Stellenbosch
UNIVERSITY
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UNIVERSITEIT

Environmental Sustainability Report

2022

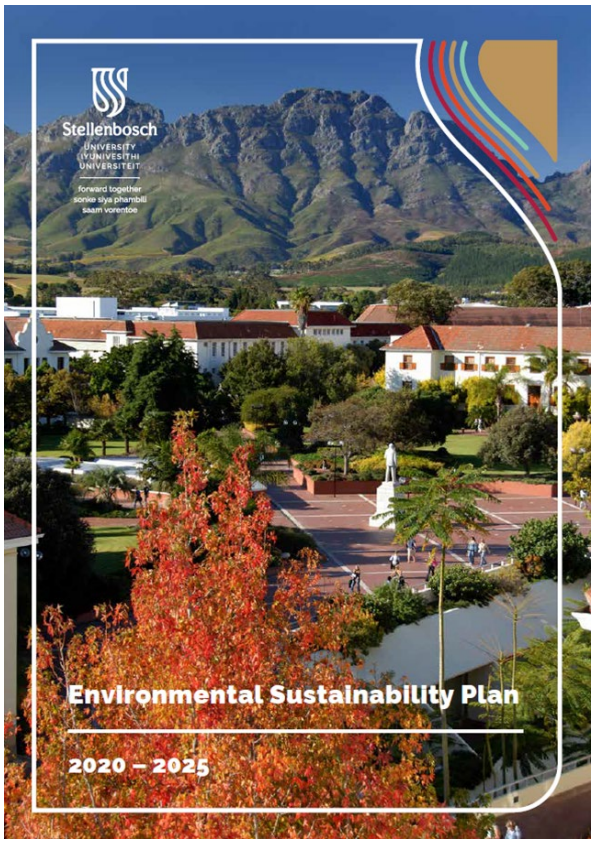
forward together
sonke siya phambili
saam vorentoe

www.susdev.sun.ac.za

Contents

The focus for environmental sustainability means changing SU's business to one with efficient water and energy use towards carbon Net zero, no waste to landfill whilst increasing the biodiversity and reduce emission and pollution levels that can be rendered harmless by natural systems.

SU has undertaken major ongoing initiatives to reduce energy, water use, apply stringent environmental standards to all new buildings, encourage sustainable living, promote low impact transportation, conserve natural resources, and decrease waste to landfill. This we do to reduce the impact of SU's operations on the environment and its operational carbon emissions and factors contributing to climate change.



1. Environmental Sustainability Strategy and Plan

The Environmental Sustainability Strategy and Plan 2020 – 2025 was developed for Stellenbosch University and approved by the rectorate in June 2022. The strategy, initiatives, elements, and targets described in the Plan, when fully implemented will result in an environmentally sustainable campus.

Net Zero Campaign

The environmentally sustainable plan are introduced to the campus community through presentations, projects implemented and numerous engagement activities and events through collaborating with student and staff interest groups. The Environmental Sustainability Plan has been launched in October through posters, e-media, discussions with staff members as crucial role players to play their part in institutionalising the plan.

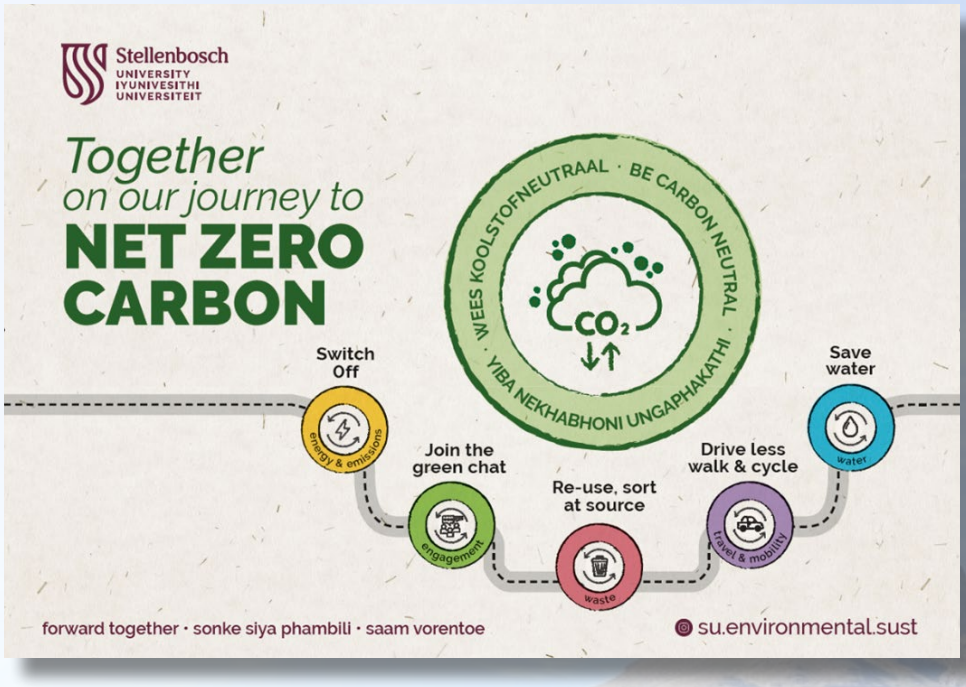
This campaign introducing all aspects of the Environmental Sustainability Plan and its elements is part of the Carbon Net Zero campaign.

The aim of the plan is to guide SU on the pathway of decarbonization to:

- Carbon neutrality by 2030
- Carbon Net Zero by 2040 – 2045
- Net Zero by 2050

- **Environmental, Social and Governance Reporting (ESG Reporting)**

The development of an ESG report for SU is important to attract more investment through research and to increase SU's rating and provide a formal structure towards sustainability measurements and progress reporting. A scope was developed, and a quotation obtained to start with the ESG reporting framework and gathering of information.

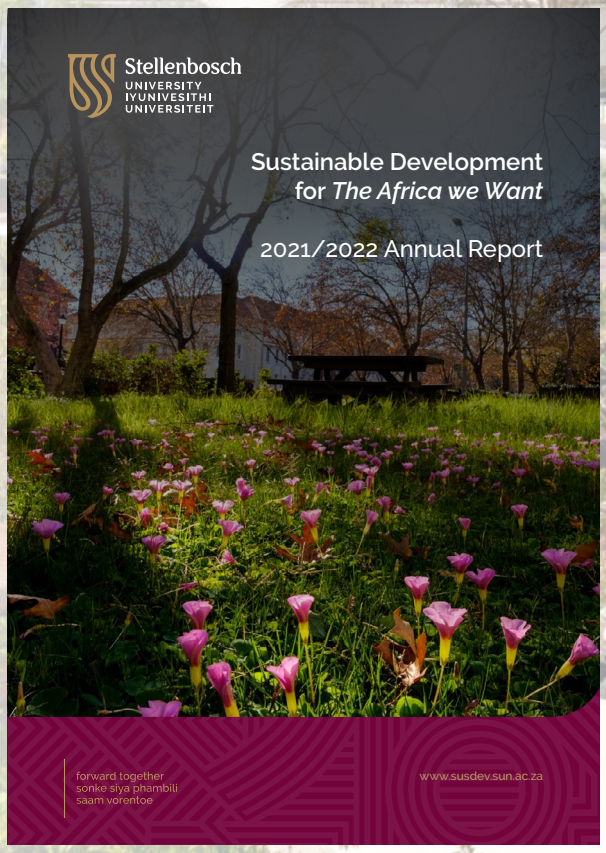


- **17 Sustainable Development Goals (SDG's)**

SU needs to develop a program and progress report on the 17SDG's and its 163 targets. The SDG hub was developed to compile and populate a report on 8 of the 17 SDG's. This was done in an effort to improve our impact rankings. Due to limited data available, this exercise changed into a gap finding analysis. Colleagues from FM have been working with Information Governance and Institutional Information SU departments to submit SU's contribution to the SDGs for the year of 2021 as well as provide policies and plans as evidence.

