on the Transit-Oriented Development Strategic Framework (2016), which prescribes how new and existing public infrastructure should be utilised to address the legacy of apartheid spatial planning.

Household traveller and transport demand modelling were used to determine the potential of various routes. Furthermore, to determine which routes to prioritise, the following was considered:

- the number of residents who would benefit from the service;
- the amount of time passengers would save by travelling on a dedicated BRT route;
- the percentage of low-income households the routes would serve; and
- integration opportunities along a route where commuters have easy access to other modes of transport, such as rail.

Based on the above-mentioned factors, the Khayelitsha/Mitchells Plain to Wynberg/ Claremont routes showed exceptionally high results and confirmed the urgent need for a MyCiTi service.

Project implementation

The conceptual design process of a new BRT route involves the examination of spatial feasibility. As a result, the conceptual design for Phase 2 underwent multiple review iterations that informed changes and better alignment with physical opportunities and constraints. Due to environmental, heritage and land acquisition constraints, the work components of the project are at different stages.

The first round of public participation was facilitated to comprehensively address stakeholder concerns. Plans for Phase 2 have also been presented to subcouncil twice, and about 30 roadshows were taken to communities. Public

participation will continue to be weaved into future phases of the project.

Phase 2 will make use of low-floor buses that will make the BRT service universally accessible and afford handicapped people dignified public transport for travel. Low-floor buses also enable buses to stop at all stops, thus stations are not needed. This modification contributes to financial savings as it costs about R1 million per year to maintain stations.

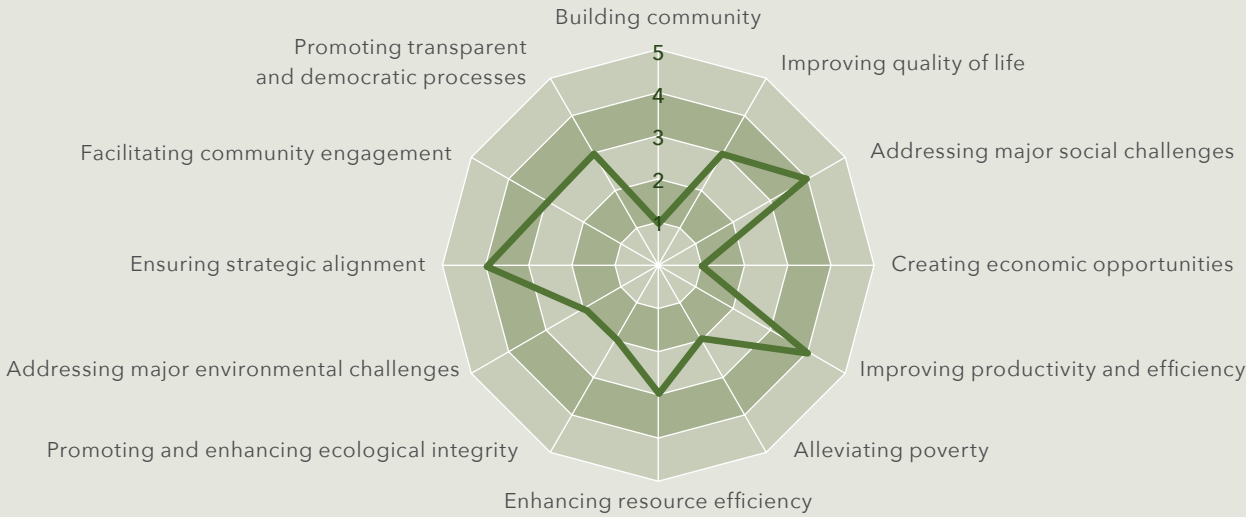
Evaluation

Once fully rolled out, Phase 2 of the MyCiTi service will benefit approximately 1,4 million Capetonians. The BRT routes will provide residents in the metro-southeast with a direct, efficient and scheduled public transport service,

which will effectively contribute to addressing major social challenges inflicted by apartheid spatial planning policies. This service will also incentivise economic opportunities, new developments and urban renewal across 35 communities along the way.

The roll-out of these trunk routes will accelerate the City’s efforts to create a more equal society based on integrated communities, economic inclusion and access to opportunities – the main pillars of the City’s Organisational Development and Transformation Plan (ODTP). This demonstrates strategic alignment with key City strategies. ●

Sustainability assessment: MyCiTi Integrated Rapid Transit network: Phase 2



Project 2: Princess Vlei Conceptual Development Framework



Problem statement

Princess Vlei is the gateway to the wetland system that runs through Grassy Park, purifying the water before it runs into the sea. During the apartheid years, Princess Vlei became one of the few natural, open space areas that coloured people could visit, after they were forcibly removed to various housing estates on the Cape Flats.

While it is treasured by the many citizens, the vlei has been neglected over the years. In order to retain and enhance this natural and recreational resource, a clear, holistic vision, taking into account the land use in the broader area is essential.

Project outline

The City partnered with the Princess Vlei Forum and other community-based stakeholder groups to develop a

Conceptual Development Framework (CDF) for the greater Princess Vlei area.

The collaboratively formulated vision for Princess Vlei and environs is an inclusive, people-oriented, multi-use space, characterised by natural environmental and heritage value, diverse opportunities and extensive public activity and enjoyment. Underpinning this is the pursuit of a place that functions as a whole for the citizens it serves.

Project design

The CDF was informed by input from comprehensive engagement with internal and community-based stakeholder groups. Community members and stakeholders were invited to comment on the draft CDF at a City open day event, as well as a workshop hosted by the Princess Vlei

Forum. The comments and feedback received were incorporated into the final CDF.

The CDF sets out principles to guide development at the vlei. These principles emphasise the long-term protection and rehabilitation of environmental and ecological features, diversification of existing recreation zones and improved interfaces between the conservation and activity zones. Similarly, development at the vlei should promote and facilitate public access to the water's edge for recreation. In addition to exploring opportunities for economic sustainability and value generation, development should include improvement of the water quality of the Princess Vlei and surrounding waterbodies.

Project implementation

Coordinating different stakeholder perspectives and inputs is a challenging process. To establish a common vision, the project team sought to understand the needs of each stakeholder group and identify key priorities for the Princess Vlei area. This necessitated numerous engagements but communication has been essential to the successful delivery of the CDF.

The CDF will pave the way for the implementation of significant improvements to the vlei. To date, the first phase of planned development in Princess Vlei has been completed. This included an entrance gateway off Prince George Drive and a pedestrian pathway that flows onto a timber viewing deck overlooking the vlei. Although there is

no set timeframe for the implementation of the CDF, work is being undertaken as resources become available and stakeholder expectations are being managed carefully.

To deter vandalism and crime, the district office and Planning and Development unit were compiling a safety plan (at the time of interview) that includes stationing park rangers at the vlei to assist with safe keeping of infrastructure and visitors. The park ranger approach has been successfully implemented in other parts of the city and will be adapted to fit the Princess Vlei context.

Evaluation

The development of a long-term vision for Princess Vlei has been beneficial in obtaining buy-in from internal and

external stakeholders. By bringing together a variety of people to envision the future of Princess Vlei, this project contributes excellently to building collaborative capacity. Securing community input at every stage of the CDF process was also vital to ensuring that the final CDF could respond to community needs and priorities.

Though it has been difficult to navigate between competing and conflicting viewpoints, stakeholder engagement has resulted in a stronger development proposal for Princess Vlei that promotes and enhances ecological integrity and improves quality of life for surrounding communities. ●

Sustainability assessment: Princess Vlei CDF





Social portfolio

The projects in this section are driven by a strong social component. Most of them have significantly involved communities in the development of processes and structures. Although the pillars of sustainability are interconnected, the projects in this category were originally motivated by the need to address a social problem that arose from within the community or came from the everyday dynamics within communities in the city.

Project 3: Appointment systems learning initiative



Problem statement

At most clinics, returning patients are given an appointment date but with no specified timeslot. As a result, patients, including those without appointments, generally arrive early in the morning, often queuing before the clinic opens. This leads to long waiting times, and school-going children and patients with jobs often need to take a whole day off to go to the clinic.

The lack of an appointment system also places significant pressure on clinic staff to improve patient through-flow. As a result of anticipated long waiting times, clinics are recording low and declining patient retention for chronic programmes like HIV and TB treatment.

Project outline

For various reasons, many clinics have tried and failed to implement an appointment system successfully. Rather than developing a centralised appointment system solution, a learning environment where ideas and experiences could be shared was created. In partnership with the University of the Western Cape, clinics were encouraged to learn from clinics with functional appointment systems, such as Eastridge Clinic in Mitchells Plain, in order to develop their own solutions.

Since clinics differ in size, programme types and staff-patient ratio, the learning system needed to be adaptable. Through a bottom-up approach, clinic teams were given the opportunity to develop an appointment system that worked for their context and teams were encouraged to troubleshoot any arising challenges.

Project design

At an initial workshop, clinic teams comprising professional staff, managers and clerks were brought together to share their experiences and understanding of appointment systems. Based on learnings, each team was challenged to design and implement a system in at least one health service at their clinic.

Two clinics were selected from each of the City’s health subdistricts – one that had some experience with implementing an appointment system and one that was new to appointment systems. Rather than adopting a one-size-fits-all approach, clinics were given the platform to learn, explore and experiment in order to identify suitable solutions for their respective contexts.

To guide the initiative, a central steering committee that included different levels of management was formed. Programme managers were asked to monitor the appointment systems operating in their respective subdistricts. To ensure the sustainability of the learning initiative, buy-in from subdistrict programme managers was essential as they provided oversight, encouraged staff and took ownership of the system.

Project implementation

Since implementing appointment systems, several facilities have reported a significant decline in patient waiting times, facility congestion and queuing before the clinic opening time. Staff members also reported that they had more time to complete administrative tasks, such as filing and data capturing, following implementation.

The flexibility and ownership imparted through the learning initiative has also inspired clinic teams to start appointment systems in additional health services. Furthermore, these success stories help garner buy-in from clinics that still need to design and implement appointment systems.

Evaluation

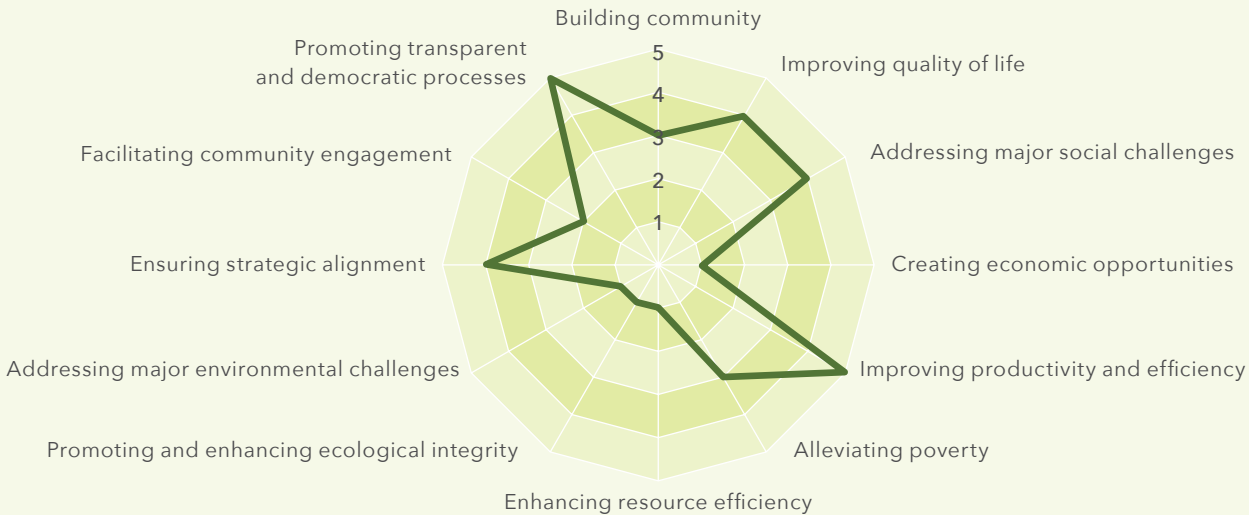
As a result of improved patient flows and reduced waiting times, the appointment system learning initiative excellently improves productivity and efficiency. Introducing timed appointment slots also makes healthcare more accessible for those who cannot afford to miss a day of work or school, thereby contributing very well to an improved quality of life.

Establishing a steering committee, with different levels of management

represented, was key to successfully implementing appointment systems that work. Although there was no patient representation on this committee, there are several examples of how existing local health committees, which include patient representation, discussed and provided input into the appointment system design.

Currently, there are no standard operating procedures for appointment systems. Although there is merit in standardising appointment systems across the city, with the possibility of introducing electronic booking, this needs to be done in a manner that retains the flexibility of the initiative. As such, the project focus is on distilling the main lessons learnt into ‘guidelines’ to support the next phases of implementation. ●

Sustainability assessment: Appointment systems learning initiative



Project 4: Greenville Garden City: Phase 1



★ Silver star rating

Problem statement

The norm in South Africa is for government to drive subsidised housing opportunities. Given the acute need for housing in Cape Town and the high rate of urbanisation, the current housing delivery model is unsustainable and incapable of making a dent in the housing backlog. Rather, the City needs to start bringing in private and civic parties to help drive large-scale human settlement developments.

Project outline

The overall objective of the Greenville Garden City project is to build an integrated and sustainable human

settlement that will serve as a development catalyst in the greater Fisantekraal area.

Of the 17 000 homes that will be developed, 5 000 units have been allocated for Breaking New Ground (BNG) subsidised housing. Other housing types will be gap housing, rental accommodation and bond houses. The planning of this human settlement also includes school sites, retail developments, sports grounds and healthcare.

In addition to being the first low-cost housing development on privately owned land, this project makes use of alternate building technology (ABT) to accelerate housing delivery for the 2 500 households

currently living in the Fisantekraal informal settlement and surrounding areas.

Project design

This is a partnership project between the City, Western Cape Provincial Government and Garden Cities wherein the City and Province provided planning, design and implementation input, standards, specification and approvals, and Garden Cities provided the land and assumed the role of the developer.

Due to the size of the project, it has been divided into phases to make construction more manageable. To efficiently deliver housing, the project team opted for the Benex Masonry System, an innovative

Australian material made from cement and polystyrene. Not only is it quicker to build with these blocks, but they allow for the employment of low-skill labour and have better properties than traditional construction material.

Project implementation

Since its launch in March 2016, 173 houses have been handed over to new owners at Greenville (at the time of writing). Due to the use of ABT, there is also a high percentage of local labour involved. For the 2015/16 financial year, 153 local community members were employed against the planned target of 40.

As this is a massive project, extensive liaison has taken place between Garden Cities and affected residents and community and civic associations in the area. A Project Steering Committee (PSC)

has also been established to keep all role players and beneficiaries informed of the scope and effects of the development.

Evaluation

The Greenville Garden City development satisfactorily aligns with the City's densification policy, Transport Orientated Development Strategy and Integrated Human Settlements framework, which is based on partnerships and innovative solutions to mitigate the challenges resulting from increased urbanisation.

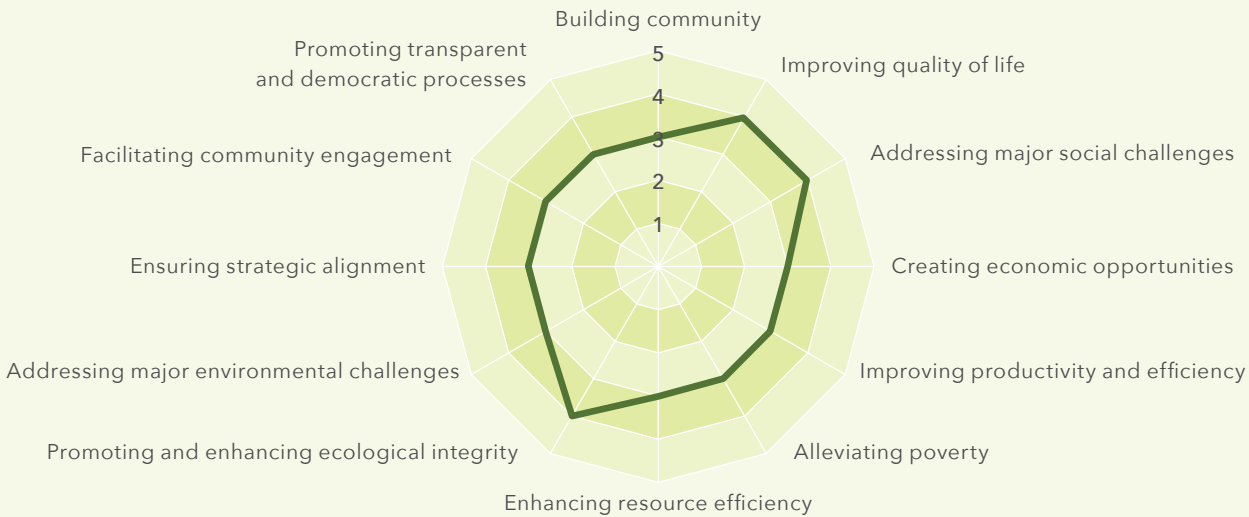
This public-private partnership approach to service delivery challenges the status quo on BNG housing, to make it a means of true upliftment and better social conditions. The project has the potential to model future private-public partnerships in the city and country. Furthermore, the use of ABT piloted

in this project has the potential to be rolled out in other developments and the material production industry could be significantly expanded to allow for this.

While the building of bonded housing for sale to first-time buyers and middle-income home owners is part of the entire strategy, the project team prioritises the needs of those in greatest need of decent housing. As a result, the project contributes very well to improving quality of life and addressing major social challenges.

In addition to the social, economic and transport amenities, the Greenville Life Cycle Management Plan highlights plans to promote and enhance the ecological integrity of the site by rehabilitating the river and wetlands on site and incorporating the surrounding greenbelts into the development of Greenville. ●

Sustainability assessment: Greenville Garden City: Phase 1



Project 5: Health Service design



Problem statement

There are more than 100 clinics located in communities across the Cape Town metro, as well as a number of mobile and satellite clinics. Many of these clinics experience the same challenges: inefficient systems that lead to long queues and long waiting times, minimal comfort for patients, eroded patient privacy and dignity, as well as frustration for staff and patients alike.

In order to improve the patient experience and make the healthcare environment more comfortable, these issues need to be addressed. In light of resource constraints, re-engineering clinic systems and processes require a creative approach.

Project outline

Albow Gardens Clinic (Milnerton), Town 2 Clinic (Khayelitsha) and Wallacedene Clinic

(Kraaifontein) participated in a ‘Service Design in Health Project’ over 18 months to improve patient service at City healthcare facilities.

The project used service design processes to demonstrate the value of design thinking as foundational methodology for the facilitation of improved staff communication and collaboration.

Project design

The service design pilot project, a legacy of the 2014 World Design Capital, was run in partnership with the Dutch Embassy and facilitated by the Craft and Design Institute and CocreateSA.

Clinic staff members participated in a co-design process to identify bottlenecks and actively worked together to co-design

solutions for the complex issues tackled on a daily basis. Once key challenges were identified, participants selected intervention projects based on open discussions. Thus, each clinic selected a project aligned with the needs of its employees and identified innovations.

This project brought staff together and promoted new ways of listening, communicating and solving challenges. As a result of embedding service design methodology in the minds of healthcare staff, the process taught clinic staff the discipline and importance of a smooth working environment.

Project implementation

Although participating clinics had different outcomes, they all highlighted improved patient flow and patient communication.

For example, Wallacedene Clinic previously had one room with four nurses that attended to TB patients. Now that they have compartmentalised this room, there is more privacy and patients are communicating their issues more openly to the nurses.

Albow Gardens Clinic, on the other hand, introduced an in-and-out whiteboard, which is used to communicate patient service rate. This makes patients aware of how staff movement or absenteeism will influence the patient service rate on any given day.

Furthermore, various service design interventions have recorded an increased number of regular staff meetings, which has enhanced communication among employees as a result of changed mindsets and dynamics

between employees. Staff have also been identifying issues and taking responsibility for challenges instead of passing the problem onto management.

Evaluation

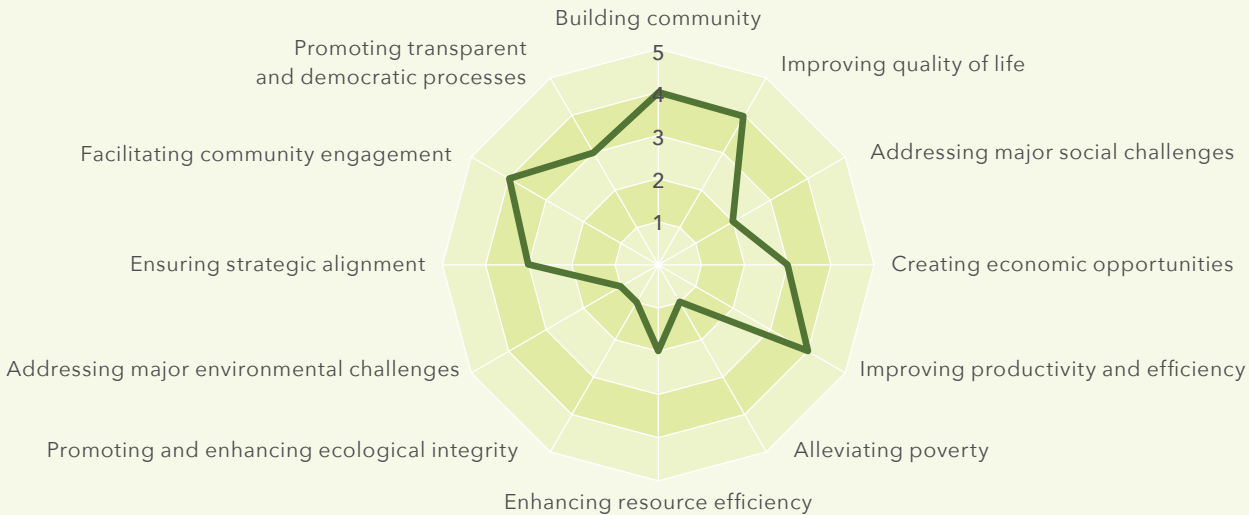
The underlying value of co-creation sees participants looking at their work environment from a customer point of view and realising that their colleagues are their teammates. This creative intervention contributes very well to improved access to healthcare facilities for patients and promotes collaboration and partnership within clinic staff components. Moreover, service design forms part of the City’s shift to a more customer-centric approach being driven at an organisational level.

Enhancing the quality of services at clinics with the end-user in mind demonstrates the responsiveness of the project to

community needs. Similarly, embedding service design as a methodology encourages staff to follow a continuous improvement cycle of communicating, identifying new challenges and finding ways to resolve them creatively.

By bringing staff together and finding new ways to listen, communicate and solve challenges, the service design methodology equips staff to improve productivity and efficiency in their respective facilities. Service design also lends itself as a sustainable approach to improving service delivery with limited resources. Going into the future, the City will investigate the best ways to replicate the principles of the service design methodology. ●

Sustainability assessment: Health Service design



Project 6: Healthy Living Lifestyle programme



Problem statement

Statistics show that participation in sport and recreation plays a big role in decreasing community crime rates and criminal activity. Besides being an excellent stress reliever, active participation in recreation promotes a balanced healthy lifestyle. For many years, the focus of the City's Recreation and Parks (formerly Sport and Recreation) Department was on the provision of formal sporting facilities. This, however, only catered for a small portion of the population. Additionally, the City recognised that community halls were not being productively used and some were in a state of disrepair.

Project outline

To promote health and exercise, the Healthy Living Lifestyle programme offers

communities an array of different activities that improve quality of life, health and skills, and empower leadership to ensure long-term sustainability of the programme.

The programme hosts a range of activities for different age groups and capabilities, including those with disabilities. Activities span across arts and crafts, sports and games, giving community members access to new experiences and opportunities.

Though based at City facilities, the programme is dependent on a strong network of partnering non-governmental organisations (NGOs) who run activities under the common theme of healthy living.

Project design

At present, the Healthy Living Lifestyle programme runs at 14 community centres

across the city. Each centre has a different schedule and the classes offered reflect community needs and wants gathered through research.

NGOs are invited to submit their vision and potential service offerings to the City. Those that are selected are placed on probation for three months. During this time, statistics and feedback sessions are undertaken to measure the success of the programme. Monitoring and evaluation still continues once the programme becomes permanent, but on a less frequent basis.

Project implementation

This programme provides sustainable and accessible activities that encourage an active and healthy lifestyle in communities. Not only does the programme provide a

safe space for recreation, but it serves as a platform to educate and raise awareness about health and well-being issues. For example, the Department of Health, one of the programme partners, offer general check-ups once a month during health sessions. Significant improvements have been seen in the health of some participants that attend exercise classes regularly.

The programme also hosts a number of events such as 'In Step for Life', an annual beach walk event where participants can take part in a four or eight kilometre walk at Muizenberg Beach. Similarly, some programmes arrange hikes or visits to nearby nature reserves. This exposes community members to new experiences they may not have experienced otherwise.

Evaluation

This programme very successfully brings together different people and age groups, who may otherwise be isolated from the community. Similarly, by promoting health and well-being, the programme contributes to improved quality of life and helps address major social challenges facing communities very well by promoting education and awareness.

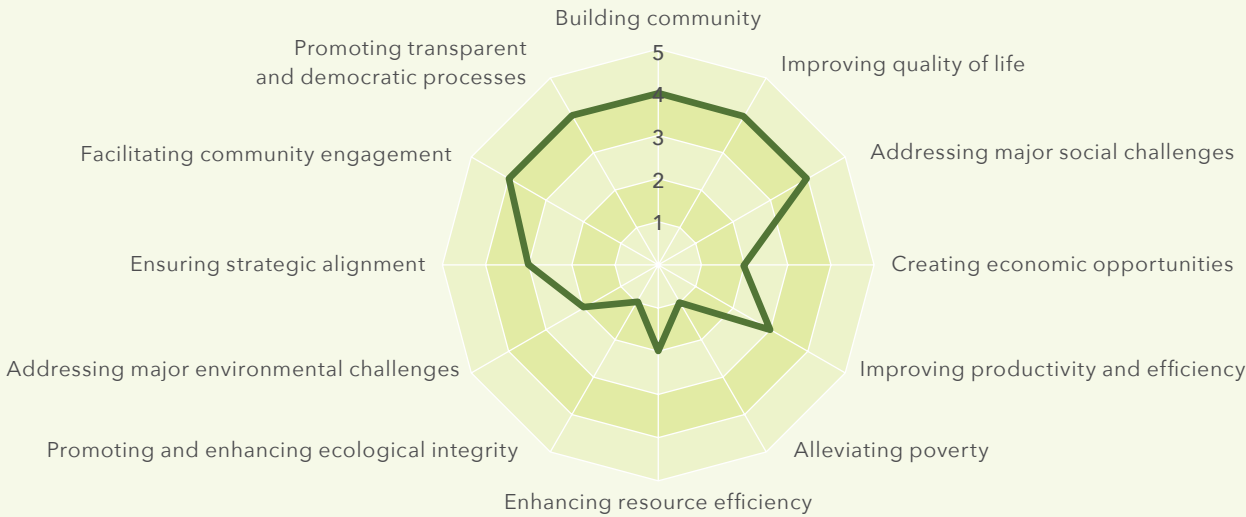
Although there has been some education and awareness on waste and water use, the programme has potential scope to strengthen the link between resource efficiency and health through education or the establishment of recycling stations at community halls.

An important aspect of the Healthy Living Lifestyle programme is its ability to expand, change and incorporate new activities. Through its partner network, the project can adequately respond to community needs and desires. Over the years, some activities have moved out of City facilities to meet needs in schools, retirement homes and church halls.

To strengthen alignment and increase the programme's reach, the project team is working with other departments to use recreation as a link to other social services such as health, libraries and ECDs.

Increased facility use, however, places a strain on equipment and reduces the potential to generate revenue from hiring facilities for private event use. As a result, ward allocations are increasingly becoming the main source of funding. ●

Sustainability assessment: Healthy Living Lifestyle programme



Project 7: Mfuleni urban node and urban park



★ Gold star rating

Problem statement

Mfuleni has developed rapidly over the past 10 years and is now home to 60 000 residents. The fact that the delivery of housing has run ahead of the provision of public facilities and amenities has meant that access to such facilities is limited and implementation has tended to be reactive rather than planned and coordinated.

Project outline

The Mfuleni urban node project seeks to transform the historic civic core of Mfuleni into an active and vibrant civic precinct where the community can access a range of services. Through this project, it was possible to give purpose to currently underutilised City-owned land within the node, to integrate community facilities and create functional spaces where people can access childcare, recreation, healthcare and transportation.

Through a precinct planning and land use process, development rights and

environmental authorisation for the development of the node was obtained. Land that was previously vacant is now zoned for mixed-use development, which can be used to develop new public facilities or released for private investment. The new urban park is at the centre of the precinct and brings the different components within the node together.

Project design

Recognising that the local community knows the area best, community members were asked nominate individuals onto a PSC. This committee provided guidance and direction to City officials and consultant teams. They helped to identify pressing challenges, provided input into options and alternatives and provided direction to the projects.

Transversal management has been essential to finding holistic solutions to the prevalent socio-economic and technical design challenges that the project confronted. To develop an integrated plan, the project brought together City Health, Recreation and Parks, Transport,

as well as the provincial Education and Health Departments.

Business case studies were prepared for those aspects of the plan that the PSC considered to be the most important. These projects included: the park, an upgraded taxi rank, improvements to Mfuleni Main Road, a market for traders and a sports hall. The urban park was prioritised as the first of the projects to be implemented because the community viewed access to safe, quality open space as an imperative.

Project implementation

The flexible approach and longer-term commitment to the area has allowed for many small wins to be achieved with minimum capital expenditure. The unexpected need for a temporary clinic resulted in a portion of the site adjacent to the recreation precinct being repurposed. Once the permanent clinic has been built, the temporary facility will be repurposed as a multipurpose sports hall and transferred back to the City. Although this was not originally identified as one of the interventions, the project

demonstrated responsiveness to changing community needs.

To date, the dune behind Mfuleni Primary School, identified as a safety threat, has been removed and replaced by a sports field. This has also improved visibility of the area and aids passive surveillance. Furthermore, the urban park has been completed, which included renewing the two five-a-side soccer pitches, a splash pad, gym and play equipment, walkways, fencing and lighting. In response to the current water crisis and to create a more resilient future for the City's parks, boreholes and water tanks have been installed to irrigate the park and nearby sports field.

As part of the park project, a development platform was created for a future Community Health Centre that will be

developed by the Western Cape Provincial Government Health Department.

Evaluation

The interventions within the Mfuleni urban node demonstrate the judicious and targeted use of limited public resources within local areas in need of renewal. The efficient use of well-located City-owned land for this project enhances resource efficiency and enhances the community's access to infrastructure and services. Future plans include making land available to non-governmental organisations and the private sector in order to stimulate investment and economic opportunities in the area.

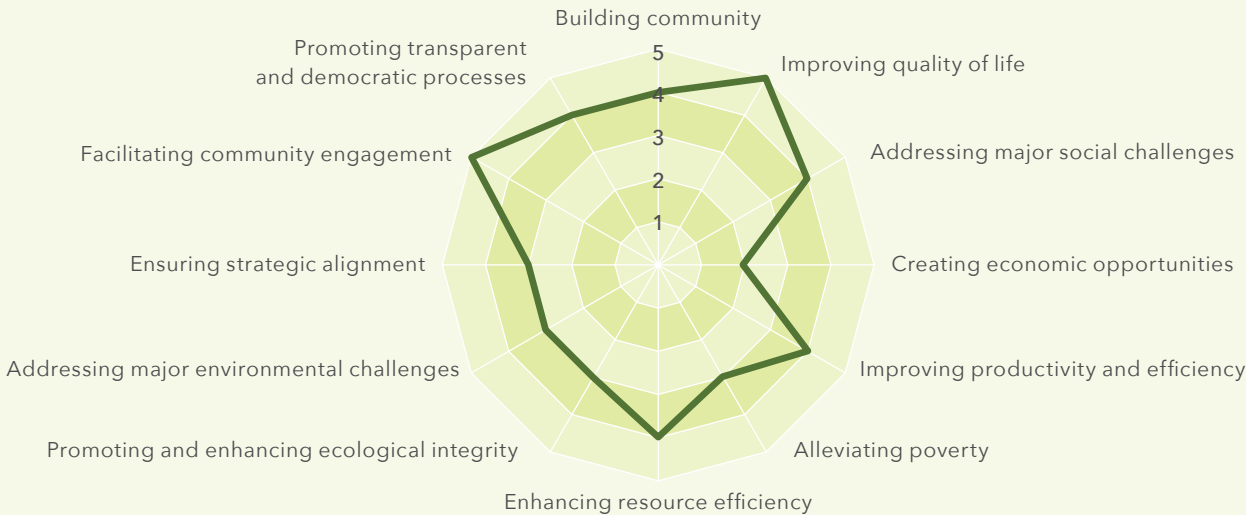
Each individual initiative is coordinated and helps to address major social and economic challenges by reinforcing priorities, improving safety and security

for community members and creating opportunities for private investment.

In addition to the removal of visual barriers such as the dune, operational measures are being put in place to address issues of crime and management. For example, security cameras are being installed and the park will be fenced with the gates opened at predetermined times to allow for commuters to safely and easily gain access to the taxi rank.

This project demonstrates that building resilience entails consistent commitment to achieving long-term objectives. The City and the communities that it serves needs to embrace incremental change, coordinate the capital budgets of various line functions, collaborate and continually engage. ●

Sustainability assessment: Mfuleni urban node and urban park



Project 8: Municipal electrification programme



Problem statement

According to the Bill of Rights, access to electricity is one of the basic services that the municipal authority is mandated to provide to residents. Since the current rate of urbanisation far exceeds the provision of formal housing, households in informal settlements, often with insufficient formal electrification infrastructure, turn to illegal and unsafe connections to nearby electrified areas. This highlights the increasingly important need for the electricity network to be extended to service residents living in informal settlements and backyarders.

Project outline

The municipal electrification programme provides electricity connections to communities in underserved areas that meet policy criteria and includes the

replacement and/or upgrading of electricity distribution infrastructure.

Similarly, the infrastructure for backyarder electrification projects is designed in a manner that can eventually service backyard dwellings on private property, as well as up to three backyarder connections per council rental unit to ensure effective planning and spending.

Project design

Areas to be electrified are prioritised according to project readiness and sequence in which the electrification requests were received. At the onset of the electrification process, the project team liaises with the community and community leaders to explain the process, the timelines and what assistance will be required from the community in order for the project to be a success.

Based on the plans from the Informal Settlements Department for future upgrades or reblocking in the area, the Electricity Department develops a design and implementation plan. Part of the implementation plan involves removal of illegal connections and the creation of access ways, both of which require cooperation from the community.

To sustain buy-in throughout the process, the community is engaged during each phase of the electrification process. This effectively prevents disruptions once the project begins, especially in cases where dwellings may need to be moved to place infrastructure or create access ways. Education and awareness initiatives also provide a platform for communicating timeframes and key information about the electrification process.

Project implementation

The Municipal Financial Management Act limits the installation of electricity service connections to communities situated on City-owned land and the replacement of electricity distribution infrastructure. Within this context, the City has met its electrification target for the last five years and is continuing its electrification drive. For the 2016/17 financial year, the City installed 1 746 meters in disadvantaged communities within the City supply area and 4 000, in partnership with Eskom, within the Eskom supply area.

Legally connecting households to the electricity network reduces incidents of electrical accidents. It also decreases the use of wood and charcoal materials for heating and cooking, which are associated with respiratory illnesses and increased fire frequency.

As part of the programme, up to three new connections per yard for backyard dwellers are installed in areas identified by the Informal Settlements Department. Giving backyarders their own electricity meters and connections effectively minimises the possible exploitation of backyard tenants by landlords. Also, backyarder electrification improves the quality of life of those living in the backyards of established formal housing developments.

Evaluation

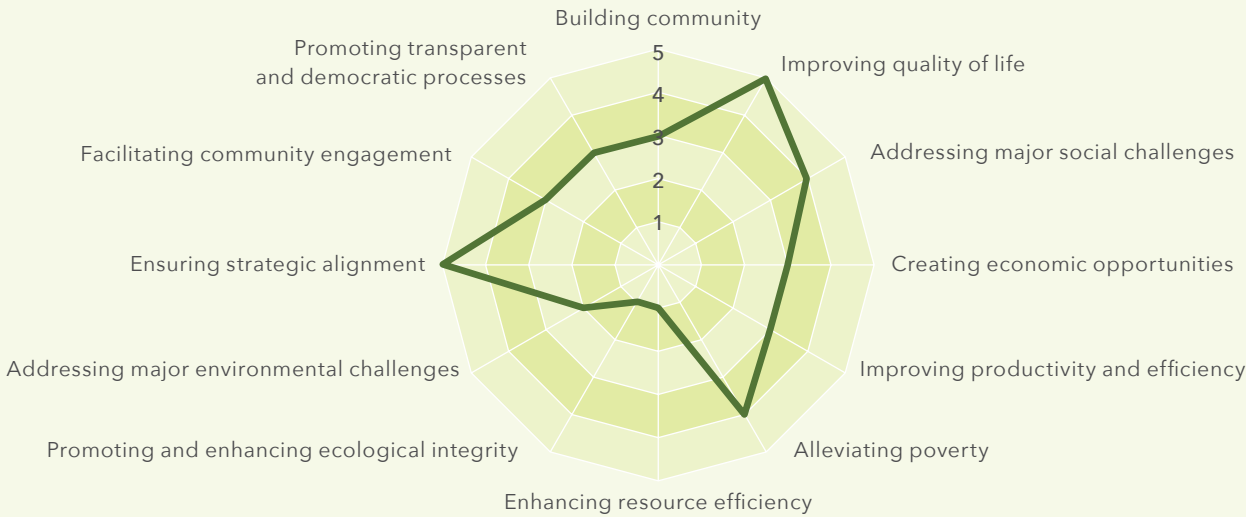
Access to affordable electricity contributes to improved socio-economic conditions as it contributes to creating an enabling environment for households to develop their livelihoods. A connection to the grid also reduces the risks of fire as residents no longer need candles for lighting or paraffin stoves for cooking. As

a result, the electrification programme addresses major social challenges very well and contributes to the restoration of human dignity.

This project is excellently aligned with the SFA of a caring city, as well as national and provincial priorities. As the service backlog decreases, the project team is initiating proactive engagements with other City line functions that have informal settlements on their land.

Although there is some education and awareness training given to beneficiaries, this could be further strengthened by links to the Smart Living Lifestyle programme, which focuses on sustainable resource use. Through education and awareness sessions, the project could help counter the impact of increased electricity generation. ●

Sustainability assessment: Municipal electrification programme



Project 9: Phola Park stormwater upgrade



Game changer

Problem statement

Poor stormwater quality is often attributed to various challenges. In Phola Park, an informal settlement in Philippi, frequent sewer overflows, constant black- and grey-water discharge into the existing open stormwater channel, windblown litter and refuse, bacteria from standing water and dumping of solid waste into the stormwater system all contributed to poor stormwater quality.

Despite ongoing maintenance and cleaning, the open stormwater channel continued to be used as a dumping site and the water quality remained unchanged. As a result, residents in Phola Park faced health and safety problems emanating from the badly polluted open stormwater channel running along the eastern edge of the community.

Project outline

Upgrading the Phola Park open stormwater channel was identified as key to improving stormwater quality and the living conditions of residents adjacent to the channel. The Phola Park stormwater upgrade evolved from a small-scale intervention to improve water quality to a full-scale intervention after extensive community participation.

The once heavily polluted channel was replaced with a dual function closed underground stormwater system and NMT pathway, with landscaping to enhance the public open space.

Project design

At the outset, the project team worked with the local ward councillor and an NGO, People’s Environmental Planning, to stimulate collaboration with the community. The community participated in a walkabout to identify problems related to the existing open stormwater channel

and this input informed interim and long-term interventions.

Given that the condition of the existing open stormwater channel in Phola Park were intertwined with socio-economic challenges, a project-based programme of action was developed in partnership with Transport, Human Settlements, Environmental Management, Spatial Planning and Corporate Services and Compliance.

Following a cost-benefit analysis of six possible solutions, the underground box culvert closed stormwater system emerged as the most sustainable as it has a longer lifespan, reduces human health related costs and prevents flooding.

Project implementation

In addition to a well-functioning stormwater system, the project addressed socio-economic issues that were affecting stormwater quality. To reduce dumping

and littering, the Solid Waste Removal Department increased their service by providing a door-to-door bag service of two bags per dwelling per week. Furthermore, solid waste containers are serviced twice a week and feasibility studies are underway to investigate the roll-out of green solid waste bins. To accompany the service enhancements, the Solid Waste Public Awareness and Education Communication Branch coordinated a door-to-door awareness campaign about the impacts of pollutants on the health of human and natural ecosystems.

Similarly, the Water and Sanitation Department provided additional toilet facilities and reconfigured existing ablution facilities. This involved raising the communal ablution facilities above ground level,

providing washing facilities and improving public access to ablution areas.

Evaluation

Upgrading the open stormwater channel in Phola Park greatly improved quality of life. Through the upgrade, a once degraded stormwater channel was transformed into a public open space where children can play safely and parents no longer have to worry about the health and safety risks. In addition to installing a closed underground stormwater system, the increased waste removal service and added ablution facilities promote dignified human settlements.

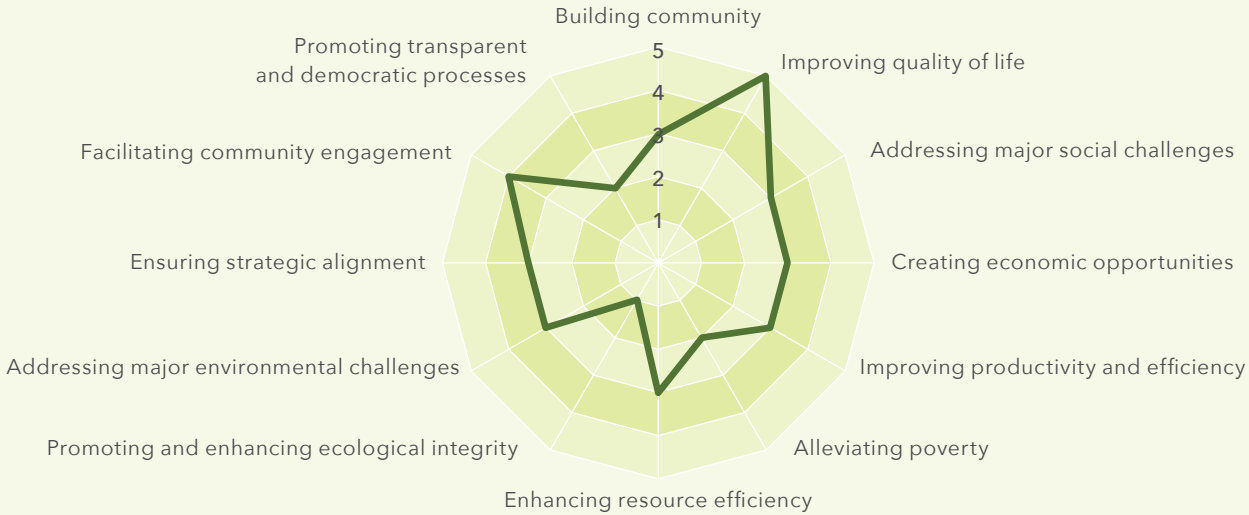
Since there were a range of socio-economic issues at play, a transversal approach was needed to undertake this project to promote cooperative governance and improve

the final outcome of the stormwater channel upgrade. Furthermore, the implemented system has drastically reduced maintenance costs and ensures cost-effective use of City funds.

Furthermore, the water-sensitive design parameters incorporated into the design reduces demand for irrigation water and the subsurface drainage helps keep the layer works dry. This promotes resource efficiency by contributing to improved water quality.

Although the stormwater channel design catered for landscaping, at the time of interview, many of the trees planted had been removed. Successfully restoring and rehabilitating the open space may require continued community engagement to cultivate ownership for natural systems. ●

Sustainability assessment: Phola Park stormwater upgrade



Project 10: Schools deworming programme



Problem statement

Soil-transmitted Helminths that cause roundworms, whipworms and hookworms are among the leading causes of infection in disadvantaged children living in densely populated areas. Children in rural and informal areas are particularly susceptible to contracting diseases from the environment that they live and play in due to poor sanitation or poor personal hygiene.

Studies show that handwashing with soap before eating and after using the toilet can reduce deaths from diarrhoea by almost 50% and decrease acute respiratory infections by 25%. To improve health and awareness, it is important for children to

be informed about environmental health risks and preventative measures in an easily understandable manner.

Project outline

The environmental health education programme, coupled with the deworming programme, raises awareness about the importance of handwashing in order to reduce the risk of infection by worms.

The education programme is aimed at Grade R and Grade 1 learners to help them better understand the link between the environment and their health at an early age. Through exciting and engaging approaches, children are taught how to protect themselves from getting sick,

which in turn reduces their chances of contracting diarrhoeal diseases.

Project design

The environmental health education programme complements the biannual school deworming programme. The school deworming programme, endorsed by national government, was identified as an inexpensive and effective way to prevent diseases, such as intestinal worms, pneumonia or acute respiratory infections and diarrhoea. Moreover, environmental health education offers an entry point to tackle a wide range of diseases, beyond worm-related infections.

The education programme is conducted annually at schools located in informal settlements and rural areas in the northern subdistrict. Through lessons, children are taught how to use toilets, wash hands, care for the environment by not littering, avoid contaminated spaces, etc.

Project implementation

Since the programme is targeted at Grade R and Grade 1 learners, many of them hear the lessons twice, which assists with recollection and retention of information. To assess the level of understanding, a questionnaire is given to a sample of children before and after the lessons. The results of the questionnaire are used to monitor the impact of the education programme. To drive further impact, teachers are

given posters and booklets to continue educating learners.

Each year, the education programme reaches 3 000 children at 15 schools. Recently, this education and awareness-raising programme received the national Alfred Nzo award for environmental health excellence.

However, the reach of the programme is limited by funding. Currently, additional funding is needed to redevelop material and improve distribution.

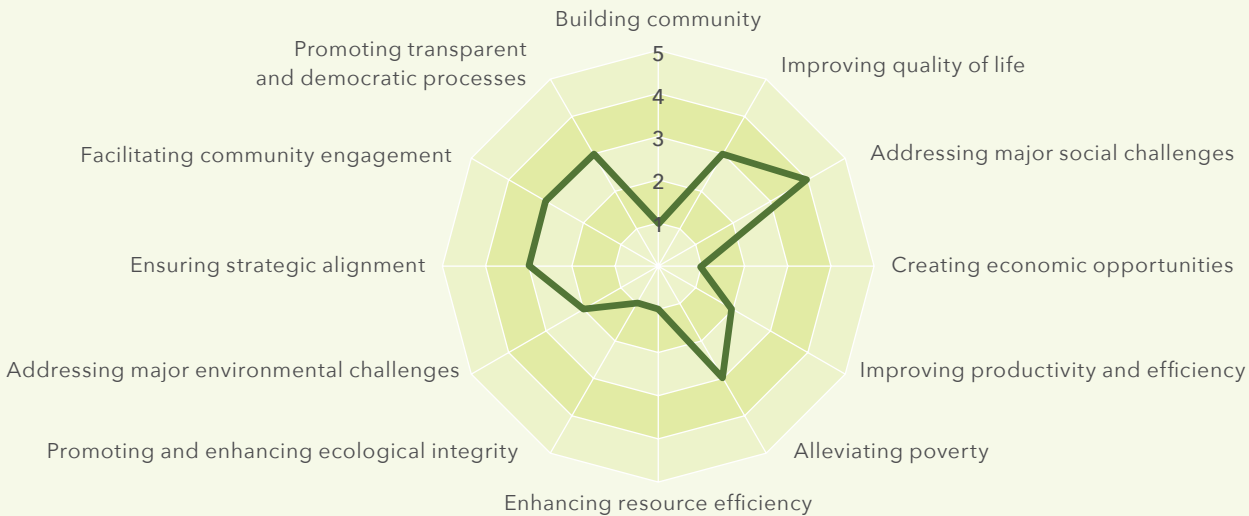
Evaluation

The schools' environmental health education programme supports children, a vulnerable group, by providing education and awareness. Although it is difficult to measure the impact of the education programme on health

improvements, the surveys conducted before and after lessons inform future interventions. Additionally, the project team has noted a decline in the number of diarrhoea cases in targeted areas.

Due to a close working relationship with provincial Department of Health and other City line functions to inform education sessions and content, this project promotes cooperative governance. Working in an integrated manner also makes it easier to find out about prevalent environmental health issues and report identified challenges to respective line functions. The education programme is also adaptive in nature and has the potential to incorporate additional schools and content to address public needs (resource dependent). ●

Sustainability assessment: Schools deworming programme



Project 11: Smart parks: Phase 2



Problem statement

Recreation engages people and helps build social cohesion, generating healthy, inclusive communities. Broadly speaking, parks and recreation facilities provide a range of environmental, socio-economic and aesthetic benefits.