Link to report: click here

Link to website: https://susdev.sun.ac.za/

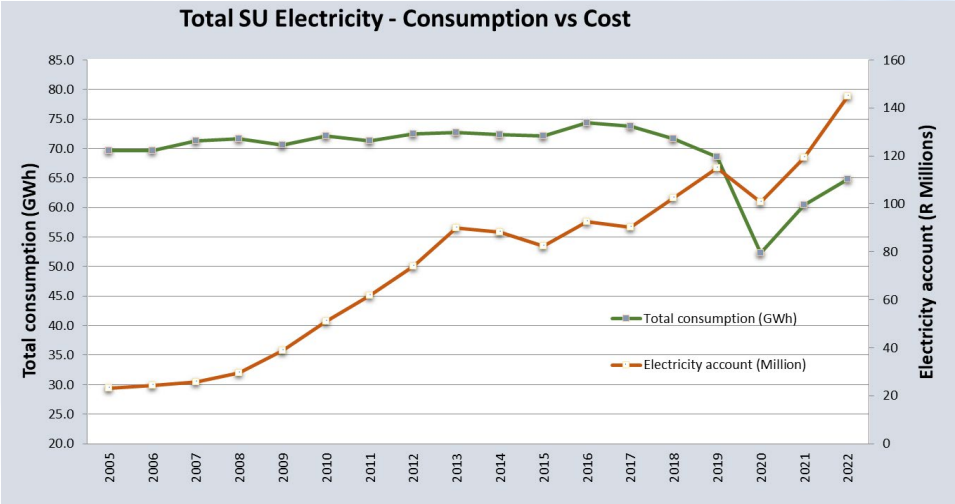


- **SU Rankings**

Stellenbosch University is globally rated using rated impact rankings and based on what SU has to offer as well as what it does. The data that was collected for the 8 SDGs where 4 are chosen and used in determining the rating of SU under the impact THE WUR ranking.

2. Energy & Emissions

- **Total Energy Consumption**



- **Energy Efficiency Programs**
  - LED Lighting Project. The program for replacing older lights with LED lights, fittings and sensors are progressing well; with one of the six buildings identified finished. Approximately 600 lights have been replaced.
  - BMS increasing the footprint of the BMS in existing portfolio of buildings to measure, provide alarms, action interventions to reduce utility consumption and costs.

- **Renewable Energy**

  - **Total PV Generation**

Knowledge Center	22 kWp	35 904kWh	R 89 042/annum
Mariendahl	57kWp	93 615 kWh	R 232 165/annum
Neelsie Roof	393 kWp	504 114 kWh	R 1,2m/annum
Decanting Building	100 kWp	-	-

- **Neelsie PV System**
  The 393kWp Photovoltaic Solar System are operational, generating 504 114 kWh per annum with a related saving of R1,2million per annum.

  A new solar system was imported and embedded into the paving as a trail, generating 800Wp at present.

  A proposed three year operational and service management agreement was developed and signed with SEM Solutions.

- **PV Feasibility**
  - Phase 1
  A feasibility was done to erect PV systems with a total estimated generation capacity of 4,667-kilowatt peak (kWp) on four Stellenbosch University Campuses: Main Campus (Engineering, Facilities Management), Bellville Park, Tygerberg and Worcester. Finance approval was also approved for these systems to the value of R72m. Roof investigations are presently done and data gathering for detail design and tender process started.
  - Phase 2
  Phase two of the PV is a present feasibility study of a further 4,5 kWp system, which will include some residences.
  - **Phase 3**
  Phase three is the investigation of PV ground-based systems

Ground Mounted Systems

Welgevallen 3/4 MWp

Mariendahl 3 MWp

Belville Park 5 MWp

SU is primarily dependant on electricity supplied by Eskom, the country's national electricity utility. Despite various efforts currently underway to diversify its sources of supply the electricity supply remains overwhelming generated from coal (98% coal; 2% renewable), and as a result, is one of the most emissions-intensive in the world. The result is that this is the biggest contributor to the Stellenbosch University's carbon footprint at a rate of 68 000ton CO2e/annum (2019 value).

- **12 Murray Street**
  A system was designed and costed as a back-up for load-shedding but including PV for Murray Street 12. The detail measurements of the loads are currently done.

Murray Street 12 16,3kWp – battery system
First potential Carbon Net Zero

- **Carbon Tax**

The SU was registered and licensed for Carbon Tax as per regulations in 2020. This is because SU exceed the thermal threshold of 10 MW thermal on diesel generation. We gathered information on generators and calculate the amount of emissions generated including, carbon tax. This was submitted to SARS for 2021 year to the value of R1,2 million or R136/ton CO2e.

- **SAGERS**

Due to SU exceeding the thermal threshold of 10 MW thermal on diesel generation we started calculating total emissions to submit on the national web site for the year of 2022 for government to accumulate and report to UN. The emissions were uploaded for the year of 2021 in October.

- **Carbon Footprint**

2019 was the first financial year that Stellenbosch University reported on its carbon emissions and carbon tax. We recently finished compiling a report for 2020. This is the second Carbon Footprint generated for SU including scope 1, scope 2 and scope 3 emissions for all campuses.

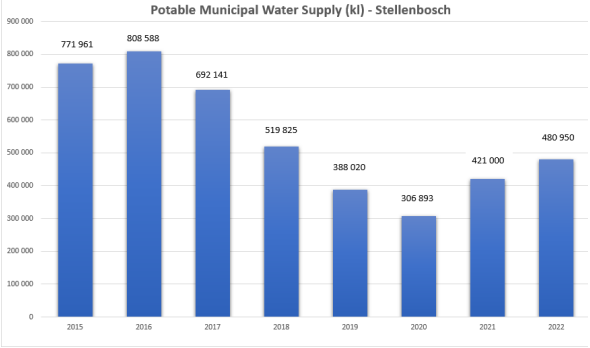
The concern is that even with the first year of covid and almost no people on campuses SU's footprint reduced only with 20 261 tonCO_2e contributing to an enormous amount of 64 875 tonCO_2e.

	FY2019 (tonCO_2e)	FY2020 (tonCO_2e)
Scope 1	1 981	1 934
Scope 2	68 553	50 259
Scope 3	14 493	12 430
Scope 0	109	252
Total	**85 136**	**64 875**

The second Carbon Footprint generated for SU including scope 1, scope 2 and scope 3 emissions for all campuses.