Research conducted by Recreation and Parks has found that only 7% of people are involved in formal sports. Counterintuitively, many of the City's facilities cater only for formal sport. This oversight emphasises the need for increased attention and investment on integrated facilities that promote family recreation and cater for all age groups.

Project outline

Smart parks are an approach to developing high-quality and user-friendly parks in Cape Town's most underserved communities. The core objective of smart parks is to develop multifunctional recreational spaces that cater for a range of user groups by responding to their recreational needs. Through the smart parks programme, the City is making access to quality recreational spaces more equitable.

Following the implementation of three parks in phase 1 (featured in 2016), phase 2 focuses on learning from experience in order to inform the development of parks in Seawinds, Nomzamo and Atlantis. True to the design of smart parks, each is of high

quality, founded on community consultation and individually designed.

Project design

Lessons learnt from the phase 1 were essential for the successful roll-out of phase 2, as well as the informed identification of parks for upgrading. Smart parks promote green open space, but to improve accessibility, the second phase focuses on better integrating parks with other community facilities in the area, for example clinics, taxi ranks, schools and sports fields, to make facilities work together as a unit.

The selection of durable materials as informed by monitoring and evaluation of previously developed facilities was also important for resource efficiency

and sustainability. For instance, robust elements incorporated in phase 2 include the planting of trees between 500 and 1 000 litres to increase survivability and provide instant benefits to communities.

As smart parks are customer-centric, a series of community engagements are held to gain a broad cross section of stakeholders and better understand specific community needs and gather ideas from stakeholders to enhance the project.

Project implementation

Each smart park is uniquely designed. For example, Seawinds has an extensive concrete water play area with channels and features that teach children about the water cycle while Nomzamo has a natural timber play structure that allows children to use their imagination in a safe

environment with a rubber surface below to soften the impact of adventurous play.

Smart parks rolled out in phase one have been well utilised but this often corresponds with fast rates of wear and tear. To counter this and deter future vandalism, a 12-month maintenance plan is now included in each smart park contract. This document is drafted in consultation with district officials who have expertise in horticulture, hard surfacing and artificial turf maintenance.

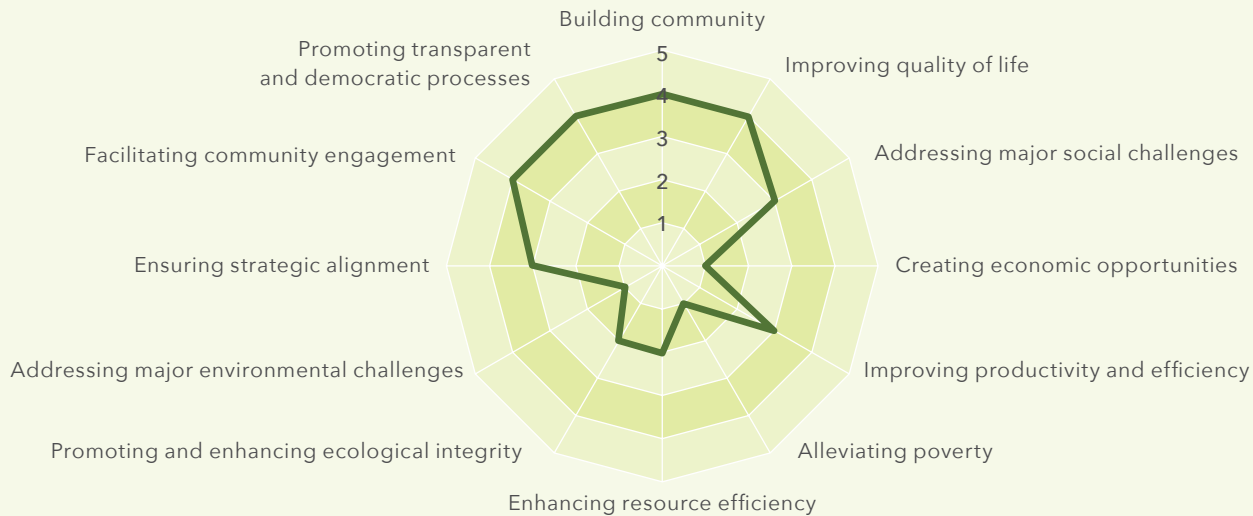
Evaluation

District offices, responsible for the smart park once completed, are involved in the project from inception as they are most aware of the site-specific challenges. This also makes the handover of the completed project seamless and maximises the City's return on investment.

Smart parks facilitate community engagement very well by involving each community in the design process of their park. To build capacity for engagement, communities are given as much information as possible in a visually understandable manner. To ensure that a range of needs are catered for, the number of engagements hosted is reliant on the feedback received and the number of active groups represented.

Lastly, smart parks offer the opportunity to test design features based on the needs of communities. Due to continued learning and reflection, future smart parks can be improved and better adapted to suit community needs. This approach helps ensure replicability of project principles and methods very well. ●

Sustainability assessment: Smart parks: Phase 2



Project 12: Sweet Home Farm Upgrade of Informal Settlements Programme



Problem statement

Sweet Home Farm, an informal settlement in Philippi, is home to approximately 17 000 people living in 4 000 structures on a total area of 23,16 ha. Due to its location and high density, this community is highly susceptible to flooding and fires and disease and illness are easily spread.

The community was serviced by a combination of communal chemical and waterborne ablution facilities, water supply via standpipes, gravel access roads and stormwater channels along these access roads. In 2013, the settlement was earmarked for an in situ upgrade in accordance with the National Housing Code.

Public participation and community involvement are central to successful upgrading projects but community participation is often compliance-driven. Additionally, the relationships between the state and communities are often hostile and untrusting.

Project outline

The upgrading of Sweet Home Farm is being approached in a highly people-centred manner with a strong emphasis on partnership between the community and the project team. Through facilitated participation, the community has been able to inform project-level proposals and decisions while receiving technical insights and support.

This project seeks to deliver sustainable, high-quality engineering services to vulnerable communities. The process undertaken recognises that the people who know best about the housing crisis and solutions are those who are currently facing the lack of housing most acutely. As a result, community participation is encouraged wherever possible.

Project design

The upgrading of Sweet Home Farm is a multistakeholder development process led by the City, Bergstan consulting and development engineers and a community-elected PSC.

Following extensive community engagement, work to install bulk services and road infrastructure is underway. Since there was limited land available, the City purchased an incremental development area (IDA) site nearby to accommodate beneficiaries affected by construction work. Ultimately, the IDA will accommodate 349 housing opportunities while 1 350 opportunities will be located on the Upgrade of Informal Settlements Programme (UISP) site.

Project implementation

Over the past year, the community has been involved in 40 engagements as part of the participatory planning process. These were a combination of open community meetings and neighbourhood block-specific

engagements. To maximise participation, community meetings were scheduled for Saturdays and weeknights. Working closely with the community from the start drew invested stakeholders into the process to ensure smooth progress and strengthened partnerships. Through these engagements, the community and the professional team co-created a superblock and subdivision plan that reflects the desires and needs of the community.

Although housing remains a recurrent theme, the project team has carefully managed the community's expectations by providing a comprehensive overview of the upgrading process, key milestones, municipal timeframes and decision-making processes.

To fast-track the upgrading process at Sweet Home Farm, an incremental

development approach is underway to allow for main infrastructure to be installed. This ensures the community's access to basic services while awaiting approval of the detailed development plans. As a result of community participation, the community unanimously agreed on a higher settlement density with multilevel housing typologies to keep relocations to a minimum.

Evaluation

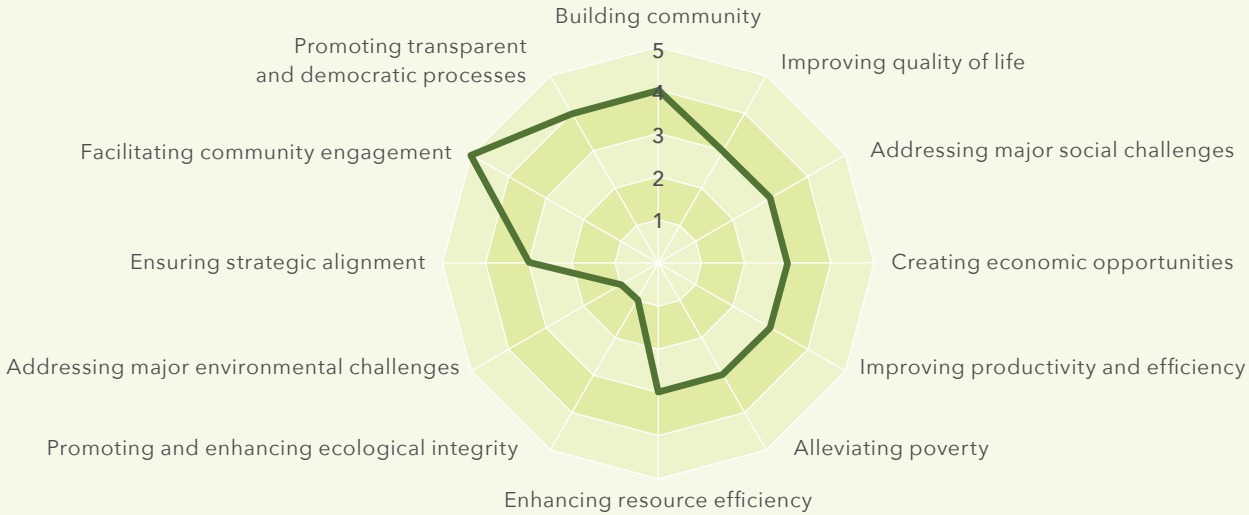
The groundwork done before commencing with the upgrade of Sweet Home Farm illustrates the importance of incorporating community participation as an integral aspect of the development process.

Citizens were empowered through access to information about project processes and timeframes. Community

engagements also provided the platform to clarify project objectives and desired outcomes of the upgrading intervention. As evidenced in the community's proposed housing solution, empowering the PSC allows for grassroots solutions to emerge and enables the community to better understand densification. This also facilitated community ownership and buy-in to the project. These various approaches to facilitating community engagement excellently help the public interact more effectively with local government and decision makers.

Although the detailed internal subdivision plan is still being reviewed by City planners, the incremental upgrading approach adopted has allowed for the delivery of bulk services and road infrastructure to continue thereby improving the service status in Sweet Home Farm. ●

Sustainability assessment: Sweet Home Farm Upgrade of Informal Settlements Programme



Project 13: Thermal ceiling retrofit programme



Problem statement

The South African national government has been providing qualifying households with state-subsidised housing since 1994. However, the majority of state-subsidised housing units built between 1994 and 2005 were constructed without insulated ceilings and weatherproofing because the national government subsidy made no provisions for ceiling installations.

Houses without ceilings get either very hot or very cold in extreme weather conditions. As a result, households use a lot of electricity to warm themselves during winter. The fact that beneficiaries lived in these conditions for many years has caused much discomfort due to poor thermal performance and condensation, which gives rise to damp conditions and poor indoor air quality and can cause respiratory illnesses.

Project outline

Although the housing subsidy now provides for ceilings and weatherproofing, the aim of this project is to improve the living conditions of the beneficiaries who have been living in subsidised houses that were built prior to 2005 with no fitted ceilings.

Apart from fitting the houses with ceilings, the project focuses on fixing roof leaks and improper ceiling lighting to ensure that the newly installed ceiling is not damaged. The project also includes repair of leaking roofs, installation of ceiling insulation, painting of ceiling and electrical work in the roof, that is, replacement of power sockets, light fittings and installation of prepaid power boxes.

Project design

The project implementing agent, National Urban Reconstruction and Housing Agency (NURCHA), did an initial assessment to identify the 8 001 units in need of thermal ceiling retrofits across 13 areas in Cape Town. Only houses with no ceilings are included in the project and ceilings are installed in the original footprint of the house.

Before contractors begin retrofits, beneficiaries are given about R380 for the removal of their belongings from the property and storage thereof. This recognises the prevalent socio-economic challenges of unemployment and low wages in beneficiary communities.

Initially, contractors had a minimum of five houses a day to retrofit but after developing their technique they manage 20 to 25 houses per day. To maintain

South African Bureau of Standards (SABS) standards and municipal guidelines for construction, beneficiaries are not reimbursed or given supplies for self-installation.

Project implementation

Phase 1 of this project involved retrofitting 4 550 units in seven areas. To achieve this, three Small, Medium and Micro-sized Enterprises (SMME) contractors were appointed to undertake the construction phase. Furthermore, approximately 48 local contractors were appointed in Eureka, Broadlands, Vrygrond, Lwandle, Kalkfontein and Wesbank.

Beneficiaries are already reaping the benefits of thermal ceiling installations and seeing major improvements in their quality of life and energy

usage. For starters, ceilings provide increased temperatures indoors over longer periods in winter and decrease draughty winds that contribute to respiratory ailments.

At the time of interview, 80% (3 451 units) of phase 2 had been completed and on track for completion by June 2017.

Evaluation

A critical component of the programme is conformation with the Expanded Public Works Programme (EPWP) regulations. As a result, at least 25% of the workforce is employed from the beneficiary community. This has afforded 217 local individuals the opportunity of employment and skill acquisition.

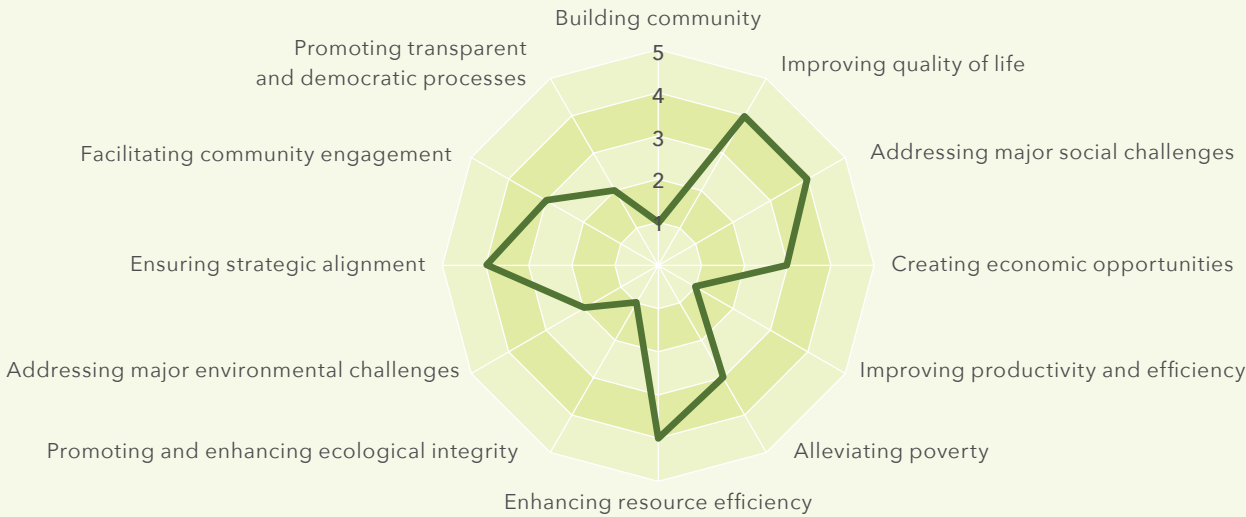
Measures to improve energy efficiency in existing buildings are more limited than

in new buildings. As the roof constitutes a large portion of a single-storey building, insulating the ceiling contributes to improved thermal performance and reduced energy consumption very well.

Through this project, the City took initiative to correct the shortcomings in the previous designs by retrospectively improving beneficiaries' quality of life and creating decent living spaces. This aligns with the SDS objective to build and promote safe households and communities.

Upon completion of phase 2, a survey will be conducted to evaluate the benefits of the ceiling retrofits. Information will include household size, household income and estimated cost of electricity. This monitoring and evaluation process will help inform future decision making. ●

Sustainability assessment: Thermal ceiling retrofit programme



Project 14: Upgrading intersections for non-motorised transport



Problem statement

Cape Town’s central business district (CBD) supports a high volume of traffic and NMT users. In many cases, the safety of NMT users is largely comprised by the design and operation of the road transport system, which is generally intended for vehicles.

As a result of this bias, vulnerable user groups, such as pedestrians and cyclists, cross roads when they judge that it is safe to do so and not necessarily when the traffic signal gives right of way. On the other hand, some intersections are inaccessible or difficult for disabled people to cross. In both cases the safety and efficiency of NMT is compromised.

Project outline

The objective of upgrading intersections in the CBD is to make the movement of NMT users in and around the city a more pleasant and safe experience and to encourage movement that does not rely on an engine or motor.

Over a two-year contract period, 40 intersections, including Buitengracht to Long Street and Buitensingel to Hans Strijdom Avenue, will be upgraded. Each intersection upgrade was individually designed to improve visibility of and for pedestrians/NMT, improve ease of movement for NMT/pedestrians/disabled people, prevent illegal parking blocking pedestrian pathways and decrease crossing distances.

Project design

This project uses small interventions to improve NMT safety. For starters, ‘bump outs’ and widening of pavements were implemented to shorten the amount of road that NMT users need to cross. The ‘bump outs’ also prevent illegal parking at intersections. This simple intervention means that pedestrians no longer have to tiptoe into the street to see if there is oncoming traffic. At the same time, drivers have a clear view of the intersection and can see if someone is waiting to cross.

To improve universal access, dipped kerbs or lower-gradient ramps between roads and pavements have been provided at all intersections. This makes it easier for those in wheelchairs, the elderly and

those pushing trolleys or prams to cross the intersection.

Centre medians were created as a safety intervention for wide two-way streets. These medians provide a halfway stopping point for pedestrians so that they do not need to manoeuvre across multiple lanes all at once.

Project implementation

Improved intersection crossings and demarcated NMT routes improve pedestrian safety and visibility, especially for those with visual or mobility impairments. Also, these intersection improvements ease conflict between motorists and pedestrians and reduce the likelihood of accidents.

In line the City’s objective to improve NMT infrastructure, the upgrading of intersections involved tree planting in non-obstructive locations to give NMT users shade and access to some ecological benefits. Furthermore, some intersections have granite kerbs and paving materials that complement features of the immediate environment to retain heritage aspects. Lastly, wider pavements provide the space for commercial activity, such as coffee shops, cafés or informal trading which would give small businesses the opportunity to start or expand.

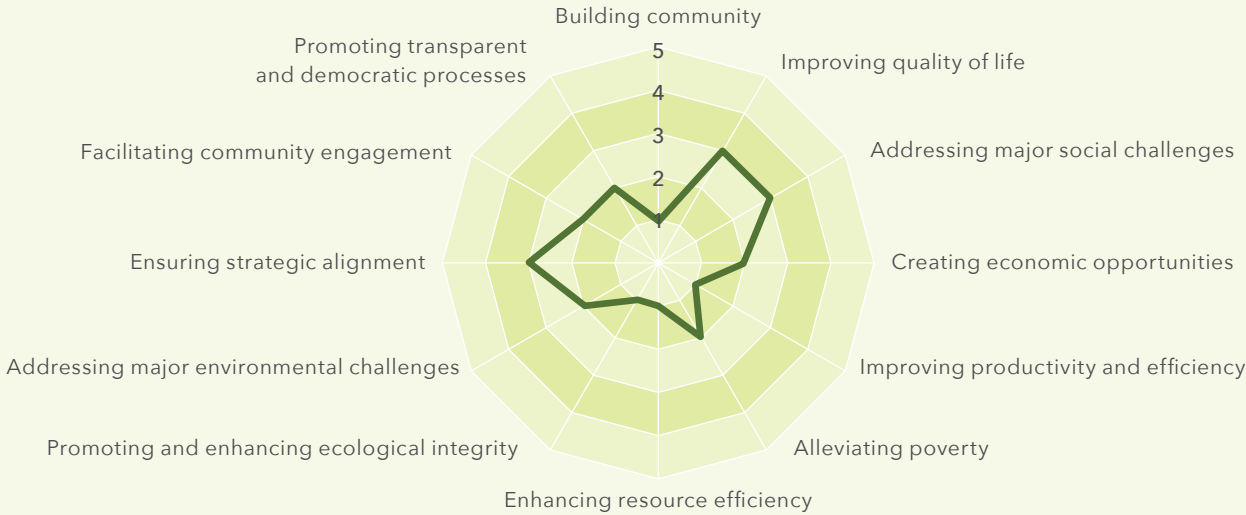
Evaluation

The upgrading of intersections in the CBD responds to the expressed and perceived needs of NMT users. By making the environment for NMT

mobility more pleasant, accessible and safer, this project contributes to making Cape Town a safe and caring city. Formally facilitating public input from NMT users, motorists and other stakeholders could provide key insights for future intersection upgrades and help the public engage more effectively with local government.

This project recognises the challenges of retrofitting the existing urban landscape. Although seemingly small, improvements made to the pavements, intersections and medians are a cost-effective approach to improving safety without reducing road capacity or drastically slowing traffic down. The impact of previous and current intersection upgrades needs to be supported by a monitoring and evaluation process. ●

Sustainability assessment: Upgrading intersections for NMT



Project 15: Water Demand Management and water restrictions



★ Silver star rating

Water resilience

Problem statement

At the time of writing, the city was facing a severe drought and Level 5 water restrictions had been implemented for the first time ever to reduce water consumption. However, the current water crisis is not a temporary phenomenon. Among other climatic changes, Cape Town is likely to face a decrease in annual average rainfall and an increase in mean annual temperature.

The City promulgated the long-term Water Conservation and Water Demand Management (WCWDM) Strategy in 2007 to ensure the long-term balance between available water resources and water demand, to postpone the need for

expensive capital infrastructure projects for as long as it is economically viable and to minimise water wastage.

In light of Cape Town’s susceptibility to water insecurity, it is essential to cultivate a long-term ethic and culture of water use efficiency.

Project outline

The City’s water conservation education and awareness programmes complements and improves the effectiveness of active water conservation programmes, such as water fixture and appliance retrofit or replacement programmes, and helps drive consumer behaviour change. In times of drought, water restrictions can reinforce education and awareness initiatives to reduce water consumption.

The water conservation public education programme is an important element of the City’s broad water demand management

strategy. Together with the water restrictions, the education programme has seen an improvement in water efficiency and signs of consumer behaviour change.

Project design

The consumer education and awareness programme is an ongoing component of the WCWDM programme. The education programme is targeted at domestic, commercial and industrial users and customises educational material for each audience. Methods of engagement include community meetings in low-income areas, social media engagement for more affluent consumers and a mascot, Amanzi, for school outreaches.

To help prioritise engagement initiatives, a master plan team makes use of geographical information systems (GIS) to illustrate the spatial distribution of water consumption and help to identify high water consumption areas.

Cape Town’s drought prompted the enforcement of Level 2 water restrictions in November 2015 to reduce water demand. The City since escalated water restrictions to Level 5 in an effort to prudently manage the available water supply. Water restrictions will remain in place until dam levels are restored to a safe level.

Project implementation

As a combined result of technical and non-technical water demand management interventions, the City has increased water supply sustainability in the face of significantly lower-than-normal rainfall received.

The enforcement of water restrictions since January 2016 has saved the equivalent of the Wemmershoek Dam (58 644 MI), and by end May 2017, the

equivalent of the larger Berg River Dam. Water restrictions have also triggered a behavioural change (e.g. installation of grey-water systems) and reduced wastage. This change in behaviour is reinforced by water conservation awareness and education.

Although measuring the impact of education and awareness programmes is often difficult, the project team uses feedback forms to assess perceptions or determine how well the presented information was received.