3. Water Conservation

- **Total usage**



- **Welgevallen dam**

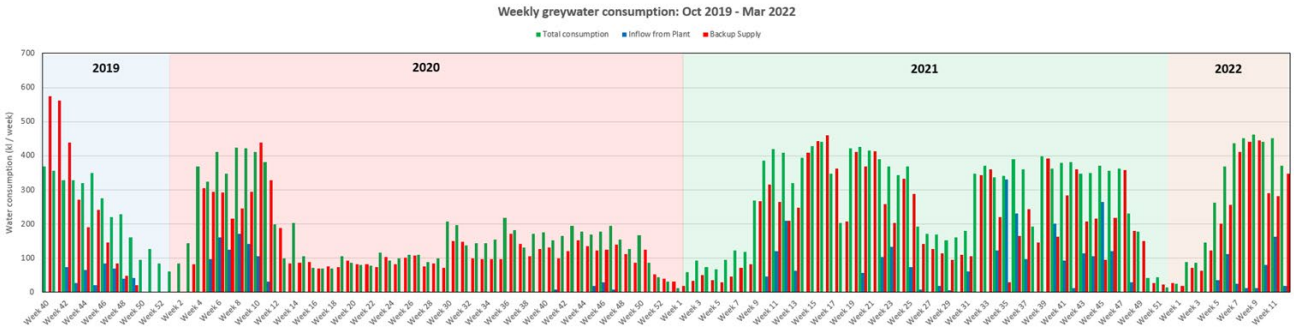
The University is committed to the sustainable management of water resources. A feasibility study of the Welgevallen dam is currently being done to upgrade the dam with another 80 000m² from the Eerste river. This water will be provided for irrigation to the farm, sport and landscape.

- **Mariendahl borehole and filtration system**

Mariendahl consumption is 140kl/ day between humans and animals. An augmentation scheme was designed and implemented to supply the total water demand on the farm. All water is supplied from the borehole intervention to reduce the potable supply and costs and to be off the grid from Elsenburg. This system is working well however creates problems with loadshedding. At Lentelus, two boreholes were drilled and fitted to supply water for irrigation to the sportsfields.

Welgevallen dam

Mariendahl borehole and filtration system



- **Grey water systems**

The greywater system at Stellenbosch is operating at optimum capacity, but still contributes to significantly of the saving of potable water at 1,3mill liters/month. Greywater system at Tygerberg now fully operational delivering an average of 24 000l/month

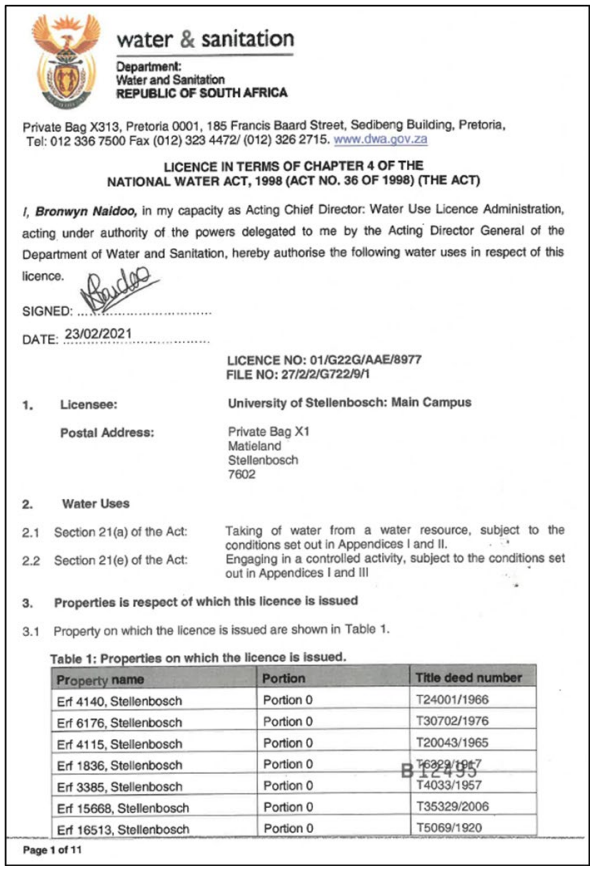
- **Filtration Plants**

The filtration plant at Tygerberg was operational and provided the complete production of water to irrigation and not to potable water due to construction and testing of pumps at reservoir. The Bellville Park plant is operational. The agreement with City of Cape town was signed by SU and supplied to COC. Both plants at Belville and Tygerberg we received the licences and operation started officially on 1 June 2022. This took Bellville Park off the grid with water.

- **Water Use Licences and WULA licences**

WULA licences were received for all boreholes on Stellenbosch campus after 3,5 years of data gathering, applications, motivations, and queries. This is a massive achievement as many hours were invested in this process from Dannica Pedro, John de Wet and GEOSS.

We are currently busy with applications for Lentelus boreholes and *Section 27 Motivational Report Information Documents.* We received the investigation from national DEFF to confirm the ELU's for campuses. This still needs to be confirmed in writing. A formal system with quotes to Sport, landscape and agriculture were developed on GIS and explained to all parties. It is also highlighted as risk and registered as SU has now reached its water ecological limit from natural resources.



water & sanitation

Department:
Water and Sanitation
REPUBLIC OF SOUTH AFRICA

Private Bag X313, Pretoria 0001, 185 Francis Baard Street, Sedibeng Building, Pretoria,
Tel: 012 336 7500 Fax (012) 323 4472/ (012) 326 2715. www.dwa.gov.za

LICENCE IN TERMS OF CHAPTER 4 OF THE NATIONAL WATER ACT, 1998 (ACT NO. 36 OF 1998) (THE ACT)

I, ***Bronwyn Naidoo,*** in my capacity as Acting Chief Director: Water Use Licence Administration, acting under authority of the powers delegated to me by the Acting Director General of the Department of Water and Sanitation, hereby authorise the following water uses in respect of this licence.

SIGNED: .....

DATE: 23/02/2021

LICENCE NO: 01/G22G/AAE/8977
FILE NO: 27/2/2/G722/9/1

1. **Licensee:** **University of Stellenbosch: Main Campus**

Postal Address: Private Bag X1
Matieland
Stellenbosch
7602

2. **Water Uses**

2.1 Section 21(a) of the Act: Taking of water from a water resource, subject to the conditions set out in Appendices I and II.

2.2 Section 21(e) of the Act: Engaging in a controlled activity, subject to the conditions set out in Appendices I and III

3. **Properties is respect of which this licence is issued**

3.1 Property on which the licence is issued are shown in Table 1.

Table 1: Properties on which the licence is issued.

Property name	Portion	Title deed number
Erf 4140, Stellenbosch	Portion 0	T24001/1966
Erf 6176, Stellenbosch	Portion 0	T30702/1976
Erf 4115, Stellenbosch	Portion 0	T20043/1965
Erf 1836, Stellenbosch	Portion 0	T6329/1957
Erf 3385, Stellenbosch	Portion 0	T4033/1957
Erf 15668, Stellenbosch	Portion 0	T35329/2006
Erf 16513, Stellenbosch	Portion 0	T5069/1920

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- **Borehole internal and external compliance audits**

After receiving the borehole license from the Department of Water and Sanitation, SU needs to comply with the borehole management guidelines to ensure that the boreholes do not collapse as well as to ensure that the quality and the chemistry composition does not change too much to where it becomes hazardous. The internal audit is done by a designated person within FM and the audit includes filling in a compliance report and submitting the following documents to members of the Department of Water & Sanitation:

- Appendix I, Condition 12: Pictures of signs that have been put up
- Appendix II, Condition 8: Groundwater Management Plan
- Appendix II, Condition 8.1 & 8.2: Latest groundwater monitoring report
- Appendix II, Condition 8.1 & 8.3: Chemistry report
- Appendix II, Condition 13: Flow meter calibration certificates

The external audit is done by an external borehole professional company which will have the internal audit integrated with the external audit. These audits are submitted twice every year to the DWS.

- **Water Safety Plans**

Water safety plans were drawn up for the Tygerberg borehole and filtration system as well as for the Bellville Park Quarry and filtration system. The purpose of these safety plans is to ensure that Stellenbosch University complies to and meets the regulatory standards according to the World Health Organization (WHO) as a requirement by the City of Cape Town and can act according to the SOP when there is a deviation from the compliance standards.