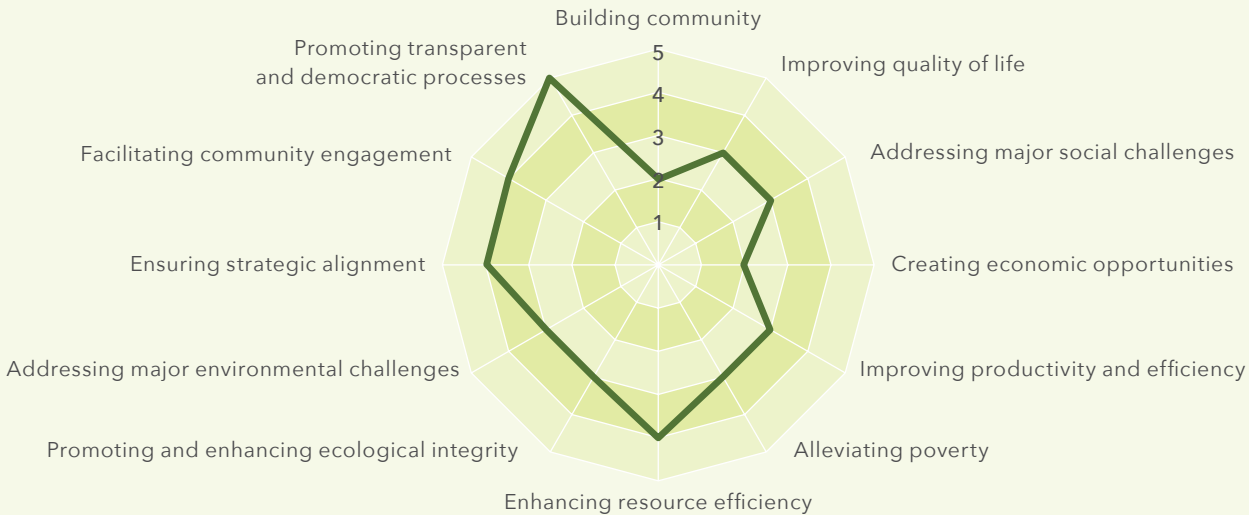
Evaluation

Water conservation education and awareness has significant environmental benefits. For starters, reducing water demand eases the environmental strain placed on the region’s water system including rivers and groundwater systems,

thereby conserving ecosystem functions. Similarly, engaging with a variety of stakeholders builds communities’ capacity for engagement. Community engagement also encourages citizens to adjust their water demand in an informed and intentional manner.

The effects of consumer education and water restrictions on behaviour change are substantial but supporting interventions are needed. As a result, the long-term WCWDM approach aims to achieve water savings from both consumer behaviour change and technological improvements. To continue driving progressive behaviour change, successful consumer education is reliant on the availability of current and interesting content to help consumers make better decisions. ●

Sustainability assessment: Water Demand Management and water restrictions





Economic portfolio

Given South Africa's high unemployment rate, significant inequality, and globally competitive markets, projects of an economic nature are designed and implemented to stimulate economic activity and generate economic growth.

The projects are aligned with the need to create sustainable employment opportunities and facilitate the alleviation of poverty. As a result, these projects perform strongly in the economic field of the assessment, and are primarily driven by the need to ensure optimal use of existing resources in a responsible and balanced manner to ensure continued functioning profitability.

Project 16: Atlantis Investment Incentives Scheme



Problem statement

Many South Africans continue to live and work with the legacy of settlements that are defined and influenced by apartheid and colonial planning policies and practices. Atlantis, for instance, a spatially segregated settlement 40 kilometres north of Cape Town, was established in the 1970s with industries supported by an extensive range of incentives. The withdrawal of the regional industrial incentive support programme in the late 1980s hastened the decline of Atlantis as a business location, and the town collapsed into socio-economic distress. Today, Atlantis is still characterised by high unemployment and social ills, such as poverty, gang activity and drug abuse.

Project outline

As part of a broader programme to revitalise the economy of Atlantis, the City designed and implemented the Atlantis

Investment Incentives Scheme, which aims to attract investments to and promote economic development in Atlantis by addressing market failures.

Although the financial incentives that the City can offer to investors are limited, some of the non-financial incentives, such as investment facilitation support and fast-tracking of applications, make it possible to significantly reduce the time it takes for new businesses to become operational. Like most incentive schemes, these incentives do not affect the fundamental business case for an investment, but they play an important role in influencing the final location decisions of an investor.

Project design

The incentives offered were carefully designed to create an enabling environment for the private sector to

grow the economy, create jobs and improve the quality of life for local citizens in a sustainable manner. The standard incentives package offered in Atlantis includes financial and non-financial components.

In addition to development application fee exemptions and electricity tariff subsidies, businesses can receive a civil or electrical development contribution discount of up to R1 million per investment. These incentives are tied to specific employment creation criteria that ensure that the local community derives maximum benefit from investments.

Non-financial benefits to investors include fast-tracking of development applications and access to an Investment Facilitation Office (IFO) for investor assistance. To ensure efficient management of natural resources, a biodiversity offset has been

secured for cases where investors need environmental authorisation.

Project implementation

Since 2013, when implementation of the Incentives Scheme started, 1 309 non-financial incentives have been taken up. Similarly, investors have benefited from R50,4 million worth of financial incentives from the City. Through the Incentives Scheme, the City has attracted major new investments with a combined value of close to R2 billion and created 900 jobs (with 75% of these jobs being taken up by locals living in Atlantis) in the process.

As part of the broader programme to revitalise the economy of the area, the Incentives Scheme has contributed to the establishment of a Green Technology Manufacturing Hub, the South African

Renewable Energy Business Incubator (SAREBI) and the extension of the MyCiTi bus network to Atlantis.

In addition to attracting new investment, the Incentives Scheme has also made an important contribution to business retention, with a number of large existing employers in the area opting to remain operational after receiving the electricity incentive.

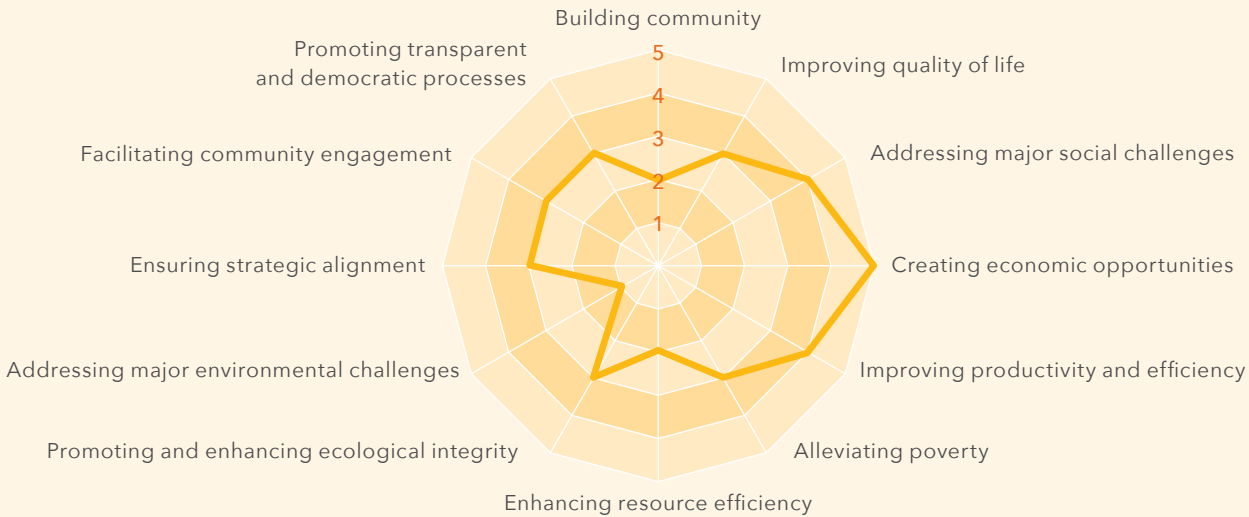
Evaluation

Through the Incentives Scheme, the City is working to attract local and foreign direct investments into the Atlantis Industrial Area in order to grow the local economy. This has contributed very well to addressing major social challenges and excellently to the creation of economic opportunities.

Atlantis is currently the only geographic area where the full package of investment incentives is available. Going forward, both financial and non-financial incentive packages will be made available city-wide in a similar spatially targeted manner. This will allow for other marginalised communities to benefit from increased access to economic opportunities.

Before future roll-out, however, the type and nature of the incentives offered will need to be investigated. For example, although the biodiversity offset has a positive environmental outcome, this must be balanced against the electricity tariff, which may be subsidising high electricity consumption and contributing to a larger carbon footprint. ●

Sustainability assessment: Atlantis Investment Incentives Scheme



Project 17: Biodiversity management skills development



Problem statement

In many parts of Cape Town, unemployment rates are high and households have little or no access to income or further education. At the same time, many low-income communities do not or cannot access nature reserves for recreation and so fail to engage with natural open spaces.

Efforts are made to target unemployed people in low-income communities neighbouring the City’s reserves, for job creation, skills development and training programmes, like the Kader Asmal EPWP. However, many of these programmes only create temporary jobs and short-term skills development and often do not directly link to further opportunities.

Project outline

Since 2005, the City’s Biodiversity Management Branch (BMB) has been working in partnership with internal and external partners to establish a multifaceted

skills development programme for biodiversity. The programme comprises eight individual programmes at different levels and allows candidates to progress through these while working closely with permanent biodiversity management staff on nature reserves.

The programme provides an ongoing opportunity for training, skills development and career development with the aim of uplifting and upskilling individuals for a career in biodiversity management and conservation.

Project design

The skills development programme is run and funded in partnership with a range of organisations including the Cape Town Environmental Education Trust (CTEET), Table Mountain Fund (TMF), South African National Biodiversity Institute (SANBI) and Cape Action for People and the Environment (CAPE).

The suite of programmes offered range from EPWP projects for unskilled labourers through to skills development training at NQF level 5. It also includes Work Integrated Learning (WIL) for those who are studying nature conservation at tertiary institutions, as well as graduate internships, learnerships and volunteer opportunities.

Several of the programmes are specifically targeted at low-income communities in the Cape Flats. Similarly, job openings in the BMB are advertised directly targeting individuals who have been part of one of the skills development programmes with the goal of ensuring that the programme feeds directly into employment opportunities.

Project implementation

Up to 40% of the permanent staff members in the BMB were employed after going through at least one of the eight

skills development programmes. During the 2016/17 financial year, eight out of 12 vacancies were filled with individuals from the EPWP and skills development programmes. Furthermore, 135 000 person days of temporary employment and 3 272 job opportunities were created on the reserves and BioNet.

To cultivate a culture of learning in the BMB, the skills development programme also involves training and developing existing staff members to ensure that they, too, are able to enhance their professional development and chances of promotion. Skills development for existing staff includes soft skills needed to be effective in a working environment, as well as marketable skills, like the

attainment of driver’s licences and equipment operation.

In addition to upskilling people from low-income communities and providing job opportunities, the programme also facilitates engagement with communities in natural open spaces and conservation. This effectively turns environments like nature reserves, which may have previously been unknown or unengaging, into places of opportunity and empowerment for people and their communities.

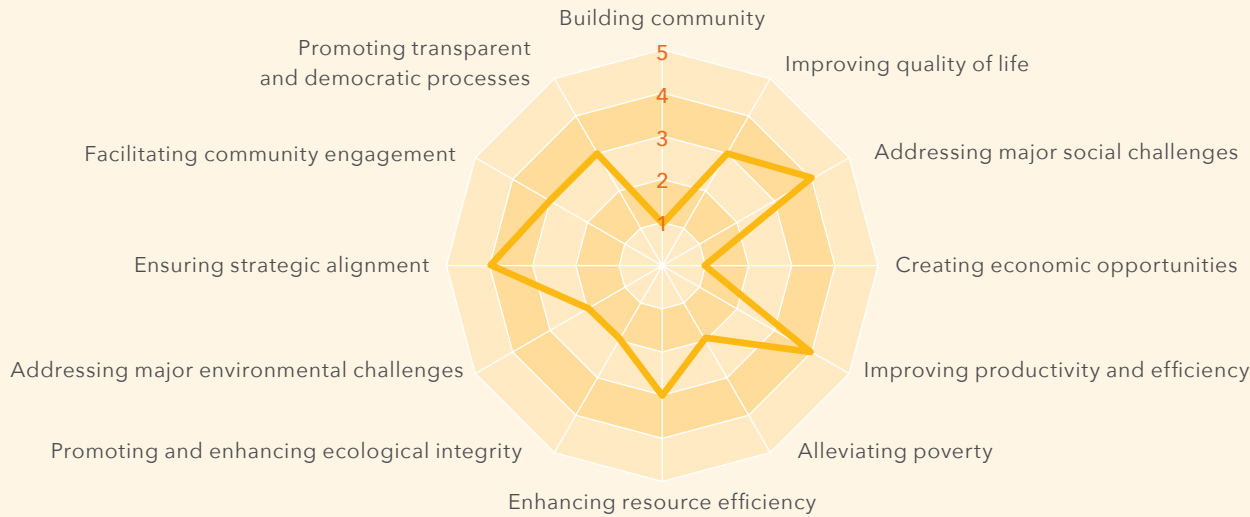
Evaluation

The skills development programme challenges the barriers to training, capacity-building and sustainable income by providing ongoing

opportunities for skills development and career progression in biodiversity and nature conservation. This excellently demonstrates strategic alignment with national, provincial and City objectives to address high unemployment rates.

In addition to promoting the creation of economic opportunities, the programme contributes significantly to conservation capacity on nature reserves thereby promoting and enhancing ecological integrity. Similarly, there is potential to expand this programme to feed into and catalyse the green economy, using trained individuals to work on and rehabilitate river systems, beaches and other parts of the natural open space system. ●

Sustainability assessment: Biodiversity management skills development



Project 18: Business Query Tracking System



Problem statement

Business focus group findings indicate that business people do not have quick access and answers to information required to conduct or set up their business. Furthermore, people doing business in Cape Town often need to contact several City departments and various business support organisations before attaining the information that they are looking for.

Although there are various points of contact within the City, there is no standardised approach to recording and responding to business queries. This creates a breeding ground for confusion, frustration and inefficient use of resources and threatens the creation of an economically-enabling environment.

Project outline

The Business Query Tracking System (BQTS) provides a platform to coherently

track and analyse all business service requests, transactions and queries. Categorisation of business enquiries makes it possible to identify trends and facilitate more successful interactions between the City and businesses. By tracking business enquiries, the City can proactively implement preventative or corrective measures needed to make it easier for enterprises to start, grow and develop.

Project design

To track business enquiries, the BQTS was seamlessly integrated with the City's SAP Customer Relations Management system in order to create a one-stop shop for businesses. This linkage also reduces the amount of time spent collating and analysing business query data.

To aid analysis, queries received from businesses are distinguished from

household and individual queries. To further improve the process, contract staff members with business knowledge were incorporated into the corporate call centre specifically to handle business enquiries. To further aid responsiveness to business queries, staff can easily access standardised information via the City's Body of Knowledge SharePoint application.

The information gathered through the BQTS enables line functions to analyse from whom the query is coming and what sector or industry they work in. With better understanding of the information available, line functions can extrapolate trends in order to address recurring bottlenecks.

Project implementation

Having a one-stop shop saves businesses time and money. The BQTS allows for

the identification and responsiveness to service blockages and trends that are affecting businesses in the city. This information can then be used to prevent and address bottlenecks that have cost-saving implications for businesses and the City.

Since the system's launch, engagements between the City and business stakeholders has increased by 98% from 766 in 2015/16 to 1 521 in 2016/17. Previously, this information would have been captured manually, which had a direct impact on response rates. Based on improved monitoring, the system has maintained an 84% action and resolution rate within 48 hours for all business queries.

Evaluation

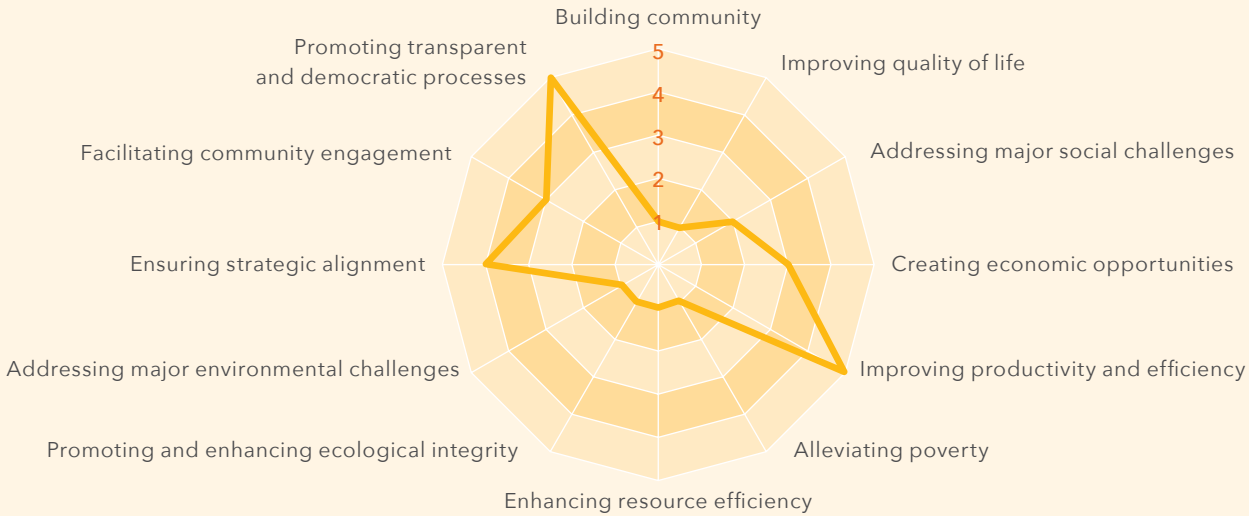
The BQTS scores excellently for improving productivity and efficiency, as the system significantly improves the City's efficiency and responsiveness. Similarly, the system partners with a network of over 90 business support organisations to disseminate information and provide support to entrepreneurs.

Additionally, this project contributes excellently to transparent and democratic processes by promoting access to information and ensuring responsiveness to business needs. Continuous work is being undertaken to improve the tracking of business queries in order to build and sustain an enabling regulatory environment for those doing business in Cape Town. Notably, the BQTS demonstrates potential to facilitate

two-way engagement by helping the public interact more effectively with local government and decision makers.

The system has been carefully monitored throughout the pilot period (July 2016 to June 2017) in order to inform improvements for the next phase. For instance, expanding the details gathered when a query is submitted to include information such as demographics and more industry options will help improve reporting and trend analysis. The platform also has room to survey businesses on their interaction experience with the City, which could inform proactive steps to reduce business-related bottlenecks. ●

Sustainability assessment: Business Query Tracking System



Project 19: Customer feedback project



Problem statement

Each year, the City’s Contact Centre receives up to two million customer calls. With such large volumes of requests coming through, it can be challenging to ensure that each customer is provided with a positive experience in order to encourage further or continued engagement.

The Contact Centre is an important part of customer service but the City had no access to customer insights, such as levels of satisfaction and quality of service, or could not guarantee that customers were receiving the help that they needed.

Project outline

Customer satisfaction surveys are an extensively used tool for monitoring the

performance of call centres in the services industry. To monitor the quality of service provided through its Contact Centre, the City adopted an automated end-of-call survey for customers contacting the call centre.

The end-of-call survey software is used to obtain immediate feedback from customers contacting the City. This feedback process effectively forms part of existing quality assurance efforts that the City has in place and serves as an early warning system for service delivery challenges.

Project design

The system gathers feedback on three aspects: the quality of service received, the professionalism of the call centre

agent and the resolution of their query. Respondents are asked to rate each of these aspects on a 1 to 5 point scale. Use of a Likert rating scale measures degrees of opinions, which would otherwise be hidden by a yes or no answer. Also, the quantitative data gathered can be analysed with relative ease.

Since the customer feedback system is integrated with SAP, survey responses can be linked to a call which allows for follow-through. This enables team leaders to conduct root cause analysis and escalate issues where necessary. On the other hand, for call centre agent productivity, customer feedback can be used to recognise well-performing staff and identify training needs and capacity-building areas for low-rating staff.

Project implementation

At the time of interview, two queues, also known as call topic areas, had been using the feedback system for a month. During this time period, 79% of customers who contacted the Centre participated in the survey with ratings averaging 4,5 out of 5.

In addition to supporting line functions such as water and sanitation, roads, accounts and traffic licensing, the Contact Centre is linked to a key principle of the ODTP: customer centricity. This reinforces the Centre’s essential role in maintaining the City’s reputation.

The system has also enabled the identification of agents who are not answering questions effectively, as well as service delivery blockages. System

users have also been able to proactively follow up with unhappy customers, thereby circumventing social and mainstream media complaints.

Evaluation

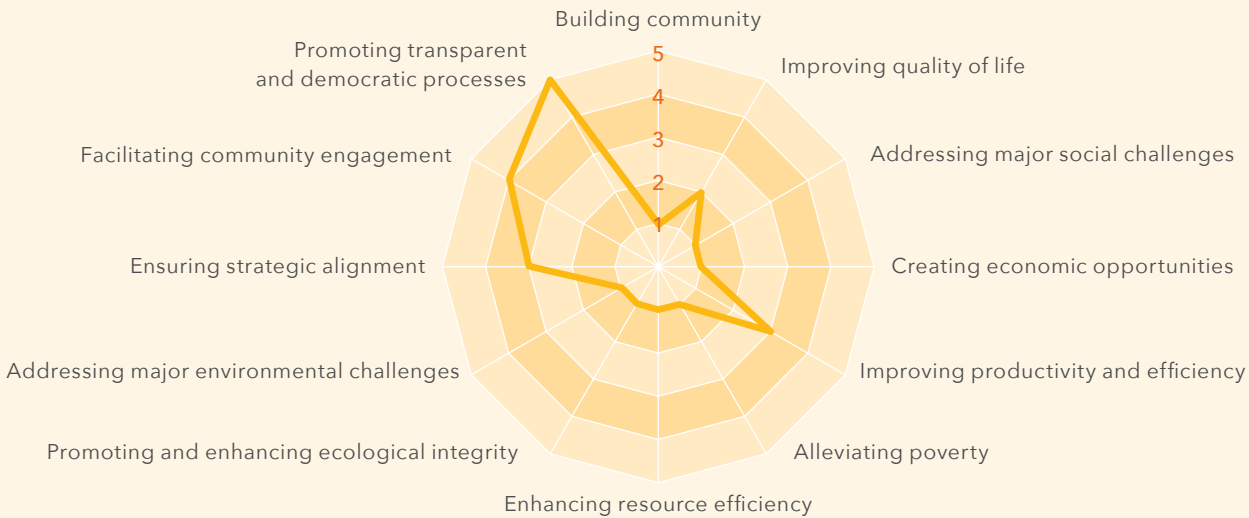
The customer feedback project provides a platform for the City’s customers to give input and feedback into the customer relations system. Furthermore, by tapping into the public’s experience, the City can follow up on complaints and ensure that service delivery and customer relations are running optimally.

The system is being rolled out gradually across topic areas before ultimately extending it to SMS, email and online, too. As the survey can be adapted for different call centre streams, it can be

used to respond to customer relation needs and monitor customer experiences with the City. These features of the project excellently ensure responsiveness to public needs, as well as replicability of the project principles and methods.

By proactively asking the customers for feedback, this project helps the public interact more effectively with the City, thereby facilitating community engagement very well. Customer feedback provides the organisation with insights that it can use to improve service delivery and overall customer experience. To increase the feedback received, preparations are underway to record the three service-related questions in Afrikaans, English and Xhosa. ●

Sustainability assessment: Customer feedback project



Project 20: Energy efficiency in municipal operations



Problem statement

The City is the single largest user of energy in Cape Town because many of its functions have an energy implication. The City’s Assets and Facilities Management Department, for instance, manages 2 500 municipal buildings and 5 000 erfs. Wastewater treatment and street lighting are other large consumers of power.

In light of rising electricity costs and the need for increased resource efficiency, the City must facilitate a shift towards greater energy efficiency and reduced energy consumption in Cape Town.

Project outline

Energy efficiency is a cornerstone of the City’s Energy2040 Goal (featured in the 2016 edition), which models a more resilient, lower carbon, resource-efficient and equitable future for Cape Town. As a result, the energy-efficiency retrofit

programme is targeted at high municipal energy users.

To drive down energy consumption, technological interventions include ongoing retrofit of buildings, traffic lights, street lights, buildings and wastewater treatment plants. To facilitate behaviour change, energy management training is given to facilities staff, smart driver training for fleet and behaviour change programmes for building users.

Project design

The City’s energy-efficiency interventions have primarily been focused on operational functions that consume large amounts of energy, namely street lighting, traffic lights and building energy-efficiency retrofits. The building energy-efficiency programme is further complemented by rooftop solar PV systems.

Smart meters have been installed in major municipal buildings and at all wastewater treatment facilities to better understand and manage electricity consumption. The automated meter readings also provide data on efficiency savings, which is important for reporting purposes. Since smart meters record electricity consumption at 30-minute intervals, the information gathered is more accurate than that provided through monthly meter readings.

To further increase awareness and promote sustainable operations, facility and project managers undergo customised energy management training. The City has also developed an internal resource management protocol for implementation across municipal operations and a resource data management system to track, monitor and report energy savings and consumption.

Project implementation

The City implemented energy-efficiency retrofit programmes within municipal operations in 2009. These energy retrofit initiatives have resulted in significant carbon and financial savings. Between 2009 and 2015, retrofit initiatives saved over 79 730 megawatt hours. This translates into electricity savings of approximately R130 million and almost 78 933 less tonnes of carbon dioxide.