- **Water billing & Metering**

A project, together with the municipality, has been implemented to reconcile the municipal accounts with the present municipal and smart electronic meters and assures correct billing. Metering of water is continuing and much more meters were implemented. Agreement with municipality through Ikapa and SMEG was reached to replace faulty municipal meters. For 2022 six meters were replaced.

4. Waste and Materials Standards and Specifications Handling Document

A *Zero Waste to Landfill Strategy* document was compiled through JG Afrika and Circular Vision to develop a Waste Management Strategy to assist the SU to achieve a realistic zero waste to landfill target as well as what actions are required to achieve it. The intention of the Waste Management Strategy is to address waste materials on campus as holistically as possible and from a circular perspective. The Strategy therefore includes a high-level overview and comment on waste management systems and logistics, potential costs of proposed solutions and interventions, as well as potential impacts of solutions, projects the University's efforts to address climate change by decarbonising our operations and reducing our carbon emissions..

Together with the Zero Waste to Landfill Strategy document, a Standards and Specifications document was compiled which indicated which items the vendors are allowed to bring onto campus. Items needed to be either recyclable or compostable. This will enable SU to reduce the amount that is being sent to landfill.

Cold drink & water bottles				
PROBLEMATIC ITEM: SINGLE USE BEVERAGE BOTTLES				
Priority:	MEDIUM	Concern/Issue:	High-use item. Limited recycling cycles.	
Replacement Options	**Composition/ Material & Notes**	**Certifications**	**SU Disposal Method**	**Potential Suppliers**
Preferred 	Returnable glass / plastic (PET) beverage bottles.	None required	No disposal required (deposit bottles to be returned to store)	E.g. Coca-Cola
	Re-usable beverage bottles	None required	No disposal required unless broken/damaged – then Recycling	Numerous as the reusable beverage bottles could be glass, plastic or metal E.g. Consol Glass
Least preferred 	Clear Plastic PET bottles are preferable over coloured plastic PET bottles. Coloured PET bottles are not widely recycled.	Recyclable	Recycling	Select glass rather than Plastic for items which are only in coloured bottles for food safety and preservation e.g. ginger beer

- **Landfill Diversion Rate**

With many interventions and awareness campaigns the diversion away from landfill is now on a staggering average of 78% for the year 2022, with 1 963 845 kg waste sorted for the first ten months. As indicated in the tables below comparing 2019 and 2022 the total amount of waste generated on campus has reduced significantly with 172 553kg. It is also very important to note that the amount that has been sent to landfill in 2022 compared to 2019 has dropped by an average of more than 50%. This indicates that implementing the materials handling document as well as upgrading our waste signage and developing additional waste streams has proven to reduce our total waste generated as well as less waste being sent to landfill.

Stellenbosch University 2019 (kg)										
	19-Jan	*19-Feb*	*19-Mar*	*19-Apr*	19-May	19-Jun	19-Jul	19-Aug	19-Sep	19-Oct
Recycling Percentage	26%	47%	61%	77%	82%	78%	84%	87%	81%	88%
Recycled	10 263	30 412	61 276	24 752	29 673	25 332	21 627	30 512	25 655	33 997
Recovered	6 804	25 240	21 784	141 393	202 054	123 958	206 638	213 003	155 598	271 557
Landfill	49 045	61 597	53 840	50 239	51 868	41 247	45 084	36 520	42 230	43 200
Total	66 112	117 249	136 900	216 384	283 595	190 537	273 349	280 035	223 483	348 754

Stellenbosch University 2022 (kg)										
	22-Jan	*22-Feb*	*22-Mar*	*22-Apr*	22-May	22-Jun	22-Jul	22-Aug	22-Sep	22-Oct
Recycling Percentage	86%	78%	71%	73%	87%	82%	86%	75%	78%	64%
Recycled	11 180	25 984	32 779	27 904	33 292	43 020	35 115	41 461	28 899	20 848
Recovered	34 982	53 444	69 383	75 057	108 946	92 870	56 429	44 141	70 681	75 493
Landfill	7 553	20 921	31 481	28 522	22 197	29 107	14 866	29 174	27 378	27 381
Total	53 715	100 349	133 643	107 587	164 435	164 997	106 410	114 732	126 958	123 723

- **Upgrade of waste signage**

The image below is a screenshot of SU's new 3-bin waste signage that was updated to actual images instead of words and silhouettes. The feedback that we have received from students were positive where they feel that it is more informative, and the items are easier to identify with. Students and staff would need to sort their waste item at source by using the new signage as guidance.

- **Corporate involvement**

As Stellenbosch University was undergoing an upgrading of its Corporate Branding. This resulted in all, if not most, of our communication material that needed to be updated accordingly. This meant that FM had to be in constant communication with Corporate Communications Division to ensure that the proposed designs comply to the new SU branding guidelines.

- **E-waste and Paper waste**

SU has separated the e-waste and paper waste stream from the mixed recycling stream eg, glass, metal, plastic and tetrapak. The reason for this was to ensure that students and staff do not contaminate these items as they are valuable within the recycling market.

FM has identified strategic spaces where the e-waste bins and paper boxes need to be placed for its intended use.

This forms part of our *Zero Waste to Landfill Strategy* guidelines which has been implemented. Together with these changes, FM has sent out communications to inform staff and students on where to find these new bins as well what should be disposed of in each respective bin.

All residences and PSO's received reusable mugs to distribute to their 1st year students.

The students are encouraged to use the mugs in the Neelsie and TSS where the vendors agreed to support the Bring Your Own Mug initiative, some even with discounts.

This also forms part of the *Zero Waste to Landfill Strategy* guidelines where every year there will be more students with reusable mugs thereby fewer disposable cups entering SU's waste streams.

- **Construction Environmental Management Programme (CEMP)**

The CEMP has been rolled out together with the Projects Management office and it has been implemented. The first batch of data has already been captured.

Table 1:The table provides details on the potential environmental impacts and relevant parties responsible for implementing the identified mitigation measures.

Environmental Management and Mitigation Measures		Responsible Person(s)	Risk Rating
CONSTRUCTION CAMP(S) ESTABLISHMENT		Contractor / DEO	**Negligible**
Potential Impact:	• Disturbance to existing teaching and research activities.		
Environmental Objectives	• Ensure all site camps and material laydown areas are located in previously disturbed areas and away from sensitive receptors, e.g. existing on-site activities.		
Mitigation Measures	• Location of site camp(s) to be approved by PM and ECO prior to establishment. • Contractor to provide a Method Statement, detailing location, layout and method of establishment (incl. buildings, offices, laydown areas, stockpile areas, wash bays, fuel storage areas, solid waste storage areas, etc.), water sources and measures to reduce on-site water use. • Incident and complaints register to be generated for project. • Site camp(s) to be fenced with necessary security to prevent public access. • Fencing to include visual screening and signage displaying relevant warning information and contact numbers. • Site camp(s) not to be located on the edge of any watercourse or sensitive environment. • Suitable eating areas shall be provided for staff, including safe drinking water and refuse bins with lids. • Stormwater management measures must be implemented to ensure water does not drain through the site. • Sufficient toilets shall be provided (1 toilet per 15 staff). Toilets to be regularly maintained and properly secured. If chemical toilets are used, ensure no spillage occurs during emptying. • Fires for heating, cooking or burning of any materials will not be permitted. Only purpose built "braai" areas will be allowed within the site camp(s). • Non-potable water to be used for construction activities, as far as possible. Non-potable water to be responsibly sourced and used. Approvals may be required for borehole use or abstraction from a water source. • Contractor to implement water saving measures on site to limit water wastage.		
Evidence	• Method Statement • Incident and complaints register		
SITE / WORKING AREA ESTABLISHMENT		Contractor / DEO	**Low - Medium**

- **Zero waste events**

SU has developed an application form for events where all vendors must agree that they will comply with our waste material standards and specifications which instructs them on what items can be brought onto campus.