All the old tungsten bulbs in traffic lights across the city have been replaced with efficient light-emitting diodes (LEDs). This has reduced the electricity consumption of traffic lights to very low levels. Similarly, more than 25 000 of the City’s street lights have been retrofitted.

At the time of writing, the City had completed the retrofitting of 57% of its

large corporate buildings, including 40 large administrative municipal buildings. Furthermore, a total of 531 meters (i.e. including submeters) have been installed in 340 facilities. By making administrative buildings more energy efficient, the retrofit programme reduces costs and improves the quality of the working environment.

Evaluation

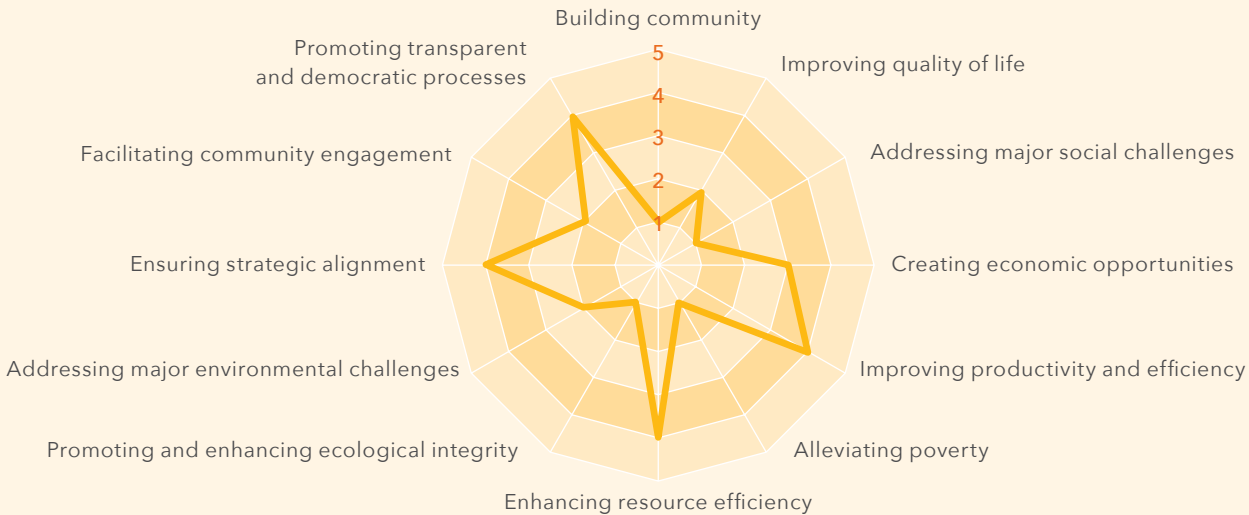
Electricity consumption accounts for the majority of energy consumption by the City, as well as the energy-related greenhouse gas emissions. The energy-efficiency retrofit programme enhances resource efficiency very well by driving down energy consumption in City operations.

Smart metering and improved data management improve the monitoring

process. The readily available data also informs decision-making processes to ensure a high return on investment and improves productivity and efficiency. Similarly, the data management system makes some of the City’s energy consumption data available to the public, allowing the public to learn more about energy efficiency and keeping the City accountable to its targets.

The City has a key role to play in leading the way towards reduced energy consumption and carbon emissions. In addition to rigorous monitoring and reporting, the City promotes cooperative governance very well by supporting the energy-efficiency programmes of the Western Cape Provincial Government and other municipalities. ●

Sustainability assessment: Energy efficiency in municipal operations



Project 21: Improved water metering



Water resilience

Green bond

Problem statement

Water meters are an important part of the city’s water reticulation network, as they measure the flow of water from a source and keep track of average domestic and commercial use of water supply.

Like most infrastructure, water meters start operating suboptimally when they age. This has implications for the meter reading accuracy and the City’s revenue stream, since water meters are used as cash registers. In order to optimise the City’s revenue, it is imperative that water meters be timeously replaced.

Project outline

Every day the City records 650 000 meter readings that ultimately inform customer billing. Effective water metering is essential for the sustainable management of water resources. This multipronged project aims to improve the accuracy and completeness of water consumption records, as well as incentivise and control water consumption in the city.

Improving water metering is a three-fold intervention comprising the replacement of deceased and aged meters; systematic relocation of meters; and installation of water management devices.

Project design

Water meters need to be replaced every 10 to 20 years, otherwise they are at risk of under-registering water consumption. To prioritise water meter replacements, the City uses a SAP-integrated Device Management System to record when meters were installed and when they are due for replacement. This database is updated monthly to incorporate new installations.

The City installs two types of water meters to cater for domestic use and commercial/ industrial use. In order to optimise water meters and extend their lifespan, it is important for water meters to be matched with the site. A large meter, for example, would not record low volumes and billing would be incorrect.

To further aid meter reading accuracy, a new IT system has been put in place. The system makes use of SAP-integrated GPS-enabled handheld devices. Furthermore, where necessary, meters are relocated to the perimeter of properties to make them more readily accessible for reading and maintenance.

As part of the programme, the project team installs water management devices for indigent households. This allows for a daily water allocation that is in line with what the resident can afford and therefore reduces the scope for more unsecured debt to accumulate. Any leaks on the property are fixed free of charge as part of this incentive, which also aids water conservation.

Project implementation

Although brass water meters are more durable, they are often stolen and need replacing before the expected replacement date. As a result, the City now installs plastic water meters. Despite their lifespan being shorter due to their sensitivity to UV light, they are a better financial investment.

One of the City’s latest drought interventions involves installing water management devices at households where high water consumption cannot be justified or has not been rectified despite

warnings. By mitigating overuse, water management devices effectively help households comply with the city’s current water restrictions. These devices also help residents identify any leaks and have them fixed, instead of running up a large water bill and then being unable to pay.

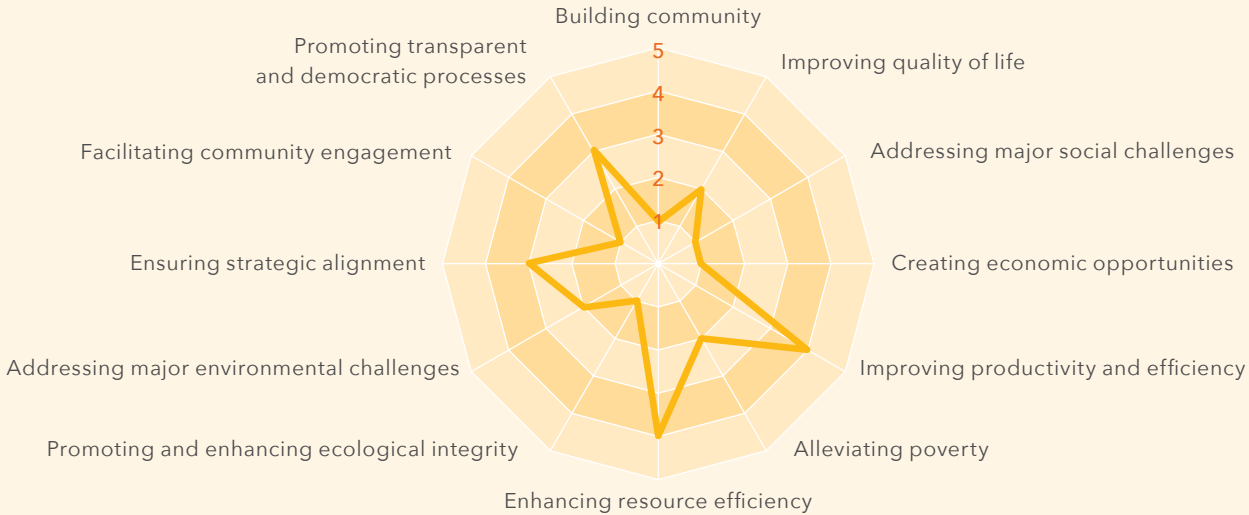
Evaluation

Water meters protect the City’s revenue by measuring the exact amount of water supplied through each connection. This contributes to proper billing and improving the City’s productivity and efficiency.

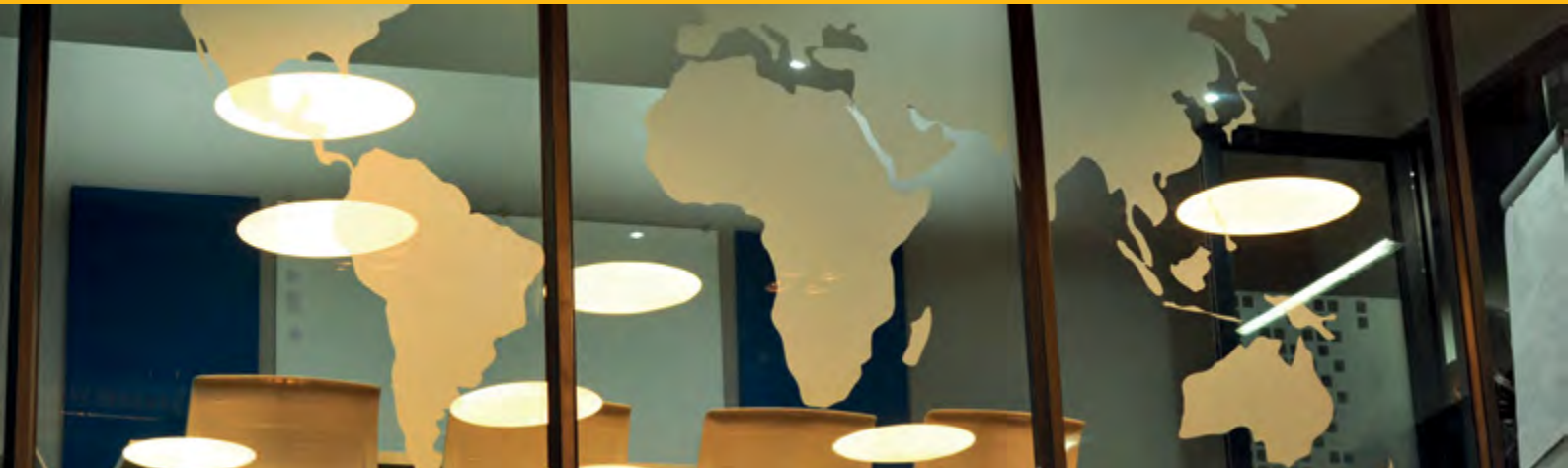
The installation of water management devices at indigent households with high water arrears further helps protect the City’s revenue, while protecting respective households from further debt accumulation.

To demonstrate the responsiveness of this project, water management devices are now being installed to aid water conservation at households with inexplicably high water consumption levels thereby contributing to the city’s water savings. ●

Sustainability assessment: Improved water metering



Project 22: Invest Cape Town



Problem statement

Cape Town is an internationally renowned lifestyle and tourism destination. Although the city is increasingly regarded as an attractive emerging-market investment destination, more work needs to be done.

For Cape Town to reach its potential as a competitive business city, it needs to develop a strong identity as a forward-looking, globally competitive business city. The challenge is to make use of the city’s tourism successes to grow its investment offering.

Project outline

Invest Cape Town is a collaborative initiative intended to tell an authentic story about Cape Town as a business destination. The essence of this narrative is that Cape Town is a functional African hub where ideas come to life through the energy and ambition of its people.

In order to effectively link international business and partners to new insights, opportunities and solutions, Invest Cape Town is founded on the principles of collaboration, enablement and promotion.

Project design

Invest Cape Town is the beginning of a process to develop a business brand narrative that emphasises the distinguishing characteristics of the city-region. It focuses on crafting an authentic narrative about what Cape Town stands for as an investment destination, leveraging on the beauty and lifestyle of the destination.

In order to tell compelling stories and promote the city’s competitive advantages, various engagement platforms and collateral have been developed. These include social media, a website and media clips. This collateral

material was developed with targeted sectors in mind to drive impact. To further strengthen the brand narrative, promotional media clips hinge on endorsements from key people working across a range of service sectors in the city.

Project implementation

Since the launch of the initiative in November 2016, the project team has engaged with 15 start-ups and developed 17 business success stories, which are available online. Through this engagement process, the City has triggered unofficial brand ambassadors who tell others about their experiences and aid marketing efforts. Furthermore, engagement with investors has revealed intelligence that can be used to highlight business-related bottlenecks to other line functions or tiers of government.

Over the next five years, the City plans to develop this business narrative and corresponding collateral in order to make Cape Town globally competitive. So far, the marketing material developed includes an investment video produced in at least five languages, information technology and business process outsourcing (BPO) sector digital brochures, a suite of print adverts, as well as branding in the international arrival and departure halls at the Cape Town International Airport.

To date, the city has welcomed various business sectors such as global call centres, digi-tech, manufacturing, as well as clothing and textile sectors. All of these contribute to investment and employment opportunities.

Evaluation

Invest Cape Town makes the case for Cape Town as a competitive investment and business destination. This is important for local businesses and residents, as well as South Africa, since cities contribute disproportionately to national income and employment creation.

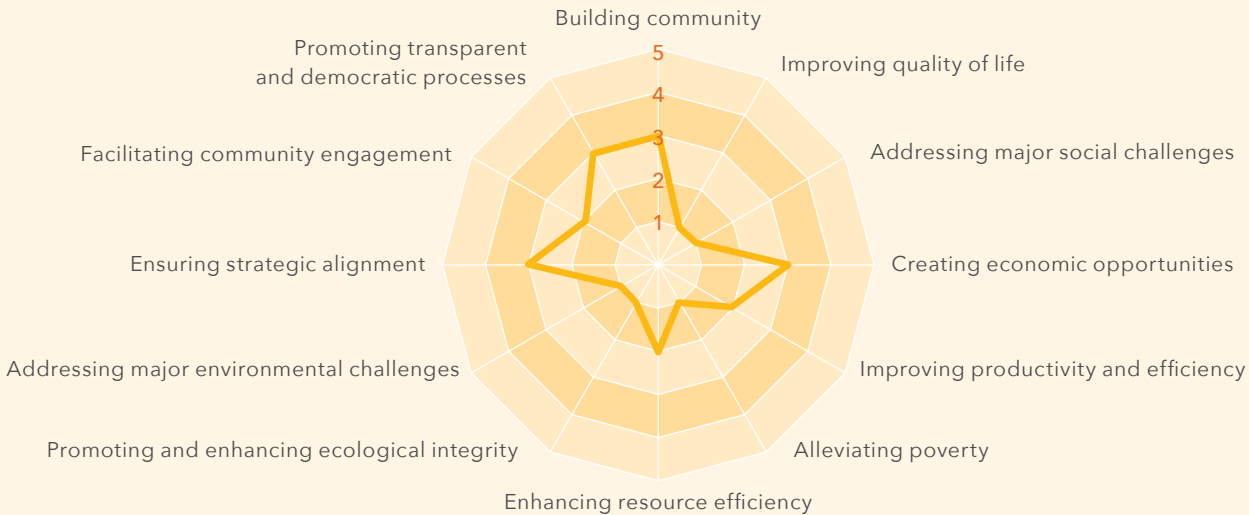
Although Invest Cape Town is not designed for SMMEs, it provides a platform for SMMEs to connect with international corporations that are looking to make investments in the city. This contributes to creating economic opportunities.

Importantly, Invest Cape Town recognises that branding is not a standalone tool. Rather, it is a coordinated activity to

attract targeted audiences. As a result, the initiative involves engagement with line functions such as Events, Tourism, Transport and Energy to promote the City’s collective offering. This demonstrates the initiative’s scope to grow in developing a sustainable and inclusive business brand for Cape Town. Similarly, by promoting collaboration with the business community and forming partnerships, this project contributes to the development of a business community identity.

At the time of the interview, the initiative had been running for five months. As the narrative grows and Cape Town competes for new business on a global scale, Invest Cape Town will be upscaled. ●

Sustainability assessment: Invest Cape Town



Project 23: Treated effluent re-use



Water resilience

Green bond

Problem statement

Water Service Authorities in South Africa currently face a challenge with sustainable supply of sufficient quantities of good quality potable water to the population. To address water shortages, it is increasingly important to investigate alternative sources of water, which include treating wastewater.

For Cape Town, treated effluent re-use offers the opportunity to reduce industrial potable water consumption by up to 50%. Although a number of wastewater treatment works have been treating effluent for re-use, this process was only

recently formalised to cater for various industrial users. To guide the expansion of the treated effluent network, the City developed a treated effluent re-use master plan.

Project outline

The City identified recycling of treated effluent as the most feasible option of alternative resources to conventional surface water resources. The extent of existing re-use, potential for expansion and level of service was unknown due to the age of some of the networks and a lack of measurement equipment and control functions.

The use of treated effluent is a means to save water and serves as a key component of the City’s strategy to ensure that Cape Town, a water-scarce region, has a secure water supply for the foreseeable future.

Project design

In Cape Town, recycled water is not used as drinking water. As a result, the treated effluent network has to be kept completely separate from potable water system to prevent contamination. To avoid cross-coupling the piping, the piping used for effluent is markedly different – orange in colour – from the piping used for drinking water. Additionally, there are differences in the type of material and construction used. To prevent mixing, backflow preventers are installed on sites that have feeds from both the treated effluent and potable water supply.

Treated effluent can be supplied to consumers by connecting to the treated effluent pipe network, by hiring a metered treated effluent standpipe or by collecting it directly from the wastewater treatment works.

Project implementation

The use of treated effluent is a key component of the City’s strategy to ensure that Cape Town has a secure water supply for the foreseeable future. The City has 27 wastewater treatment plants, nine of which have the facilities to extract treated wastewater before it is released into the rivers, wetlands and sea. This treated wastewater is further cleaned to produce treated effluent and then transported to the customer for irrigation. Of the potable water consumed, ± 70% ends up at wastewater treatment works. Up to 16% of the wastewater treated is further filtered and reused for non-potable purposes eg. irrigation, sewer pipeline flushing, cleaning of stormwater drains, industrial and construction activities and toilet flushing in business parks such as the Aurecon head office in Canal Walk.

During the 2015/16 Water and Sanitation Water Demand Management and Strategy

review, the City was supplying treated effluent to over 99 users. Users included schools, sports clubs, golf courses, farms, factories and commercial developments with large water features. The City also uses this water for irrigating its own parks. Furthermore, a treated effluent reticulation network is in place to convey this water to customers in certain parts of the city.

Given the uptake of the service, the City is looking to expand the treated effluent reticulation network to other areas of the city, with the Athlone, Bellville and Macassar areas being most likely to benefit, as there is a larger demand in these areas, as well as, in most cases, fewer infrastructure requirements.

Evaluation

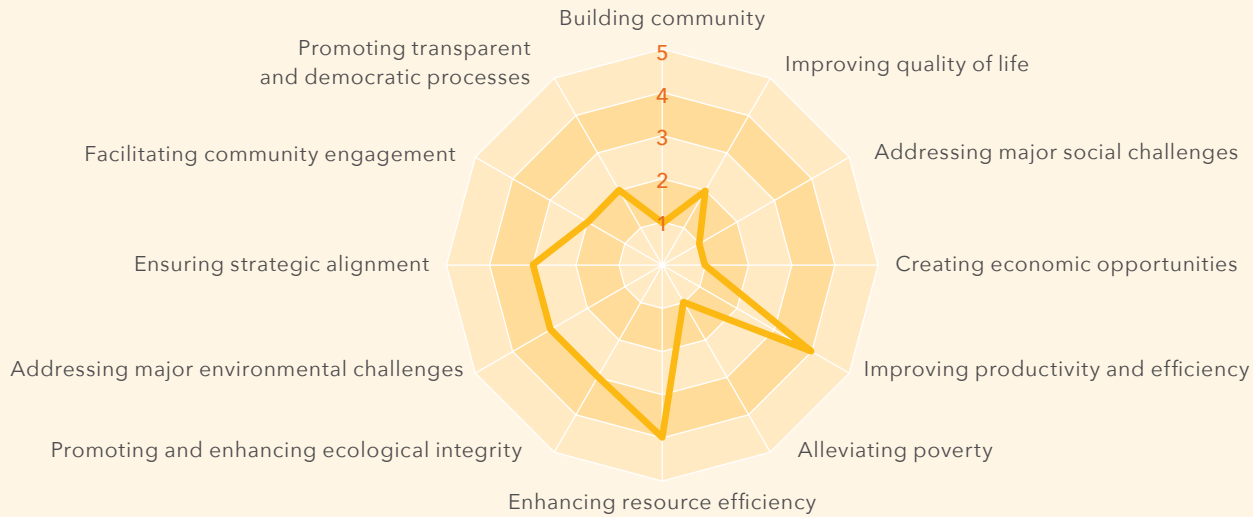
Using treated effluent is 50% cheaper than drinking water, which contributes to removing barriers to service delivery. However, due to this tariff difference,

a balance between potable water and treated effluent needs to be carefully maintained as this has implications for the City’s revenue stream.

Community engagement has not been intentionally facilitated. Currently, potential users, identified in the master plan, are given an information flyer about the treated effluent re-use but the connection to the network remains optional. Those who are interested complete an online application form.

Although still in the early stages, this project has significant potential. By using alternative water sources, the City can rely less on drinking water for non-drinking needs (e.g. irrigating landscaping, flushing toilets, etc.). As a result of reduced water demand and re-use of water, promoting the use of treated effluent enhances resource efficiency very well. ●

Sustainability assessment: Treated effluent re-use



Project 24: Western Cape Industrial Symbiosis Programme



★ Silver star rating

Game changer

Problem statement

Studies show that the Western Cape’s current consumption patterns exceed natural resource limits. About 80% of the waste generated in the Western Cape goes to landfills compared with less than 20% in best practice regions. This demonstrates a lack of resource efficiency and missed opportunities to use materials productively for as long as possible before disposal.

Industrial waste presents a significant opportunity for diversion from landfills as it occurs in large volumes, is centralised in urban areas and is typically clean and segregated waste. Although the recycling sector is well established, there

is an evident need to provide support to industrial waste generators to improve waste management.

Project outline

The Western Cape Industrial Symbiosis Programme (WISP) is a free facilitation service that connects companies within the City of Cape Town so that the underutilised or discarded resources of one company can be used by another.

WISP, delivered by GreenCape and funded by the City, creates a platform for a broad range of industries and companies of different sizes to explore potential synergies that may result in increased profitability and sustainability.

Project design

GreenCape partnered with International Synergies Limited, based in the United Kingdom (UK) and a world leader in facilitated industrial symbiosis programmes, to develop an industrial

symbiosis programme that was built on the success of the UK National Industrial Symbiosis Programme but adapted to suit the South African context.

GreenCape facilitates the exchange of information between businesses through business opportunity workshops, site visits and meetings. The business opportunity workshops bring together waste generators (manufacturing companies) and waste technology and service providers (recyclers, waste management companies, etc.) to rapidly identify potential synergies between companies. Furthermore, all the underutilised resources identified through business opportunity workshops, site visits and meetings are captured on an online database called SYNERGie™.

Project implementation

This industrial symbiosis programme targets a wide range of manufacturers and service providers, including large

international companies and local SMMEs, across as many industries as possible. The diversity of the network helps to identify potential synergies, as synergies are often found outside of the industry where the underutilised resource is identified. For example, paper sludge from the pulp and paper industry is used in clay brick manufacturing.

In some cases, the waste identified is best suited for re-use rather than recycling or as an input into a manufacturing process (e.g. furniture, sample socks, fabric offcuts). If the waste presents an opportunity for a community organisation, GreenCape facilitates the connection between the manufacturer and civil organisation.

A synergy report is compiled for each industrial symbiosis resource exchange facilitated by GreenCape. From this

information, details of the impact of WISP in terms of environmental, social and economic criteria are readily available. Since 2013, 490 member companies have collectively diverted over 26 300 tonnes of waste from landfill, resulting in R16,8 million of cost savings, additional revenue of R19,2 million and the creation of 123 economy-wide jobs.

The overall performance of WISP is monitored via these six performance indicators: revenue created, cost savings, private investment attracted, waste diversion, carbon emission decreases and job creation.