SU has also included guidelines on what items can be replaced to ensure that they are hosting a zero waste to landfill event.

Vendor Agreement

Thank you for participating in our quest for achieving Zero Waste to Landfill status. Stellenbosch University is counting on you to help make this zero waste to landfill events a success. You can do so not only by participating as a vendor, but also by reducing and recycling the material you generate at your booth, event or function.

Events can generate a large amount of waste, and SU is committed to facilitating waste-free events. We ask that you support our efforts to be an environmentally friendly event by reviewing the following waste reduction and disposal guidelines and signing below, indicating your agreement. Please return the signed form to …… by (date): ……..… before the event.

Please tick box once read and understood ☐

Waste Reduction & Disposal Guidelines

Reduction

In addition to providing products that are easy to recycle, please consider the following waste reduction strategies to minimize waste generated at the event:

❑ Provide reusable serving ware rather than disposable

❑ Consider multi-purpose and reusable decoration items and materials

❑ Buy in bulk to avoid waste due to individual packaging

❑ Limit the number of serviettes each customer may take

❑ Provide sauce pump stations or reusable bottles at vendor stalls

Please tick box once read and understood ☐

Recycling

The items listed below will be collected for recycling at the event:

❑ Glass – food and beverage containers (must not be soiled with food waste)

❑ Metal – food and beverage containers (must not be soiled with food waste)

❑ Plastic – bottles and cans (must not be soiled with food waste)

❑ Paper – Cardboard and boxes, mixed office paper (must not be soiled with food waste)

- **Vendors training**

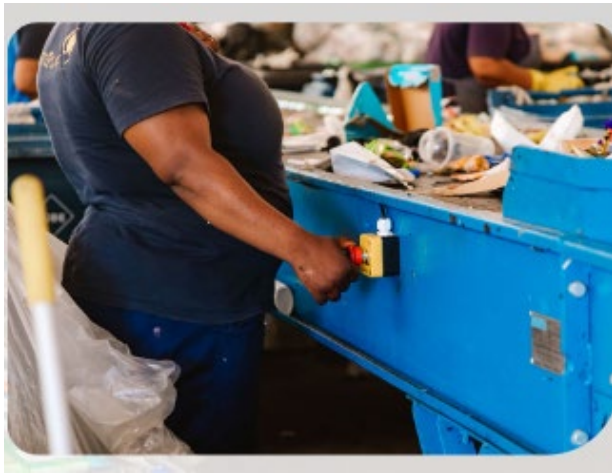
Most of the vendors have now been contacted and worked through the Materials Handling Document. All the vendors and cleaning companies have also attended waste sorting workshops where the effective use of the 3-bin system was explained. Inviting the vendors to the tours to the MRF to see how our waste is recycled helped them to understand why we need to reduce the waste we send to landfill and how their packaging is contributing. The Neelsie vendors were also invited to the Neelsie PV panel tours to give an understanding of the importance to reduce our energy consumption.

- **Waste Billing**

Part of the zero to landfill project is the recycling of waste which is at an average of 78% and the implementation of a MRF. This resulted in much less collection points and bins to be collected by the municipality for landfill. The project is about reducing the billing amount considerably with 50%.

- **Materials Recovery Facility**

As part of productivity increase for sorting and recycling of materials at the MRF a conveyer and bailing machine was introduced. A scale for measuring and an electronic reporting system contributes to the accuracy of the figures.



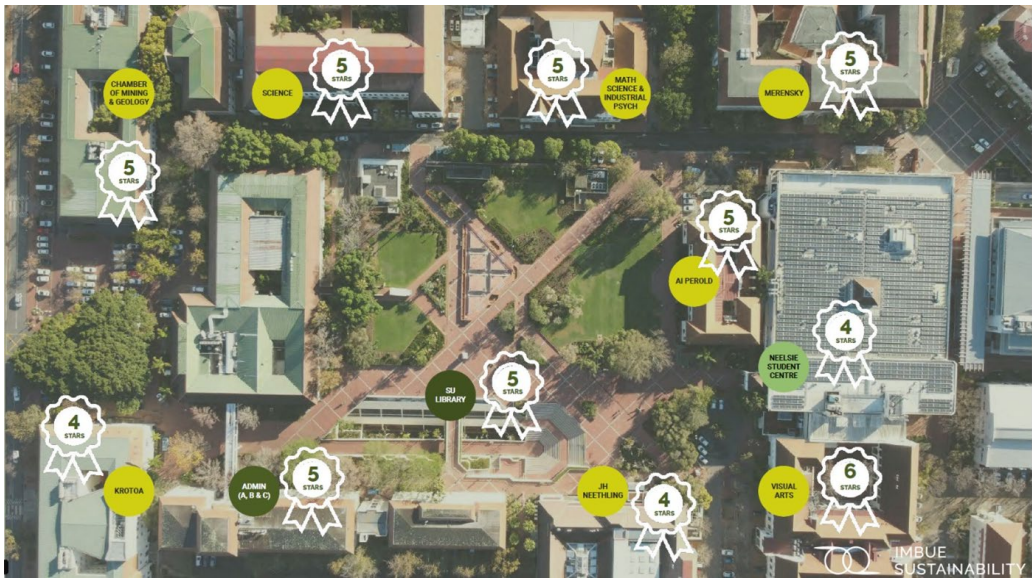
5. Sustainable Building Projects

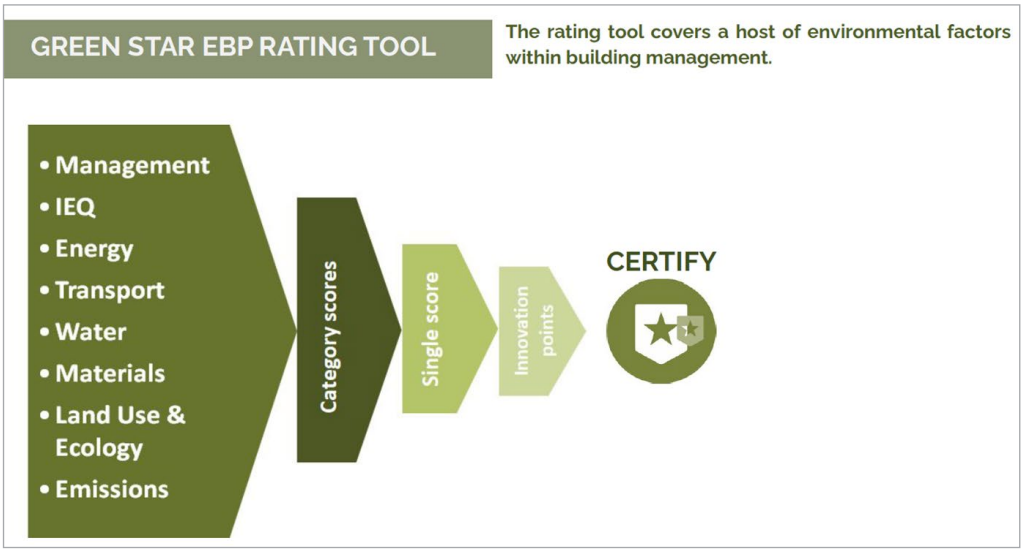
Stellenbosch University owns a large portfolio of buildings which operations results in a substantial contribution to the institution's emissions and carbon footprint. Buildings contribute 75% to carbon in the world and therefore much more environmentally friendly buildings need to be constructed. Therefore, the drive to build buildings to the minimum principals of a four-star rated buildings on all SU campuses.