Evaluation

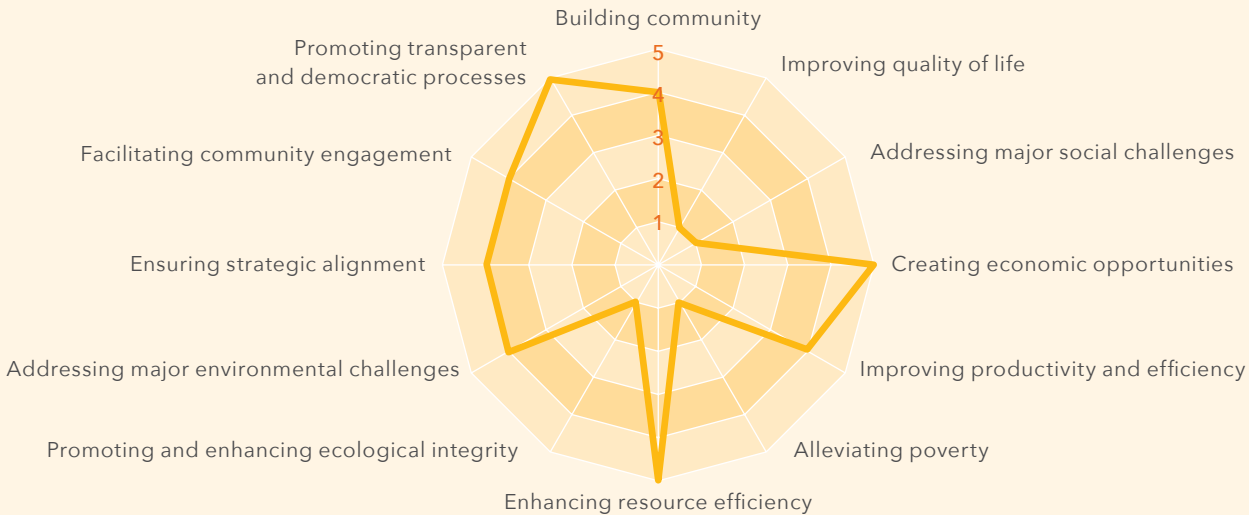
Waste management is one of the City’s core mandates. WISP contributes to reducing waste and pollution by diverting waste from landfills. Similarly,

finding ways in which waste can become valuable and used as an input other processes demonstrates excellent resource efficiency.

Through creative collaboration, WISP excellently ensures responsiveness to business needs in varying contexts. By facilitating resource exchanges, GreenCape gives businesses additional capacity and support to rethink waste and resource streams, effectively supporting the creation and development of enterprises.

GreenCape is flexible and tries to continuously expand the network and capacity to facilitate industrial symbiosis. The project team is also exploring ways to engage more sectors where there are gaps and potential markets linked to industrial symbiosis. ●

Sustainability assessment: Western Cape Industrial Symbiosis Programme



Project 25: Women at Work programme



Problem statement

The participation of women in the economy remains critical to fighting gender inequality in our country. To achieve gender parity, significant cultural and mindset shifts need to take place.

Women are generally under-represented in several key areas of the transport sector. At the manual labourer level, women only constitute 3,4% of the Transport and Urban Development Authority (TDA). This requires transitioning women into male-dominated environments through pervasive training and change management support programmes.

Project outline

TDA aims to create a critical mass of competent, empowered women maintenance teams at all 22 City depots while challenging the cultural stereotype of what constitutes male and female work.

A total of ten women-only road repair teams have successfully been established since 2015 to address the lack of gender representation at City depots. This has also involved the development of acceptable working conditions for female employees through the provision of female facilities such as showers, lockers, toilets, etc.

The programme seeks to create an environment for women to enjoy economic inclusion by supporting skills development initiatives in high growth sectors to create the skills base necessary for a growing economy. It also addresses the issue of low participation by women in the transport industry in general.

Project design

The women empowerment programme was developed to address gender inequality and to promote acceptable

working conditions for female employees in what was once a predominantly male environment.

Unemployed women from surrounding communities are recruited through the respective subcouncil. Successful recruits for the programme are employed through the EPWP. Once employment contracts are signed, the teams start with the most basic tasks while receiving on-the-job training from their assigned supervisor.

For the duration of their contract, employees are given technical training in safety at roadworks sites, small plant operation and fixing potholes in order to undertake road repairs effectively. Simultaneously, women are upskilled with diversity training; interview skills, as well as career guidance to aid career progression.

To facilitate transition in the sector, supportive components of each aspect of the human resources value chain, such as selection and recruitment, on-boarding training performance management and career development is necessary.

Project implementation

Although there was initial resistance from some male managers and workers to commit and support the project, the latest feedback from depots are of camaraderie and acceptance that women are also capable of efficiently completing quality work.

Four of the ten women-only road repair teams (Ndabeni, Fish Hoek, Heideveld and Kuils River) have since

been appointed permanently. With the prospect of permanent employment at hand, this optimises staff productivity and motivation.

The programme has also received accolades by means of several awards and certificates recognising its contribution to employment equity and innovative women training programmes.

Evaluation

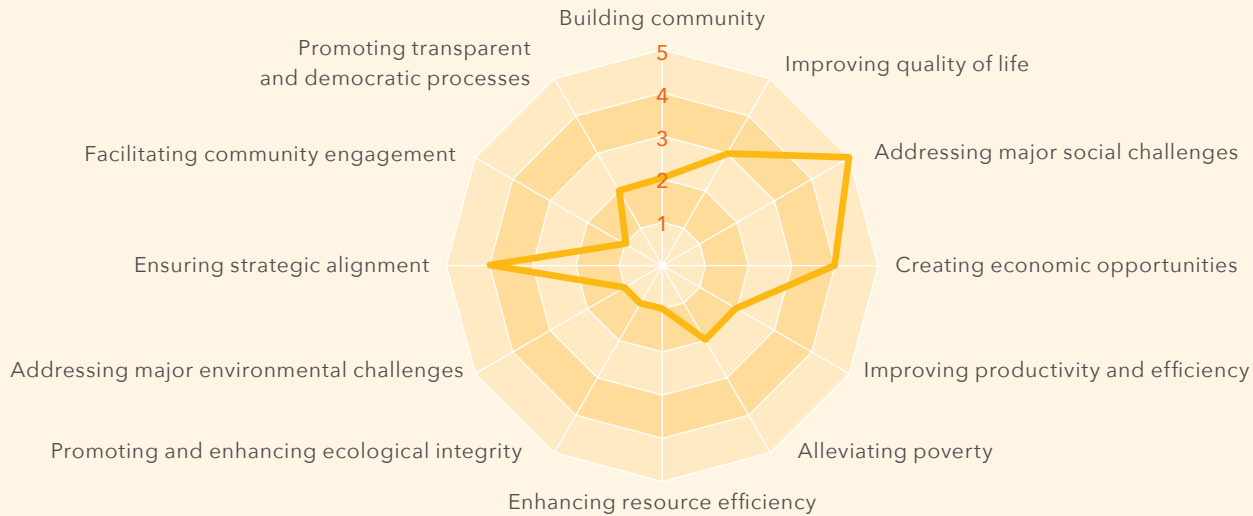
The programme excellently addresses social challenges by addressing discrimination against women in the working environment and public perceptions. This is further facilitated through informal awareness-raising

programmes to gain the support of male staff for the programme.

Furthermore, this programme gives women with minimum education and skills the opportunity to develop their education and training in order to increase their employability in the job market. Although some women have been permanently employed by the City, the expectations of teams need to be carefully managed as funding to create these vacancies is limited.

This approach to addressing gender inequality could be applied to other sectors or line functions in the City and could be encouraged in contract agreements with the City's vendors. ●

Sustainability assessment: Women at Work programme





Ecological portfolio

These projects are directly linked to the capacity of the biosphere to meet the needs of current and future generations. By using natural resources responsibly in the short term, the projects ensure these are available in the long term. These projects are primarily focused on empowering people and organisations to carry out their activities and obligations in an ecologically sustainable manner.

Project 26: Construction of Delft Early Childhood Development Centre



★ Silver star rating

Problem statement

The stark reality is that there is a huge demand for childcare services. Although the City is committed to giving as many children as possible access to a quality early learning platform, traditional construction methods result in high resource consumption and generated waste.

Given the critical role of the construction industry in the delivery of social infrastructure, the Presidential Infrastructure Coordinating Commission (PICC) Council resolved to use innovative building materials (IBTs) for social

infrastructure buildings. IBTs are broadly defined as unconventional building materials not covered by the national building standards.

In 2013, PICC set out to construct 60% of South Africa’s schools, early childhood centres, clinics and student residences by 2017. However, there are currently few examples of the successful adoption of advanced and innovative technologies.

Project outline

The Delft ECD Centre features a number of unconventional design and construction features that resulted in a cost saving of approximately 30%. The building focused heavily on the re-use of materials, and nearly 1 500 m² of pavers were reclaimed

from a demolition site for re-use at the ECD. Furthermore, recast stormwater drainpipes were used as windows.

The considered design of the Delft ECD exemplifies the integrated alternative and unconventional building methods for the construction of a public building – one that will make an essential contribution to the development of Cape Town’s youngest residents.

Project design

The bulk of the building was divided into three individual rectangular blocks, which run diagonally in formation across the site. Each caters for a different age group, namely infants, toddlers and pre-schoolers.

Both natural methods and recycled waste materials were used to construct the ECD. Approximately 4 600 eco-bricks were needed for the construction of the internal walls and for artwork. Similarly, more than 4 800 tyres and see-through palisade fencing were used to build boundary walls along the perimeter of the site for safety purposes.

A grassed play area occupies about a third of the site, while the southern corner comprises a large food garden that will provide nutritious meals for the children and an opportunity to learn about permaculture. Rainwater tanks will provide irrigation for the garden.

Project implementation

The vacant block of land used for this project was previously used as a waste dump. Discarded glass bottles were used

along with eco-bricks to create internal artwork panels between the classrooms, which also have acoustic properties.

Construction of the ECD required extensive manual labour. To meet this need, local labour was employed through the EPWP and trained in green building methods.

Due to current water restrictions, 80% of the planned project landscaping was substituted by artificial grass in some areas. Additionally, rainwater tanks and a well point were installed to provide irrigating water for the natural grass area and the food garden.

Evaluation

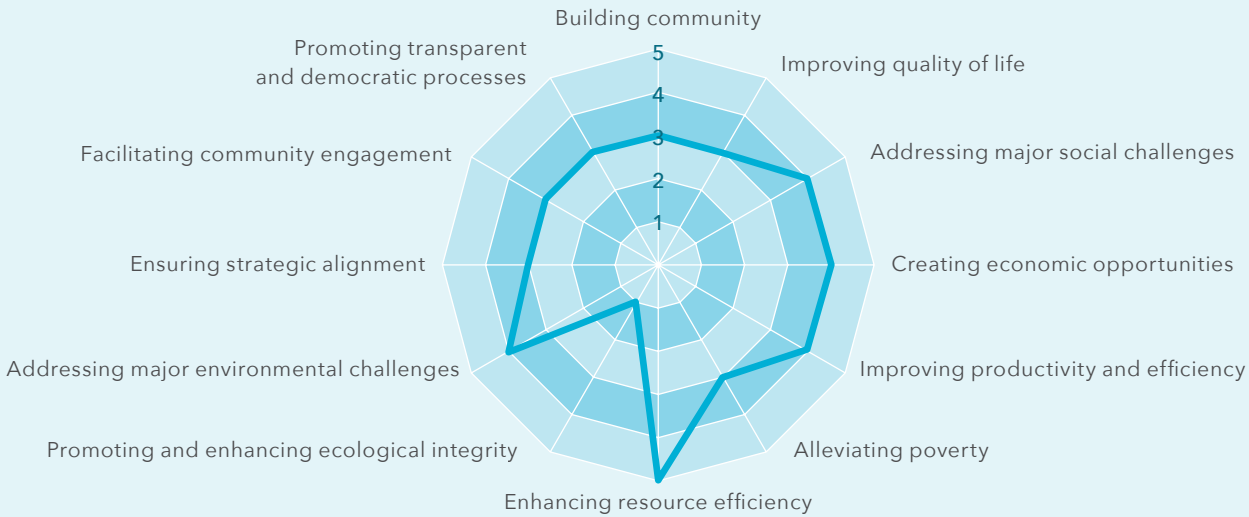
The construction of the Delft ECD demonstrates a more sustainable approach to construction by using

materials such as tyres, glass bottles and compressed mud bricks. As a result, this project scores excellently for resource efficiency and very well for addressing major environmental challenges.

Community buy-in was essential for the success of this project. In addition to engaging with the community around the design and building materials, the community participated in the collection of waste material for use in construction.

To improve productivity and efficiency, the project team used partnership expertise to design this green building and train the labour force. However, acquiring approval for alternative building material use was a challenge. This is an area that requires significant change in institutional resistance to innovation. ●

Sustainability assessment: Construction of Delft ECD Centre



Project 27: Dassenberg Coastal Catchment Partnership



★ Gold star rating

Problem statement

The Dassenberg Coastal Catchment Partnership (DCCP) conservation area was highlighted as a priority in the Western Cape’s Provincial Protected Area Expansion Strategy because of its extremely high biodiversity value. The area has also been identified as one of the most important climate change mitigation corridors in the Western Cape. In addition to the need for urgent action to prevent the loss of irreplaceable biodiversity, this area is critical for Cape Town’s water security as it contains the Witzands aquifer protection zone.

Given the socio-economic challenges in Atlantis, the City is facilitating industrial development to stimulate economic growth and create employment opportunities. However, there are threatened vegetation remnants and

species within the urban edge of Atlantis. In order to promote sustainable development, the City needed to find a way to avoid, minimise and remedy the disturbance of ecosystems and loss of biodiversity remnants in the area.

Project outline

The DCCP began as a partnership initiative between CapeNature, TMF, the Wilderness Trust and the City to create a viable ecological link between Dassenberg Hills and the coast. This partnership aims to protect critical ecological infrastructure, unlock socio-economic opportunities, promote climate change adaptation and mitigation, and promote the natural and cultural heritage of the area.

One of the tools to achieve this is the proactive acquisition of critical biodiversity land outside the urban edge for conservation. This land is used as a

land bank to offset biodiversity loss in the urban edge when developments occur.

Project design

There are a large number of stakeholders and interested and affected parties. These include partnering conservation organisations, landowners and communities, as well as people using the land for harvesting and farming, and recreational users. Industries and other developments within Atlantis are also benefiting due to the land bank. External funding from the Global Environmental Facility was recently obtained, which has been used to appoint a project coordinator who is based within CapeNature.

EPWP workers have been clearing alien vegetation within the area. Simultaneously, communities have been encouraged to develop plans and use opportunities associated with the DCCP, such as tourism and the film industry.

Project implementation

Public ownership of land is paramount to making the DCCP a viable reality. Currently, approximately half (17 500 hectares) of the total DCCP area is considered conserved. Approximately 940 hectares has been acquired for the City’s land banking project. The Nature Conservancy (TNC) has signed a memorandum of understanding with the City to establish a water fund to increase the water security of the Atlantis aquifer.

Since 2012, the conservation partners have created over 97 000 person days on conservation-related activities in the DCCP, spending just over R20 million. While the majority of the jobs created are temporary, permanent work opportunities related to the DCCP reserve and infrastructure management have resulted in a number of permanent

jobs. Furthermore, there is potential to create more jobs by enhancing existing recreation and tourism activities in the area.

Evaluation

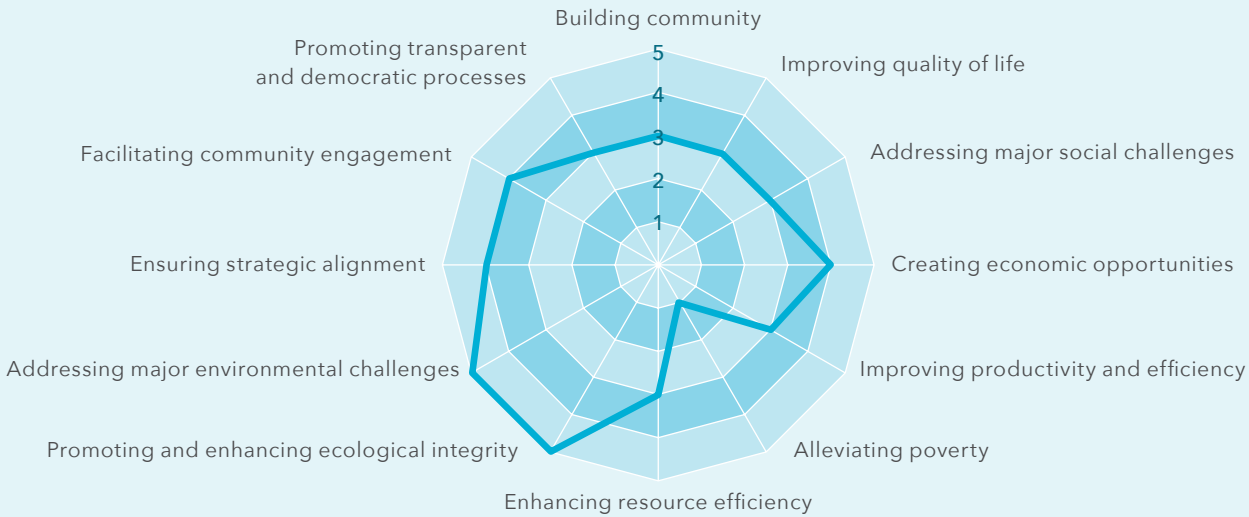
Land banking as a development facilitation tool in the DCCP demonstrates a pragmatic approach to a complex situation within the Atlantis urban edge. By securing high-quality critical biodiversity areas outside the urban edge, the City can facilitate development within the urban edge, at no cost to the developer, while promoting conservation.

The DCCP promotes and enhances ecological integrity by significantly contributing to achieving national conservation targets. This is needed to implement the BioNet (the fine scale

conservation plan for the region). Furthermore, sound ecological management of the Witzands aquifer primary recharge zone supports the conservation of critical ecological infrastructure.

Although it is still early days, the DCCP initiative effectively synergises community involvement, socio-economic development, as well as biodiversity and water conservation. The consolidated land will be of great value to the public as an amenity and used to address major social challenges in the communities by catalysing green economy opportunities, through tourism, conservation and green industries. The construction of the Witzand Mult-purpose Centre has created an important gateway to the dunes and created a hub for DCCP operations. ●

Sustainability assessment: Dassenberg Coastal Catchment Partnership



Project 28: Energy Efficiency Forum



Problem statement

Energy efficiency is critical to attaining a more resilient, lower carbon, resource-efficient and equitable future for Cape Town. This is reflected in the City’s Energy2040 Goal (featured in 2016), which includes a 37% reduction in carbon emissions. Twenty-two per cent of this reduction target can be achieved through energy efficiency alone.

The commercial sector has a pivotal role to play in realising Cape Town’s energy goal since it consumes 44% of the electricity supply in the city and is responsible for 26% of Cape Town’s total carbon emissions. It is, therefore, in the best interest of the environment and economy to help businesses prepare for and become more resilient to future resource constraints by improving their efficiency.

Project outline

In 2009, the City, in partnership with Eskom and the South African Property Owners Association, launched the Energy Efficiency Forum (EE Forum) to assist commercial buildings and operations to improve their energy efficiency. This, in turn, contributes to reducing Cape Town’s overall electricity demand and costs, while lowering the city’s carbon footprint.

The forum provides owners and managers of offices, shopping centres, hotels and other commercial and public buildings with practical knowledge and support to promote energy-efficiency action and investments.

Project design

The EE Forum promotes a responsible commercial sector that will initiate

energy-efficient initiatives to reduce energy costs. Over the years, the EE Forum has built a membership base of over 1 300. These include owners and managers of commercial buildings, energy efficiency-related service providers, policy makers and others. The forum also provides an opportunity for the City to collaborate with businesses and organisations such as the South African National Energy Development Institute, the Green Building Council of South Africa and GreenCape to achieve a more sustainable and secure energy future.

There are usually three main forum meetings per year, which offer case studies, expert views, panel discussions and updates on financing options, innovation, policy and training and advisory opportunities. Additionally,

businesses are invited to present their energy-efficient technology and initiatives. The forum also includes an annual awards programme, market place events and site tours that stimulate continued learning between meetings.

Project implementation

The EE Forum provides an effective platform for networking, partnership and communication. The forum’s responsiveness is evident in the variety of themes that are covered at each meeting. Themes recently addressed include installation of solar PV systems and the status energy storage technology.

At the time of writing, 23 forum meetings had been successfully conducted. Each of these meetings was attended by no less than 200 people. Moreover, 30 to 40% of the attendees at each meeting

were first-time attendees. To align forum content with the expectations of members, a survey is issued at the end of each meeting. In 2016, 97% of survey respondents indicated that they were ‘satisfied’ and ‘very satisfied’ with the respective meetings.

The annual EE Forum Awards were initiated in 2012 to motivate energy efficiency and recognise leadership in the commercial sector. Entrants for the awards are assessed on their commitment to reducing their operational energy needs through behavioural change, as well as technology upgrades.

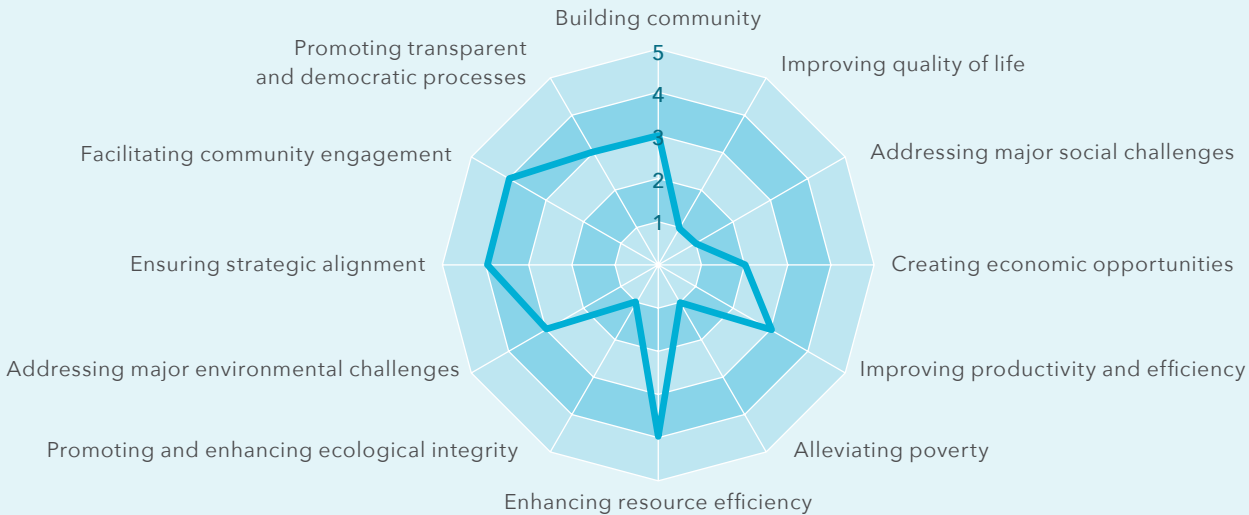
Evaluation

The EE Forum supports the City’s goal to reduce electricity consumption and carbon emissions, thereby promoting resource efficiency very well. By targeting

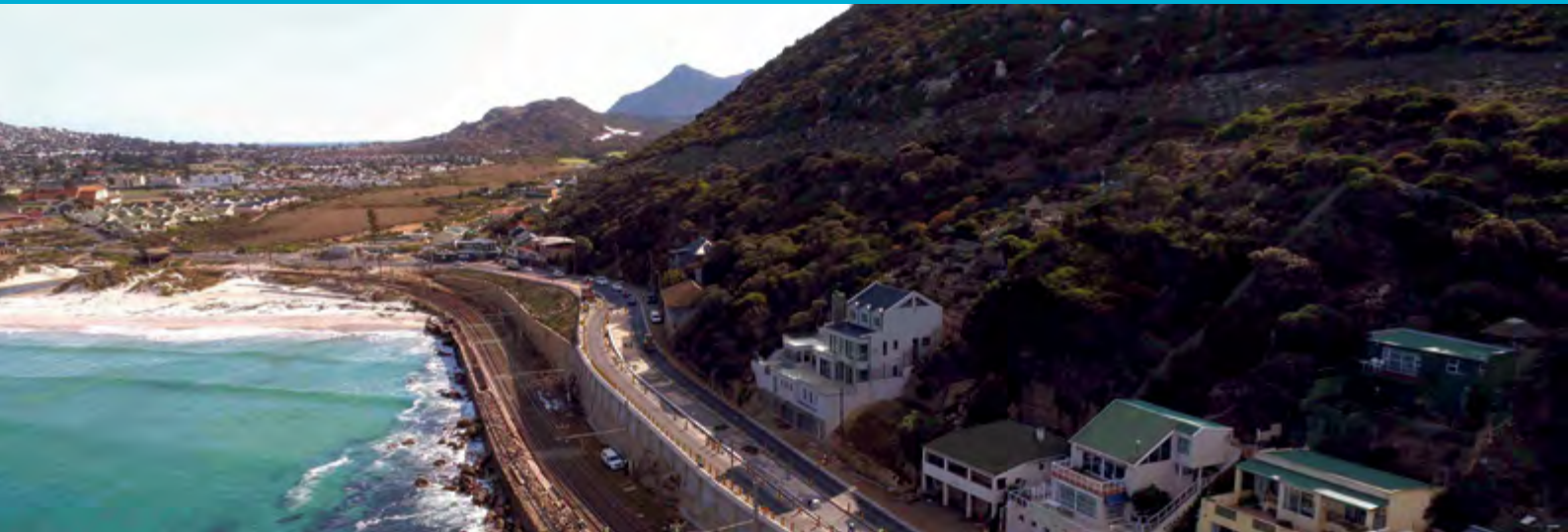
people with decision-making power within organisations, the information provided through the forum aids better, more informed decision making. As a result, the EE Forum facilitates engagement and builds consensus with the business community. To make energy-efficiency knowledge and support accessible, there is no cost associated with participating in forum activities.

At the time of writing, the EE Forum was in the process of transitioning into the ‘Energy, Water and Waste Forum’. This is in response to feedback received from the commercial sector, as well as the increasing need to improve the sector’s resilience and efficient resource use. ●

Sustainability assessment: Energy Efficiency Forum



Project 29: Muizenberg to Clovelly Main Road upgrade



★ Silver star rating

Problem statement

The scenic coastal road between Muizenberg and Clovelly, one of three routes linking the Cape Town metropolitan area with the far south, has been in use for more than 200 years. As a result of carrying approximately 20 000 vehicles per day, the road had deteriorated beyond repair and was at the risk of collapsing.

In addition to the generally poor condition of the road pavement, the underground services were severely degraded and needed urgent replacement.

Project outline

The third and final phase of the Muizenberg to Clovelly Main Road

rehabilitation project included a new road surface, a 450 metre long retaining wall above Clovelly Railway station and replacement of all underground services without causing major disruption to service delivery. The rehabilitation of Main Road sought to rebuild sections of the road and, where possible, improve vertical and horizontal alignment.

Project design

Upgrading infrastructure involved the replacement of a 50-year old water main running under Main Road with a larger modern ductile iron pipe to help secure the water supply of the entire far south. Similarly, the local reticulation main was also in need of replacement, as the old leaded joints had become fragile. The old salt-glazed earthenware sewer pipes, which were over 100 years old, were all

in a poor state of repair and a significant amount of sewage effluent was found to be leaking through the pipe joints and infiltrating the substrata and leaking into the sea.

Since the new large diameter water main was reconstructed from the bottom of York Road and relaid across the parking area, the entire area was rebuilt and landscaped. York Road was constructed in a more pedestrian-friendly manner, providing a safe pedestrian link between Surfers Corner, Main Road, Muizenberg Park and the mountain paths.

Project implementation

Despite the Clovelly stretch of Main Road being adjacent to biodiversity-rich ecosystems, the rebuilding of the road was managed in a manner that minimised

interference with these ecosystems, including ensuring that no waste or rubble from the demolition of the old Clovelly Station ended up in the abutting marine environment. Stone excavated from beneath the reconstructed road to lay pipes was also creatively re-used to improve the aesthetics of the seawall, built to protect rail infrastructure from storm surges, and other retaining walls.

Being part of a significant scenic route and being situated in a Heritage Protection Overlay Zone, the project team sought to preserve the heritage of the area during the upgrades such as the historic granite and sandstone kerbs and views. Additionally, 11 heritage information boards explaining the history of the area were erected to enhance the experience of locals and tourists.

The Main Road rehabilitation has resulted in a significant number of private redevelopments and general improvements in the area. For instance, renovations done to the Muizenberg Park, as part of this project, have resulted in the creation of a citizen-driven initiative, Friends of Muizenberg Park, which now contributes to the park’s upkeep and organises community events at the park.

Evaluation

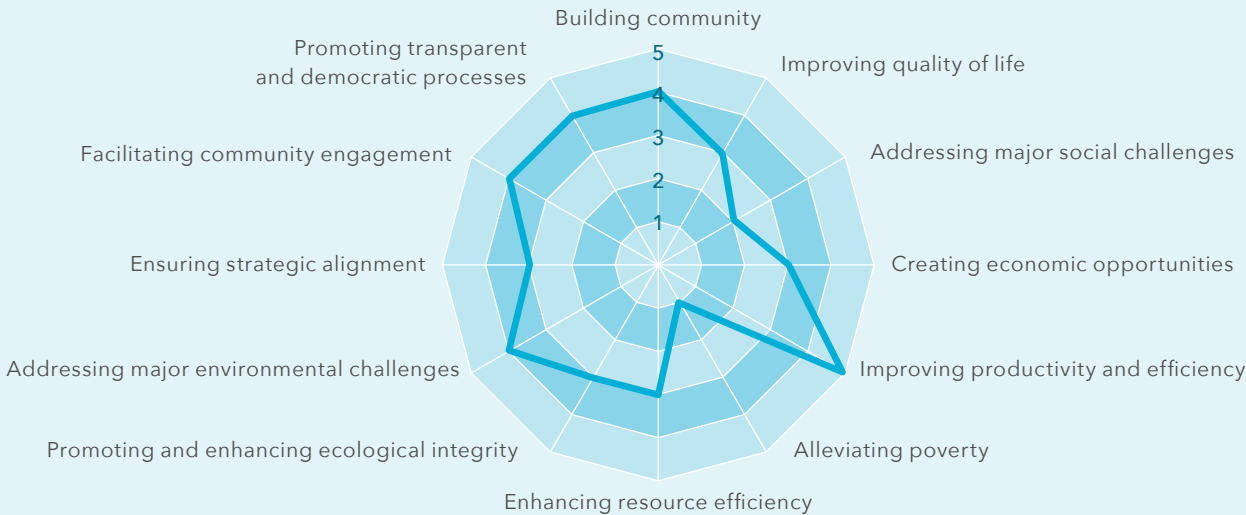
Reconstructing the road and replacing aged infrastructure, although a substantial investment, ensures the safety of road users and access to basic services for residents. It has also significantly improved the landscape quality of the route. Likewise, the heritage interpretation boards add to the experience of both tourists and citizens.

This excellently maximises the City’s return on investment.

This project succeeded in maintaining service delivery and meeting the needs of residents in the South Peninsula, in spite of various constraints. Albeit slow at times, the project allowed traffic to continue flowing throughout the contract despite the major reconstruction work that needed to be done.

By hosting regular public participation and engagements, stakeholders were kept well informed about the project’s progress and given the opportunity to participate in developing and implementing solutions. This contributed very well to facilitating community engagement and promoting transparent processes. ●

Sustainability assessment: Muizenberg to Clovelly Main Road upgrade



Project 30: Restoration of the Old Granary building



Problem statement

The Granary was originally built as a bakery in the early 1800s. Over the years, it has expanded and fulfilled multiple functions including a women’s prison, a grain storage site and, most recently, government offices. In 1997, the Department of Public Works donated the building to the City. This building, however, remained unused for over two decades. Although the building underwent ad hoc repairs and renovations there was no funding available for a full-scale restoration.

Project outline

The complex of buildings on this site are of high cultural, social, architectural and historic significance and form part of the city’s heritage resources, which

must be preserved for current and future generations. An investment in the long-term integrity of the Granary offered the opportunity to leverage an existing, disused asset to benefit the public and the City’s partners. As a public heritage asset, it was important to restore the building externally, while sensitively restoring the interior space.

Project design

Refurbishing an old building comes with many challenges. To preserve the layers of history and architecture, restoration of the Granary has involved restoring some parts and deliberately contrasting old heritage aspects with modern features. For example, maintaining lime plaster on walls and wooden beams, inserting glass

balustrades, a steel lift and a modern glass and steel walkway.

As this is a provincial heritage site, all construction on site needed to be done in a heritage-conscious manner to prevent destruction of any parts of the building. Archaeological excavations were also undertaken during the renovation process. However, nothing of great significance was uncovered.

To inform the restoration process, the City received input from special interest architecture and heritage groups. Similarly, the renovation process was informed by global and local best practices of heritage building restoration.

Project implementation

The Granary has many layers, due to the functional changes and refurbishments that it has undergone over the years, which posed structural and heritage challenges. It therefore took a long time to discover, understand and respond architecturally to the building.

Restoring an existing building rather than constructing a new one promotes efficient use of land. However, it is difficult to modernise and improve the resource efficiency of old buildings. Steps have been taken to improve the Granary’s energy efficiency. The ceilings were insulated and energy-efficient lighting installed. A grey-water recycling system was installed to minimise the building’s water use for the landscaping and water-wise plants were planted.

As part of the effective management of the Granary, the City will be leasing the property to the Desmond and Leah Tutu Legacy Foundation over a 40-year period with full maintenance obligations for the duration of the lease. In addition to providing office space for the Peace and Reconciliation Foundation, a portion of the ground floor section of the building will be used as an exhibition space open to the public.

Evaluation

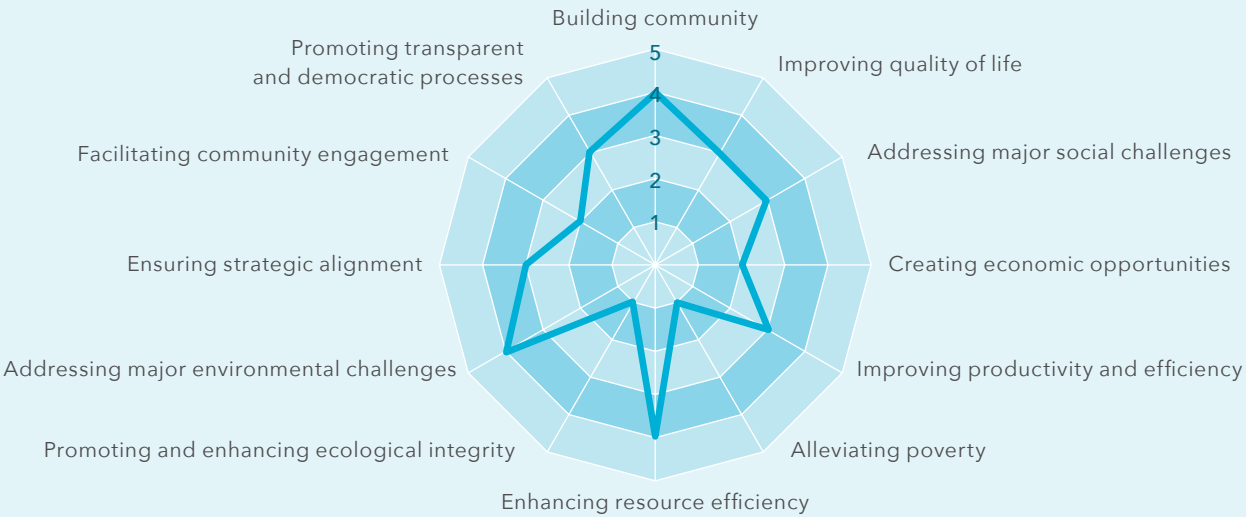
The Granary is one of Cape Town’s oldest buildings. Once restored and operational, members of the public will be able to visit the allotted exhibition space and restaurant, which contributes to improved quality of life and promotes access to the city’s cultural assets. The Granary also acts as a connector between the City Hall and District Six Museum

and contributes to ongoing efforts to improve security and attract visitors to the eastern CBD.

Though built centuries ago, renovations were needed to align the Granary with modern regulations and standards, such as the provision of universal access. Various interventions to promote energy and water efficiency contribute to enhancing resource efficiency.

The sensitive approach to refurbishing the Granary enhances the cultural significance of this public asset and contributes to addressing harmful effects of environmental degradation on heritage resources. Furthermore, restoration of the Granary sets a good precedent for the City to proactively restore and care for its valuable fixed assets. ●

Sustainability assessment: Restoration of the Old Granary building



Project 31: Small-scale embedded generation programme



Game changer

Problem statement

The Energy2040 Goal includes a target to install 120 megawatt small-scale embedded generation (SSEG) over the next five years. If successful, the City will be sourcing 20% of its electricity from renewable energy sources by 2020. This is critical to improving Cape Town’s energy supply, reducing its carbon footprint, building a more robust economy, creating local jobs and keeping money circulating in the local economy.

Project outline

The SSEG programme promotes the uptake of rooftop PV systems and small

wind turbines in the commercial and residential sectors by allowing electricity customers to connect to the City’s electricity grid. The programme also aims to remove barriers to the rooftop PV market through sector development and making PV more attractive to consumers.

SSEG net consumers can connect to the grid and in so doing import energy from and export a limited amount of energy onto the City’s grid, which they are credited for.

Project design

Small-scale generators located within the City’s area of supply who are interested in connecting to the City’s electricity grid are required to gain written approval from the City before connecting to the grid.

The approval process includes getting permission from different line functions, testing of the installation and ensuring that the equipment aligns with the City’s technical standards.

The City developed a set of guidelines for small-scale electricity generators with a generation capacity of less than 1 megavolt-ampere (MVA) for commercial and residential generators. In contrast to large-scale wind farms and solar parks that generate power in the multimegawatt range, most of the electricity generated by an SSEG is consumed directly on site. In the case where more electricity is generated than consumed, a limited amount of power is allowed to flow in reverse – from the consumer back into the local electricity distribution network.

Project implementation

To date, SSEG contracts have been signed with over 80 commercial customers and over 200 residential customers who are able to feed into the City’s grid in a legal and responsible manner. This represents an embedded generation capacity of nine MVA.

In order to reach this point, the City successfully addressed the following issues: the establishment of suitable tariffs, identification of suitable bi-directional metering systems, and the implementation of automated billing systems that take into account both the purchase and sale of electricity.

To address the challenge of limited knowledge about safety and quality of installations in the industry, the City partnered with GreenCape and the

South African Photovoltaic Industry Association (SAPVIA) to develop a training programme for PV installers. Similarly, the City has developed a useful end-user reference guide for ‘safe and legal’ installation of rooftop PV systems for the commercial and residential sectors. This guide is readily available online and helps customers make informed decisions about PV systems.

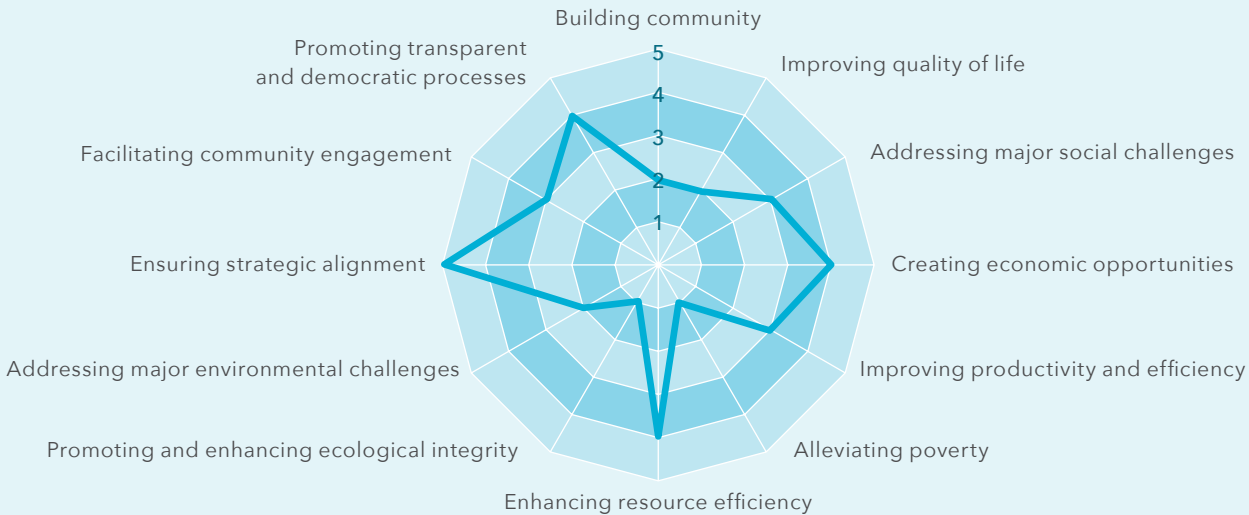
Evaluation

The SSEG programme is far from a business-as-usual project and demonstrates the City’s proactive yet conservative approach to energy security. Although the SSEG programme was established in the absence of national legislation, the lessons learnt are being incorporated into the drafting of national legislation and promote transparent processes very well.

In order to achieve its energy targets, the City requires energy-efficient technology, the uptake of PV systems, as well as a change in consumer behaviour. The latter will require increased engagement with the residential and commercial sectors. Feedback received from small-scale generators in the Cape Town area is used to modify the programme where possible to better respond to customer needs.

SSEG allows electricity consumers to generate their own electricity and use the City’s grid as a storage battery. In so doing, the programme removes barriers to the rooftop PV market. Moreover, by facilitating skills development and training, the programme contributes to creating economic opportunities and stimulating development of the green economy. ●

Sustainability assessment: Small-scale embedded generation programme



Project 32: Using non-potable water in the Company's Garden



Water resilience



Problem statement

The Company's Garden, originally a food garden for the Dutch-period Vereenigde Oostindische Compagnie (VOC), is one of Cape Town's green lungs. In addition to its recreational and aesthetic value, the Garden serves as an urban stepping stone for small animals and also provides a range of ecosystem services, such as heat-island mitigation and water attenuation.

Despite undergoing several functional changes over the centuries, the connection of the Company's Garden to water has always remained a

common thread. Keeping the Garden lush, however, requires 160 000 litres of water per day during irrigation season (September to April). With Cape Town's growing population and pressing concerns about water security, maintaining this recreational garden poses serious challenges.

Project outline

The Company's Garden was originally irrigated through channelled spring water flowing from Table Mountain, but with the advent of tap water, potable water was used and spring water was redirected into the sea.

In order to contribute to Cape Town's potable water savings initiatives and

the need to preserve the Garden as a recreational space for Capetonians and tourists alike, this project reconnects the Garden's irrigation system to spring water sourced from the Vineyard Spring. This is the very same water source that originally irrigated the fruit and vegetable supplies of the VOC 360 years ago.

Project design

In 2010, the irrigation system in the upper portion of the Garden was connected to the spring-water main supply line as a means of reducing potable water consumption. Following this success, the middle section of the Garden, Delville Wood Memorial Garden, was connected to the spring-water main line in Queen Victoria Street.

The connection of the lower garden to the spring-water mains also affords the opportunity to replace the aged irrigation system (which includes asbestos pipes) with a more modern and efficient irrigation system. This new irrigation system can be remotely controlled, thereby allowing for irrigation at night and has considerable labour-saving effects.

Project implementation

The Company's Garden is home to over 900 valuable plant types and it attracts about 550 000 visitors a year. Connecting the Company's Garden to a non-potable water source allows for uninterrupted irrigation during a severe drought period, ensuring maintenance of this popular heritage site and the survival of valuable plantings. Importantly, the water

previously required for irrigation is now water savings.

Access to irrigation water also provides the opportunity to plant alternative sections of the Garden to further improve the quality of the green space. To further enhance water efficiency, plans are underway to plant species with similar water requirements together.

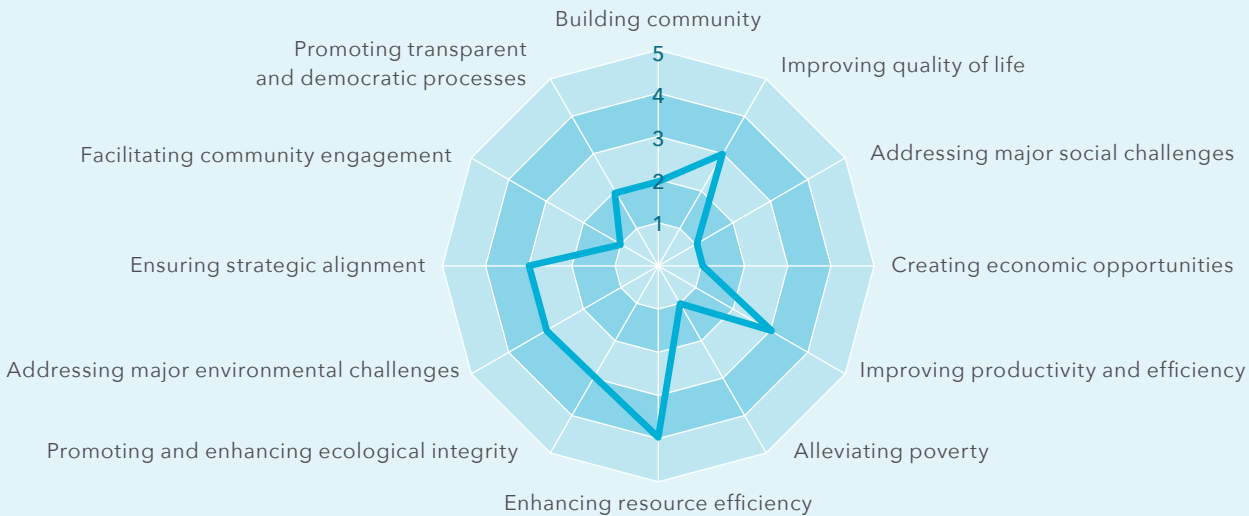
Evaluation

Connecting the Company's Garden to a non-potable source of water recalls the origins of the Garden and so preserves the city's natural heritage, while responding to the modern pressures of water scarcity. This effectively addresses the challenge at hand, while creating awareness about water management and helping communities distinguish potable from non-potable water.

In addition to its historical significance, use of a non-potable water source to irrigate the Garden demonstrates resource efficiency very well. Similarly, having a reliable supply of water improves the resilience to future droughts and helps ensure the conservation of this unique cultural landscape and a sense of place. This use of an alternative water resource expands the City's water supply and satisfactorily addresses major environmental challenges.

The Company's Garden plays an important role in keeping people connected to green space and improving quality of life. Given its attractiveness and accessibility, there is potential for this project to engage the broader community and facilitate public comment on the improvement of the Garden through the existing QR codes (featured in the 2014 edition), for instance. ●

Sustainability assessment: Using non-potable water in the Company's Garden



Urban sustainability is all about change – changing the ways in which we think about urban issues and changing the ways in which people and institutions behave.

A resilient approach to urban sustainability

A case for resilience

Over the past few decades, sustainability has become a guiding principle and goal for social development and economic growth. Unfortunately, cities across the globe are facing an ever-increasing variety of challenges that seem to make more sustainable urban futures challenging to grasp.³

The City was selected to participate in the 100 Resilient Cities programme, which aims to help cities become more resilient to physical, social and economic challenges.

Given that sustainability is dependent on the ability of a system to maintain a desired state of function over time⁴, it is interlinked with resilience. Urban sustainability is reliant on both the state of the system, as well as the attributes of the system that allow it to adapt to changes and absorb stresses. The City's Climate Change Policy (2017) defines resilience as:

[T]he capacity of social, economic, and environmental systems to cope with a hazardous event or trend or disturbance, responding or reorganising in ways that maintain their essential function, identity, and structure, while also maintaining the capacity for adaptation, learning, and transformation.

As a result, the City views urban resilience as a core factor in achieving its strategic objectives of building a safe, caring,

opportunity, inclusive and well-run city (IDP, 2017). Moreover, the City is committed to building resilience to urban challenges that leave households vulnerable to social, environmental and economic shocks and stresses.

However, building a city that can absorb and adapt to shocks and stresses is a complex, multifaceted challenge for urban sustainability planning and design. This process calls for a new culture of innovation, monitoring and assessment of plans and implementation.

City water resilience

Since 2015, Cape Town grappled with its worst drought in 100 years following three consecutive years of below-average rainfall. Climate scientists also project that droughts like this one will become more likely in years to come as a result of global climate change.

Although climate change is only one of the factors that contributed to the current drought, a critical challenge for cities, including Cape Town, is the need to design for social and physical resilience against the impacts of both climate change and increasing urbanisation, particularly with regard to sustainable urban water management and the conservation of water resources.

The drought that Cape Town faced exposed the historically compartmentalised approach to urban water management as highly unsuitable to address current and future sustainability issues. The City has responded to this realisation by adopting a new scenario called the New Normal

– no longer relying solely on rainwater to fill dams, but seeking a fundamental change in Capetonians' relationship with water. The New Normal also means changing the thinking and methodology of planning with regard to urban water resilience.

The need for sustainability thinking in the current crisis

This mental shift demonstrates sustainability thinking, the capacity to engage effectively with environmental, social and economic change and challenges in the contemporary world, and an increasingly important mindset in light of climate change and the future uncertainties it brings about.