The BMRI building was certified as a GBCSA four star rated building and needs to be operated accordingly to certain standards. Therefore, we started developing a training manual and a program for behaviour change to operate the building accordingly to a 4-star rated building.

- **Portfolio Rating**

A precinct of 19 buildings were identified and intensive gathering of utility data and space quality audits was done on these buildings. This also include the measuring of HVAC, indoor quality, lighting, noise, and temperature. Many plans have been developed, to be implemented and for SU to receive a green star portfolio rating. This was presented to the different faculty managers and FM's. The data has been submitted and we have received our proposed ratings for round one as indicated below.





- **Cillar Performance Audit**

The GBCSA EPWW rating tool is used to audit 50 buildings. This will rate buildings according to performance, using a scientific methodology. These buildings will be benchmarked against other buildings of similar size and usage. Gathering of information and data on these buildings has been completed and submitted. A link to view the performance of each building has been provided and new software developed for this purpose.

- **Green Building Specialist**

A green building specialist was appointed to help FM to assure all new projects and major upgrades are design and constructed to minimum 4 star rated requirements and carbon net zero ready spaces.

6. Biodiversity and Landscape

- **Conservation, Biodiversity and Recreation**

The Stellenbosch Mountain, Duthie reserve Koloniesland and Eerste and Krom river is manage as ecological green areas with the emphasis on fire management, recreation, sport, research, conservation and increase of biodiversity. These areas are important green spaces contributing to the sustainability of the campus.

Table 1:

Item	Planned annual	Actual
	Year	Year
Invasive Clearing	49ha	37ha
Roads	60900 sqm x 2	60900 sqm
Fire breaks	5.39km	1.96km
Trails and MTB trails	+- 4km cleaning/month	5.4km cleaning/month

Important green spaces contributing to the sustainability of the campus.

During 2022 conservation work was conducted by the SU sustainability team. The monthly cutting, raking, and cleaning of open area was done, this included the maintenance of the dam walls and opening of all mountain water channels and culverts. Approximately 37 ha of plantation was cleaned of invasive seedlings and coppice. This is to reduce the spread of invasive species within our plantations and to keep them in a neat state. Weekly cleaning of known hotspots was conducted, due to littering and illegal dumping. The initiation of a disclaimer for our obstacle course was brought forward to the legal department, and a site visit completed.

Construction and maintenance of the SU gravel roads started in early April, where all our SU roads where cut, watered and compacted. The total area of roads done accumulated to over 60 000 square meters. The importance of maintaining our roads is to prevent erosion and in turn promote rehabilitation and conservation of natural areas.

Various rehabilitation sites were identified and felling of large water threatening Eucalyptus trees has been actioned to allow for planting of indigenous trees.

- **Recreational spaces**

All recreational spaces are maintained to conservation principals, but also for the university community to enjoy.

- The trails and MBT were maintained to an acceptable standard.
- Events – several events were hosted at mountain and facility prepared and rehabilitated after events.

- **Roads**

Roads serve and are managed to standards for fire breaks, access, recreational routes and erosion and water control features. Opening of all mountain water channels and culverts requesting quotes requested and grading of the SU gravel roads were part of activities.

- **Conservation**

Invasive and Alien species program, approximately 37 ha of plantation was cleaned of invasive seedlings and coppice. Work planned for soil erosion and establishing indigenous vegetation at Ertjieskloof dam.

Various rehabilitation sites were identified and felling of large water threatening Eucalyptus trees has been actioned to allow for planting of pristine indigenous forest.

- **Fire prevention**

Three fires occurred during the fire season. All the fires were controlled quickly without loss of assets. This was due to good reaction times and fire breaks in place.

- **Impi course**

The Impi Challenge is an obstacle course on the Coetzenberg Mountain that is available to anyone that wants a challenge while visiting the area. We wanted to have the outdoor obstacles to bring people outside to the natural setting of the mountain versus being indoors for most of their day. The new Impi course was finished with all the obstacles erected as part of the outdoor recreational options on Coetzenberg mountain.

- **Agriculture**

The new crop site for agronomy was extended due to levelling of the terrain. A French drain was installed at a waterlogged area near the agronomy faculty storage site and a culvert to be installed.

7. Landscapes

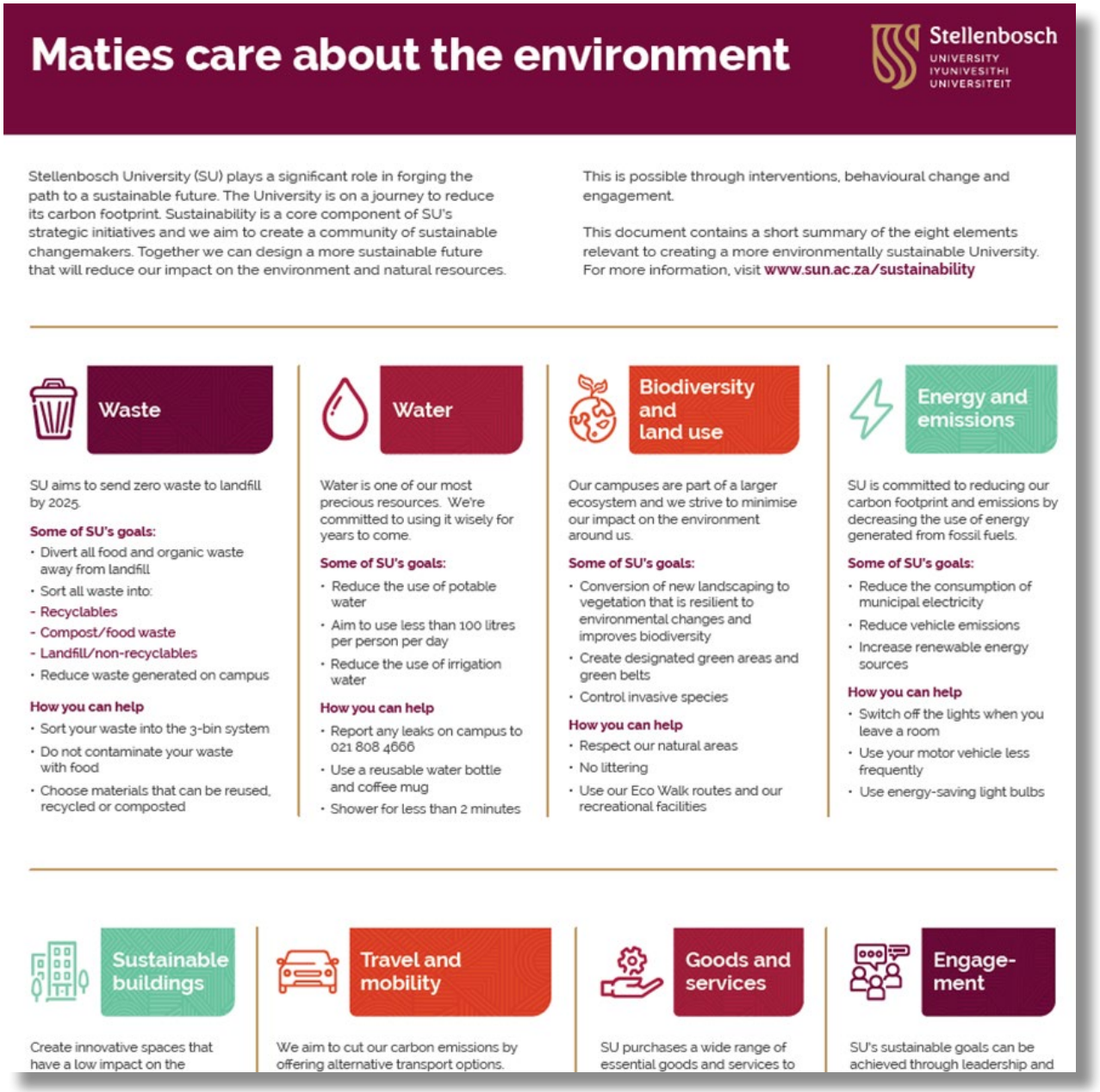
Special focus is on the inclusion of indigenous and endemic vegetation in SU landscapes to reflect the natural biome.

- Plant and tree selection in landscape projects and major upgrades continues to reflect the ecology and microclimate of the site to reduce the water requirements of the landscape.
- Compost and on-site chipping continued as a practise which produces mulch and used in the landscapes as a sustainable practise
- Design of landscapes were changed in certain areas to capture run-off water and filter into soil
- Design of the extension of the NMT route in Victoria Street is planned.

8. Engagement

- **Communication and Strategy**

To ensure environmentally sustainability is one of the cornerstones in all aspects of SU's operations, training, and research, we are busy creating communication structures, networks and partnerships for knowledge and information transfer within the student and staff communities. Creating a Sustainability calendar and an integrated communication strategy, using international and national awareness days as a basis, is the priority to create well planned and executed engagement events, as well as a planned presence on all the media platforms.



Maties care about the environment

Stellenbosch University

Stellenbosch University (SU) plays a significant role in forging the path to a sustainable future. The University is on a journey to reduce its carbon footprint. Sustainability is a core component of SU's strategic initiatives and we aim to create a community of sustainable changemakers. Together we can design a more sustainable future that will reduce our impact on the environment and natural resources.

This is possible through interventions, behavioural change and engagement.

This document contains a short summary of the eight elements relevant to creating a more environmentally sustainable University. For more information, visit **www.sun.ac.za/sustainability**

Waste

SU aims to send zero waste to landfill by 2025.

Some of SU's goals:

- Divert all food and organic waste away from landfill
- Sort all waste into:
  - Recyclables
  - Compost/food waste
  - Landfill/non-recyclables
- Reduce waste generated on campus

How you can help

- Sort your waste into the 3-bin system
- Do not contaminate your waste with food
- Choose materials that can be reused, recycled or composted

Water

Water is one of our most precious resources. We're committed to using it wisely for years to come.

Some of SU's goals:

- Reduce the use of potable water
- Aim to use less than 100 litres per person per day
- Reduce the use of irrigation water

How you can help

- Report any leaks on campus to 021 808 4666
- Use a reusable water bottle and coffee mug
- Shower for less than 2 minutes

Biodiversity and land use

Our campuses are part of a larger ecosystem and we strive to minimise our impact on the environment around us.

Some of SU's goals:

- Conversion of new landscaping to vegetation that is resilient to environmental changes and improves biodiversity
- Create designated green areas and green belts
- Control invasive species

How you can help

- Respect our natural areas
- No littering
- Use our Eco Walk routes and our recreational facilities

Energy and emissions

SU is committed to reducing our carbon footprint and emissions by decreasing the use of energy generated from fossil fuels.

Some of SU's goals:

- Reduce the consumption of municipal electricity
- Reduce vehicle emissions
- Increase renewable energy sources

How you can help

- Switch off the lights when you leave a room
- Use your motor vehicle less frequently
- Use energy-saving light bulbs

Sustainable buildings

Create innovative spaces that have a low impact on the

Travel and mobility

We aim to cut our carbon emissions by offering alternative transport options.

Goods and services

SU purchases a wide range of essential goods and services to

Engage-ment

SU's sustainable goals can be achieved through leadership and

- The Welcoming programs of the residences and PSO's were influenced through the Sustainability/ Green HC's in creating awareness with presentations and games about using the 3-bin system effectively and living sustainably, using community cleanups to educate about waste reduction and having spekboom planting to educate about increasing biodiversity.

- Collaboration with the Dream walk 2022 committee resulted in smaller dream-flyers that was printed on recyclable paper, reducing waste. **(Photo Nerina educating 3 bins, Speed recycling Helshoogte & Sonop)**.

- Welcoming period also saw the startup of our Instagram page sharing weekly information, prompts or photos of events.

- In March awareness about the effective use of our 3-bin system was broadened by arranging tours to our waste sorting facility for staff and students.

- **Tours**

Facilities Management has hosted several tours which included tours to the PV System on the roof of the Neelsie, tours to the new and improved MRF as well as a Green Building tour of the Jan Mouton building, the greywater system at Majuba and lastly the non-motorised transport route. The tours were open to both staff and students and both groups thoroughly enjoyed it and are looking forward to the next set of tours.

- **Green Living Awards**

FM, together with other departments at SU, have developed a reward system based on a competition between Residences and PSOs. The aim of the Green Living Award is to promote sustainable living practices within Residences and Private Student Organisations (PSOs) to reduce the negative impact that we have on the environment and resources. This competition aims to encourage fundamental lifestyle changes amongst all students at Stellenbosch University by making students more aware of the necessity of reducing, reusing and recycling of utilities whilst increasing biodiversity and including the 17 Sustainable Development Goals. The document has been sent to a few departments of SU to provide input on how it can be improved.

- **Earth week celebration**

April engagement activities culminated in celebrating Earth Week in collaboration with various student groups, creating new initiatives like the Environmentally Sustainable Campus amazing race, the Green Market and Discussion events, also incorporating our thought provoking Neelsie PV panel tours more visits to our MRF, and community cleanups. This year we have organised 5 tours compared to last year where 2 tours were organised.

- **Sustainability Calendar**

Facilities Management has developed a calendar which commemorates the special sustainability days etc.

The themes that we use in the calendar helps to drive a collective message in events planned and social media campaigns. In February the focus was on how to embrace sustainable living on campus with the residences giving input when the newcomers arrived with workshops and activities during the welcoming period.

In March the focus was to reduce waste with supported tours to our MRF, April focus was on reducing energy and culminated in the experimental, but very successful Earth week with students. The 2023 calendar is in the process of being updated.

Stellenbosch UNIVERSITY IYUNIVESITHI UNIVERSITEIT
forward together sonke siya phambili saam vorentoe

CALENDAR 2022

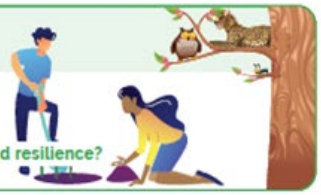
ENVIRONMENTAL SUSTAINABILITY

MAY

BIODIVERSITY

20 MAY ENDANGERED SPECIES DAY
22 MAY WORLD BIODIVERSITY DAY

In which ways am I engaging with nature to ensure a healthy biodiversity to build resilience?



JUN

CLIMATE CHANGE

5 JUN WORLD ENVIRONMENT DAY
8 JUN WORLD OCEANS DAY

How does climate change impact me?

JUL

CARBON FOOTPRINT

1-31 JUL PLASTIC FREE MONTH
28 JUL WORLD NATURE CONSERVATION DAY

How do I help SU to reduce its carbon footprint?

AUG

ENERGY & EMISSIONS

1-31 AUG STUDENT LEADERSHIP HANDOVER MONTH
19 AUG NATIONAL BEE AWARENESS DAY

What energy can I afford to lose?