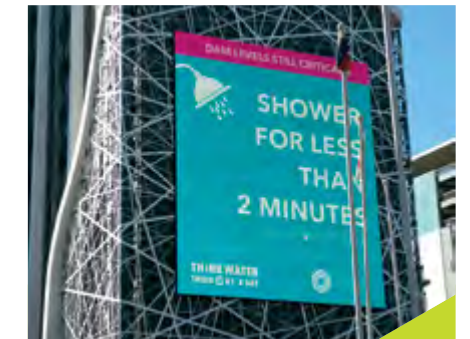
To reduce demand and bring online alternative sources to augment water supplies, the City has developed a range of measures to improve water resilience and sustainability. This issue of the Mayor's Portfolio aligns with these plans by showcasing projects that enhance water resilience by alleviating water scarcity through the provision of alternative sources of water, as well as the management of water demand across the city. These projects, though a sample and relatively small in comparison to the full set of projects that form part of the City's water augmentation plan, exemplify the link between resilience and urban sustainability. Each of these projects contributes to a more water-sensitive city, while promoting social, economic and ecological sustainability, as well as good governance.

Sustainability principles applied broadly to resource management

The importance of resilience, however, is not limited to water resources. Like urban sustainability, resilience, as a guiding principle, must be institutionalised across the City and incorporated into its strategic, planning and decision-making mechanisms (IDP, 2017). To this end, the Environmental Strategy stresses the need to make decisions, implement service delivery, and operate and plan for the future with a focus on resilience. Adopting this principle will enable the city to withstand and mitigate natural and human-induced environmental hazards, proactively reduce Cape Town's vulnerability and protect the local economy. ●

³ Childers et al., 2014

⁴ United Nations Division for Sustainable Development, 2005



Water conservation awareness provides citizens with information and encouragement to respond in their own capacity and do what they can to mitigate the effects of water scarcity.



Conversations that count

Guest column by Peter Willis

A city's government exists to solve problems of day-to-day existence that individual households and businesses cannot solve. If we were able, using our own efforts, to secure all our needs for shelter, food, water, energy, mobility, safety, etc., while enjoying peaceful relations with all our neighbours, why go to the trouble and expense of setting up and maintaining a city government? Two main reasons: all through human history we've shown that we want to live together in larger and larger groups, and those of us who choose to live in Cape Town have decided, for whatever reasons, that living alongside 4 million other people is preferable to doing it alone. Group size always brings greater complexity, so ensuring water supply for Cape Town is unimaginably more complex than it was for the original inhabitants or indeed for Jan van Riebeeck's men when they arrived.

With that complexity comes specialisation of skills. I know how to get water from a stream, dam or well, but I haven't a clue how to set up a pumping station and pipe water round my suburb. I've devoted my working life to becoming skilled in other areas, so I absolutely need specialists to take care of needs that my ancestors would have met by their own efforts; and this gives me the

time to get on with my own life, work and development. All I need do is pay my rates.

But while every municipality in Africa, from our own metropolis to the most rural, has to focus on delivering these basic services, what distinguishes the better ones is that they understand they must look ahead. Delivering what was delivered last year, they run the risk of being caught short when conditions change. The City of Cape Town has, in my limited experience and humble opinion, a culture of attending to the city's main risks and thinking ahead about how to manage and reduce them. I suspect it is not uniform or as robust a culture as it could be, but it is definitely present.

I can say this because, since its first iteration in 2014, I have had the honour of being invited to help the Mayor's Portfolio project team adjudicate innovative projects within the City for inclusion in the programme. It's a simple but very smart idea: identify those projects where the City's team has taken a wider and longer than usual perspective on how to solve the problem they confront and deliver the solution the community needs. The underlying assumption is that the conditions are changing so fast that if project teams are allowed to deliver the same solutions

as they always have, we will quickly end up with a city that's unable to cope with the demands of the present, never mind the future.

Rather than go out and preach 'sustainability' (whatever that is) to their hard-working, hard-pressed colleagues, the City's sustainability team decided to seek out, analyse, highlight and reward those colleagues who were spontaneously taking the wider, longer, more innovative view of their task. This is such good sense. Most of us learn by doing and by being encouraged and applauded when we take reasonable risks to improve what we do.

I once found it easy as a citizen to assume the Civic Centre was filled with over-cautious bureaucrats more interested in stopping things than starting them. Of course I'm glad it wasn't filled with reckless risk-takers who gamble daily with the city's future, but my exposure to the Mayor's Portfolio has left me with the satisfying knowledge that there are many teams and individuals all over the City who clearly take pleasure in working out how to make service delivery more robust and more future fit, and in the process, starting a whole lot more than they stop. ●



Conclusion: Sustainability deliberations and progress

Holistic sustainability

Sustainability thinking has to maintain a focus on operational resources and financial sustainability in order for the City to continue providing services into the future. To this end, sustainability must be factored into the City's strategic planning and decision-making mechanisms and systems (IDP, 2017). As a result, this edition of the Mayor's Portfolio features projects that contribute to urban sustainability as well as those that speak more directly to operational sustainability like the customer feedback project. The former have a broad holistic approach while the latter are specific and niche in their nature.

Similarly, the variety in project scales, timeframes and objectives also demonstrate why not all projects can fairly be expected to achieve a high score according to the definition of sustainability adopted in the Mayor's Portfolio. However, participating in the Mayor's Portfolio programme makes project managers aware of additional aspects that need to be considered when conceptualising a project. Additionally, working towards sustainability presents a challenge to project managers to work

alongside other, sometimes unexpected, line functions to extend a project's reach and contribute to the city's urban sustainability.

Need to capture behaviour change as a key aspect of urban sustainability

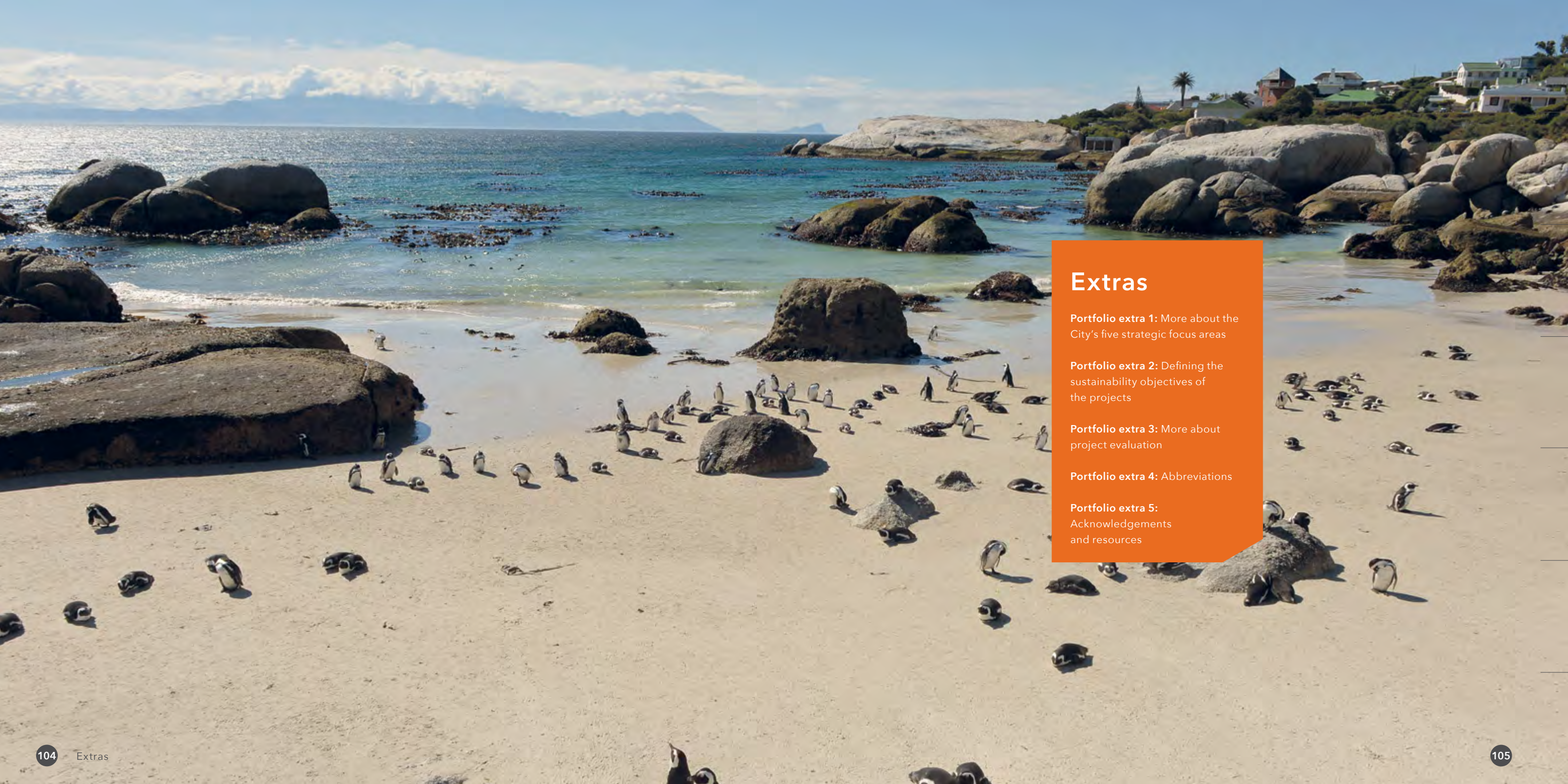
There have been numerous lessons from the water crisis such as the important role of individual and collective sustainable behaviour by the urban population in the mainstreaming of urban sustainability. Urban sustainability is not limited to project planning and design, rather it extends to a large-scale change of mind sets.

In order to sustainably manage resources, projects should stimulate behaviour change, including a more long-term focus on accessing resources in a sustainable manner. How this is captured through the Mayor's Portfolio programme and weaved into City processes requires further thought and creativity. Potential methods include the development of mentorship programmes, running sustainability workshops as well as the development of best practice guidelines to better equip project managers.

Catalyse and engage partnerships

Although the Mayor's Portfolio primarily focuses on projects led by the City, urban sustainability requires durable, consistent leadership, citizen involvement, partnerships and ongoing interaction across different spheres of government.

Currently, the Mayor's Portfolio reflects a range of internal and external partnerships. For instance, the skills and knowledge of the external sustainability partners in the form of the Review Panel is essential to the evaluation and assessment of projects. This kind of synergy is one that is essential for building the Mayor's Portfolio into an effective implementation tool of the Environmental Strategy. Moreover, exploring and catalysing partnerships with civil society and the private sector, promises to add value to the programme and move Cape Town closer to its vision of enhanced, protected and managed natural and cultural resources for long-term prosperity while optimising economic opportunities and promoting social well-being. ●



Extras

Portfolio extra 1: More about the City's five strategic focus areas

Portfolio extra 2: Defining the sustainability objectives of the projects

Portfolio extra 3: More about project evaluation

Portfolio extra 4: Abbreviations

Portfolio extra 5: Acknowledgements and resources



THE
OPPORTUNITY
CITY

THE
SAFE
CITY

THE
CARING
CITY

THE
INCLUSIVE
CITY

THE
WELL-RUN
CITY

Portfolio extra 1: More about the City's five strategic focus areas

The City of Cape Town's IDP provides the strategic framework that guides the municipality's planning and budgeting over the course of its political term.

When the new City administration was elected, a strong plan of action for Cape Town was developed. This plan is based on a clear understanding of what needs to be achieved during this term of office, and is built on the following five key pillars:

1. The opportunity city
2. The safe city
3. The caring city
4. The inclusive city
5. The well-run city

These five pillars help to focus the City's message and purpose of delivery. They also help us to translate our electoral mandate into effective organisational structures.

In the IDP, these pillars are called SFAs, because they are the key 'themes' encompassing all the City's programmes and initiatives. The result is a detailed format that enables effective programme implementation and accurate performance measurement of the focus areas.

While these programmes and objectives often overlap across SFAs, classifying them under the five pillars allows the City to effectively measure their outcomes. They can then act together to produce the objectives of the administration, and help the City address the structural inequalities of the past. Being drivers

of social and economic development, they help the City fulfil its constitutional mandate as local government and help change people's lives.

The IDP has been developed with maximum citizen participation. This has involved input from all levels of the administration as well as the most extensive public participation process ever undertaken by the City. Based on this inclusive approach, the IDP describes the programmes under each SFA, as informed by the overarching principle of infrastructure-led growth. These five SFAs can briefly be described as follows:

1. The opportunity city

The core focus of the opportunity city is to create the economically-enabling environment in which investment can grow and jobs can be created. Creating such an opportunity city involves the following:

- Using numerous levers to attract investment.
- Providing adequate support to the market via efficient regulation, planning and infrastructure support.
- Continued investment in infrastructure.
- Ongoing development and strengthening of economic partnerships.
- A focus on key projects that will promote growth and sustainability.
- Making the most of City assets to aid development and growth.
- Encouraging the growth of small businesses and entrepreneurs.

Opportunity city

Safe city

Caring city

Inclusive city

Well-run city

- A focus on taking care of the natural environment and managing natural resources more efficiently.

2. The safe city

Citizens need to be safe in their city. However, safety is a broader issue that goes beyond policing. A truly safe city manages disasters and risks, enforces traffic regulations, and provides fire and rescue services. Safety is essential to the public enjoyment of open spaces, city beaches and nature reserves. The City of Cape Town's focus on building a safe city includes the following:

- Continued dedication of resources and programmes to ensure effective safety provision.
- Local and international partnerships to allow for training and education.

- Ongoing roll-out of neighbourhood watch programmes.
- Increased public awareness of, and participation in, safety and security initiatives.
- Alignment of staffing models with national and international best practice.
- Investment in staff training and capacity-building.
- Enforcement of environmental compliance.
- Investment in innovative safety policies, specialised units and programmes.

3. The caring city

In order to be a world-class city, Cape Town must be welcoming to all people, and make residents feel that their government is doing everything it can to provide for them so that they can truly access opportunities. Key to realising the vision of a caring city is the following:

- Continued implementation of the rates rebates policy to help reduce poverty.
- Provision of amenities, such as parks, libraries, sports and recreational facilities, and community and youth centres.
- Greater focus on more direct ways of promoting social development.

- Offering effective substance abuse programmes to help minimise the number of people who are excluded from society.
- Increased efforts to make all people feel that they are a part of their communities.
- A focus on creating integrated human settlements by building communities, not just houses.
- Ongoing review of the provision of services to informal settlements.
- Investment in primary health-care facilities.

4. The inclusive city

An inclusive city is one where everyone has a stake in the future and enjoys a sense of belonging. While achieving this relies on the proper functioning of the programmes, the City of Cape Town will also concentrate on the following:

- Developing effective public transportation programmes.
- Ensuring greater recognition of culture and heritage.
- Proper use of resources to address the backlog of community facilities in underdeveloped areas.
- Responding effectively to the needs of its citizens.

5. The well-run city

Citizens need to know that their government works for them, is accountable to them, and answers to them at all times. To achieve this, the City of Cape Town will do the following:

- Keep Council meetings open to the public to ensure that the actions and decisions of the City's political leaders are always transparent.
- Publically advertise all City tenders above a prescribed rand value.
- Stick to its budgets and programmes of debt collection and revenue projections.
- Manage its staff structure to ensure service delivery.
- Maximise staff potential through effective human resources management, staff training and staff development.
- Strictly monitor all services to ensure delivery.
- Remain open and transparent in all its dealings. ●



Portfolio extra 2: Defining the sustainability objectives of the projects



Ensuring our urban growth is done responsibly, and in a sustainable manner, requires us to challenge the ways in which we think about urban issues and the ways in which people and institutions behave.

1. Building community

- For example through:
- facilitating community participation;
 - promoting collaboration and building partnerships; and
 - promoting social cohesion.

2. Improving quality of life

- For example through:
- promoting health and well-being;
 - improving living and working conditions and promoting dignified human settlements; and
 - enhancing participation in arts, culture, sports and heritage.

3. Addressing major social challenges

- For example through:
- addressing the legacy of apartheid;
 - improving safety and security; and
 - promoting education, training and awareness.

4. Creating economic opportunities

- For example through:
- creating jobs and promoting job creation;
 - creating SMMEs; and
 - supporting the informal economy.

5. Improving productivity and efficiency

- For example through:
- providing efficient utilisation of resources;
 - removing barriers to service delivery; and
 - promoting beneficial partnerships.

6. Alleviating poverty

- For example through:
- meeting basic needs;
 - supporting livelihood development; and
 - improving access to income.

7. Enhancing resource efficiency

- For example through:
- improving water availability, reducing demand and increasing efficiency;
 - promoting energy efficiency and increasing use of renewable energy; and
 - promoting urban densification and efficient use of land.

8. Promoting and enhancing ecological integrity

- For example through:
- conserving sensitive ecosystems and biodiversity;
 - promoting implementation of the biodiversity network; and
 - conserving and enhancing ecosystem functions and benefits.

9. Addressing major environmental challenges

- For example through:
- reducing the incidence of invasive species;
 - reducing waste and pollution and improving air and water quality; and
 - addressing historical inequities in accessing natural resources.

10. Ensuring strategic alignment

- For example through:
- promoting cooperative governance and aligning with provincial, national and international priorities and responsibilities; and
 - ensuring alignment with the Spatial Development Framework, IDP and other key strategies.

11. Facilitating community engagement

- For example through:
- building communities' capacity for engagement;
 - facilitating public input into governance; and
 - supporting existing community structures and initiatives.

12. Promoting transparent and democratic processes

- For example through:
- ensuring responsiveness to public needs and adaptive management in changing contexts;
 - promoting access to information; and
 - ensuring replicability of project principles/methods.

Portfolio extra 3: More about project evaluation

A custom-designed table was used to record and assess projects’ performance according to sustainability objectives. The table below is an extract from the Atlantis Investment Incentives Scheme

(page 62). The objectives were broadly defined so that project managers could relate each objective to their respective projects. A scale of 1 to 5 (‘Poorly’, ‘Partly’, ‘Satisfactorily’, ‘Very Well’, ‘Excellently’)

was employed to assess how well the projects met each objective. These were later tallied to identify portfolio star-rated projects.

Project title: Atlantis Investment Incentives Scheme (extract)			
How does the project address the following objectives?			
Sustainability objectives	Project approach	Assessment	Scoring
Addressing major social challenges		Very well	4
i. Addressing the legacy of apartheid	The Atlantis Investment Incentives Scheme was specifically targeted at Atlantis, as it still struggles under the legacy of its origins as a relocation area for coloured people forcibly removed from other areas of Cape Town in the 1970s.		
ii. Supporting vulnerable individuals and groups and addressing discrimination	Atlantis is spatially segregated from opportunities in the Cape Town metro. The Incentives Scheme attracts local and foreign direct investments into the area to address high unemployment, as well as poverty, inequality and discrimination.		
Alleviating poverty		Satisfactorily	3
Improving access to income	By incentivising investment in Atlantis, the City is bringing more opportunities to the communities instead of communities having to travel to find opportunities.		
	Investors are incentivised to employ 75% of the labour from the local community (Atlantis).		

Portfolio extra 4: Abbreviations

ABT	alternate building technology	IDA	incremental development area	SAPVIA	South African Photovoltaic Industry Association
BMB	Biodiversity Management Branch	IDP	Integrated Development Plan	SAREBI	South African Renewable Energy Business Incubator
BNG	Breaking New Ground	IFO	Investment Facilitation Office	SDS	Social Development Strategy
BPO	business process outsourcing	IRT	integrated rapid transit	SMME	Small, Medium and Micro-sized Enterprises
BQTS	Business Query Tracking System	LED	light-emitting diode	SSEG	small-scale embedded generation
BRT	bus rapid transit	MVA	megavolt-ampere	TB	tuberculosis
CAPE	Cape Action for People and the Environment	MW	megawatt	TDA	Transport and Urban Development Authority
CBD	central business district	NGO	non-governmental organisation	TMF	Table Mountain Fund
CDF	Conceptual Development Framework	NMT	non-motorised transport	UISP	Upgrade of Informal Settlement Programme
CTEET	Cape Town Environmental Education Trust	NQF	National Qualifications Framework	UK	United Kingdom
DCCP	Dassenberg Coastal Catchment Partnership	NURCHA	National Urban Reconstruction and Housing Agency	UN	United Nations
ECD	early childhood development	ODTP	Organisational Development and Transformation Plan	UV	Ultraviolet
EE Forum	Energy Efficiency Forum	PICC	Presidential Infrastructure Coordinating Commission	VOC	“Vereenigde Oostindische Compagnie” (United East India Company)
EPWP	Expanded Public Works Programme	PSC	project steering committee	WCWDM	Water Conservation and Water Demand Management
GIS	geographical information system	PV	photovoltaic	WIL	Work Integrated Learning
HIV	human immunodeficiency virus	QR code	quick response code	WISP	Western Cape Industrial Symbiosis Programme
IBT	innovative building materials	SABS	South African Bureau of Standards		
		SANBI	South African National Biodiversity Institute		

Portfolio extra 5: Acknowledgements and resources

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Advisory forum

Firstly, to the City of Cape Town’s advisory forum that availed their time toward establishing a vision for the portfolio and offering practical advice on the choice of projects and assessment procedure.

Review panel

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Project managers

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Further information

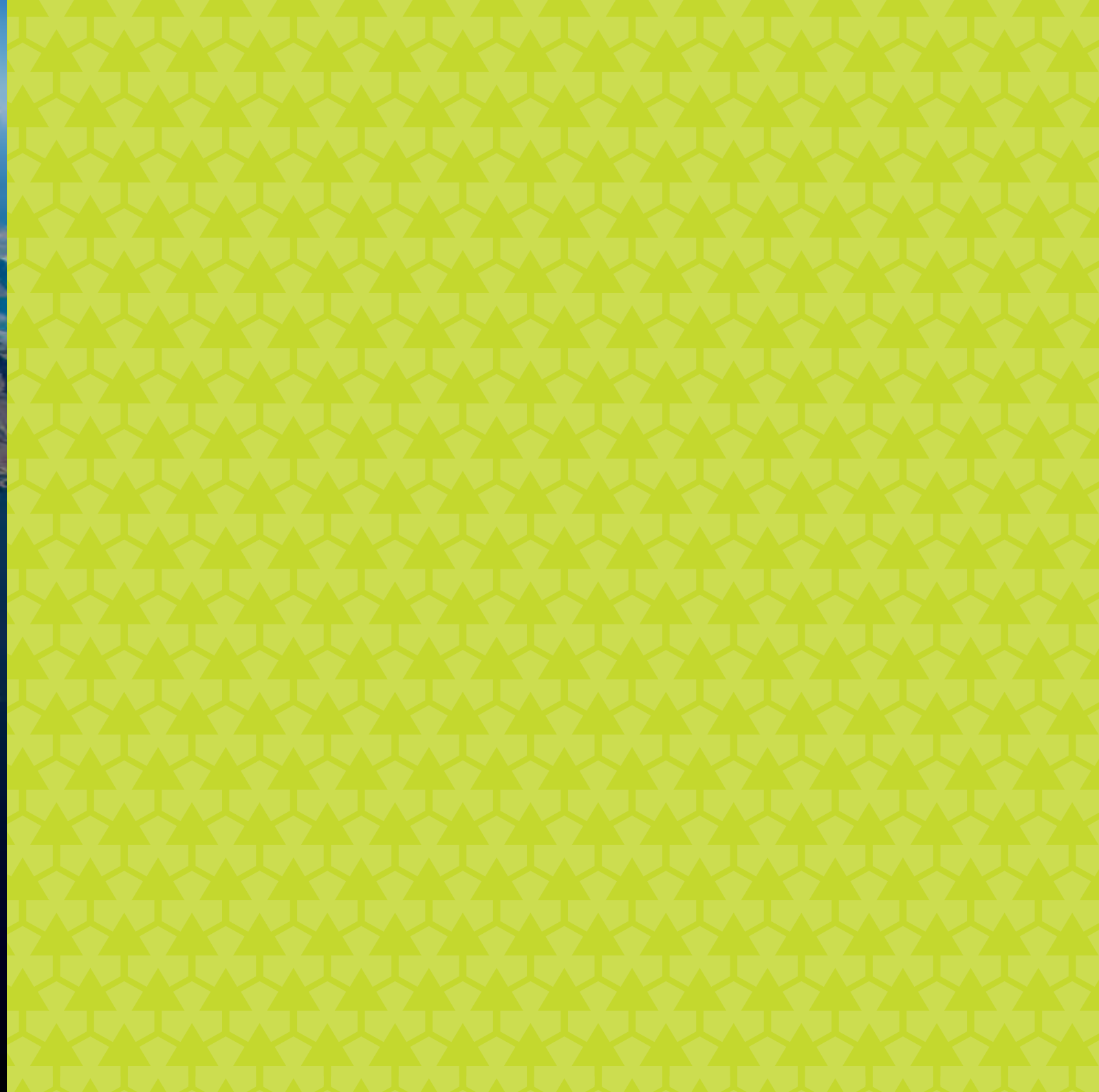
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