SEPT

TRAVEL & MOBILITY

1-7 SEPT NATIONAL ARBOR WEEK, TREE PLANTING SEASON ENDS
22 SEPT WORLD CAR FREE DAY
24 SEPT WORLD RIVERS DAY
28 SEPT GREEN CONSUMER DAY

Is my footprint filled with fossil fuels?

OCT

CLIMATE CHANGE - RESEARCH & UNITY

14 OCT WORLD E-WASTE DAY
16 OCT WORLD FOOD DAY
28 OCT SUSTAINABILITY DAY

The students organised and hosted their very first Environmental Sustainability Amazing Race. The purpose of the race was to make themselves aware of all the environmental sustainability projects on campus as well as how staff and students can interact with these projects for a greener campus. This a good way of making learning about Environmental Sustainability fun as well as network with other interested students.

The community clean-up was also part of one of the activities for Earth Week. Students gathered a few members of the community to join them in picking up the litter in the area. This also encourages community as well as encouraging members of the community to take action in ensuring their living area is clean and litter-free.

Members of FM organized tours which included a tour of SU's MRF as well as the PV panel project on the roof of the Neelsie. There were two separate groups where one was specifically for staff members and the other for students. These tours were well-received where staff and students felt inspired to do their part to contribute in lowering SU's consumption.

- **Food Gardens**

The two food gardens one at Tygerberg and two at Stellenbosch are managed by the students and help to create awareness to grow vegetables and be a place for recreation and conversations about sustainability.

FM piloted the food garden project in 2018 where we provided a gardening area, seedlings, and tools for students to kick off their plots.

In 2021 the students took initiative to develop the project into a student society. In 2022 they have called themselves The Maties Gardening Society. More students have signed up since the birth of the project where the students have made it their own.

DACES at Tygerberg campus has taken the initiative to develop and manage the food gardens located close to the medical campus.

The garden is also being managed by the medical students together with a few staff members.

- **Information sessions**

Focussing on the training of, and engagement with new student leaders help them to plan their year programs and engagements with a clear understanding focussing on a outcome of behaviour change and reduction in utilities and our institutional carbon footprint.

- **Tree planting projects**

Several tree planting projects were organized during the winter planting period and many staff and students took part in this great initiative of increasing our biodiversity. The purpose is to create a more biodiverse, greener and oxygen-rich campus. Wild Olive and Yellow trees were planted to provide shade along the walkways and also to draw birds and insects. A total of 67 trees was planted throughout this project.

- **Leadership training**

The newly elected student leaders were trained and informed on environmental sustainability and how to mobilize fellow students and contribute to result in behavior change to a much greener campus.

- **Environmental sustainability training medical students**

All first year medical students on Tygerberg participate in an awareness and training course over three days to familiarize them with environmental sustainability, projects implemented by SU and how they can play their part.

- **Green X Engineering Intervention**

GXE is a company that finds energy solutions through data analytics, modelling, consulting and interventions. FM is working together with GXE in a research study to find out what are the most effective methods of behavioural interventions to encourage students to consume less electricity at selected residences. The poster below is one of the many interventions that GXE plan on testing.

- **Communication Structure**

FM has developed communication platforms to mobilise and inform like-minded students in the line of environmental sustainability. We have started a WhatsApp group to improve the flow of knowledge transfer to the Sustainability House Committee members of each residence and PSO which empowers these students to train their student communities to change their behaviour to lead more sustainable lives.

FM has also developed and Instagram page to send out any communication with what SU is doing for sustainability as well as to connect to the student and staff community to collaborate with us in our projects.

There have been many videos that has been developed for a number of events which include:

- Earth Week
- The HEFMA Conference
- Waste Management
- Food Gardens
- Greywater system

We use these videos to create awareness as well as to document these sustainability activities to display onto our social media networks.

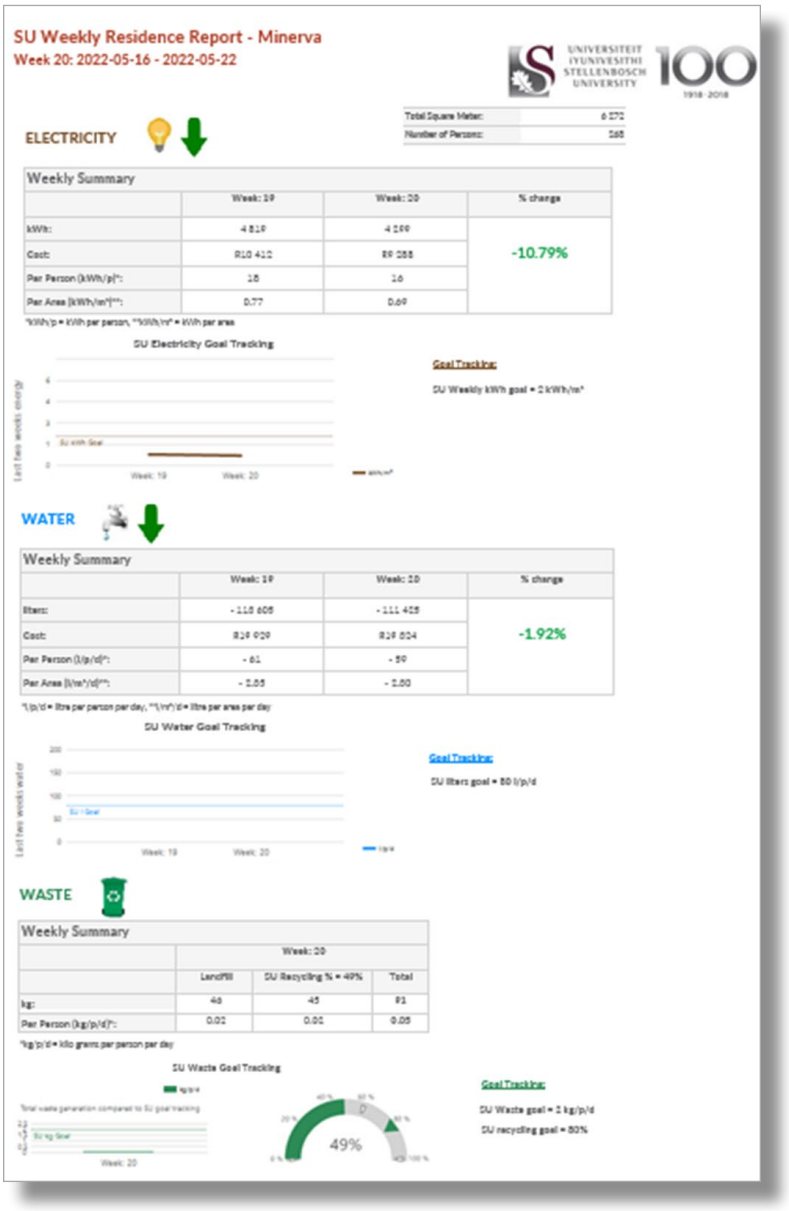
- **Vendor training**

Most of the vendors have now been contacted and worked through the Materials Handling Document. All the vendors and cleaning companies have also attended waste sorting workshops where the effective use of the 3-bin system was explained. Inviting the vendors to the tours to the MRF to see how our waste is recycled helped them to understand why we need to reduce the waste we send to landfill and how their packaging is contributing. The Neelsie vendors were also invited to the Neelsie PV panel tours to give an understanding of the importance to reduce our energy consumption.

- **Student Dashboard/ Weekly Report**

The student dashboard is sent to students to inform them of their utility usage and to promote behaviour change. The Residence Service Coordinators are also now included, and the feedback is that they find it very helpful to motivate savings behaviour.

This report forms an important element of the SU sustainability journey to nett zero carbon emissions.




RVCA