

#MYNFWU

FACILITIES

14 March 2024

www.nwu.ac.za



FACILITIES KEY FOCUS AREAS before 2023...

Integrated Management System = People

Processes / governance

Technology

to deliver on our mandate

COVID-19

3x Chief Dir

FACILITIES KEY FOCUS AREAS 2023...

- Client/customer engagement and satisfaction
- Energy management and efficiency
- Environmental sustainability
- Space management and optimization
- Infrastructure planning and development
- Planned and (vs) reactive maintenance
- Digital business transformation (SHE System and IWMS)

ENABLING THE NWU DIGITAL BUSINESS TRANSFORMATION STRATEGY

10 IWMS MODULES IMPLEMENTED SINCE 2021



ENABLING THE NWU DIGITAL BUSINESS TRANSFORMATION STRATEGY...

Digitalization & AutoCAD

The CAD Integrator enables the visual view of spatial Facility Management information in floor drawings on IWMS. **Space data integrates with floorplans which provides vital management information to inform space planning decisions.** IWMS users have access to NWU building floorplans.

HIGH LEVEL CAD INTEGRATION PROCESS



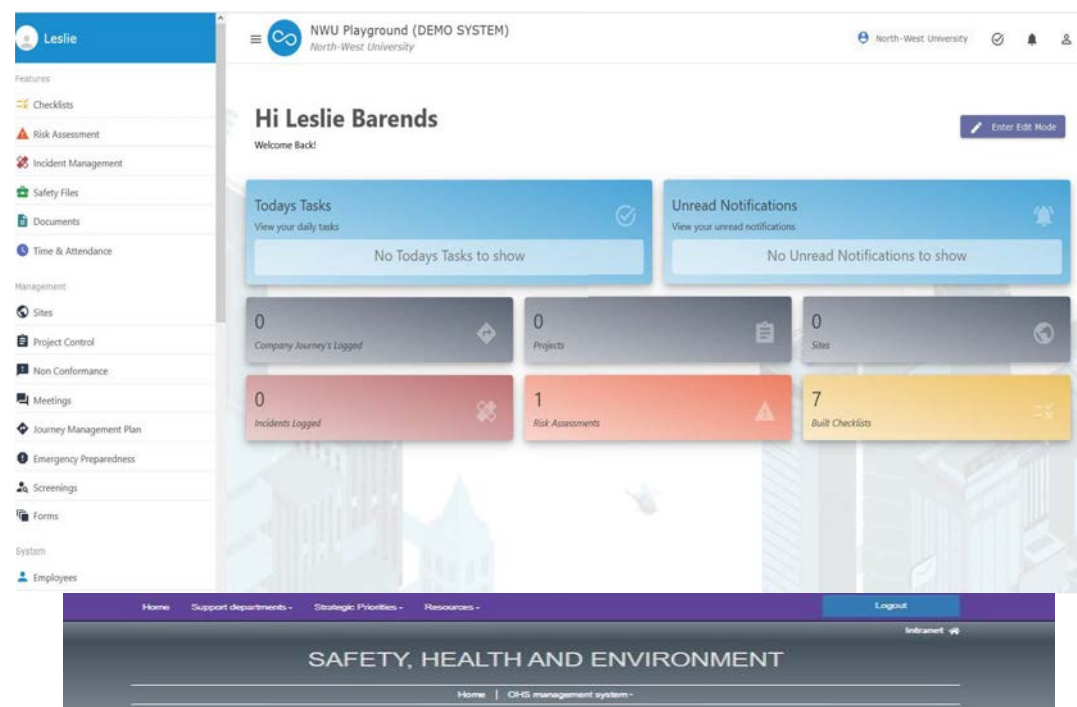
Project details:
Conduct site audits and convert all NWU floorplans to system standards & requirements.

Project Status:
Site audits 70% complete
DWG import to IWMS 10% complete
Target completion date: June 2024



- The criteria for space mapping are:
- Space categories (HEMIS)
 - Departments (OU)
 - Space types
 - Cost centers
 - Tariff groups Space standards
 - People per space
 - Workspaces
 - User-defined (custom)

ENABLING THE NWU DIGITAL BUSINESS TRANSFORMATION STRATEGY...



The **NWU SHE electronic system** has been set up and the SHE team is undergoing training in March 2024. Roll-out to the NWU units will commence in July 2024

Safety, Health and Environment - Home

It is the responsibility of the Safety, Health and Environment (SHE) division to oversee and coordinate efforts to ensure that the NWU meets its legal obligations pertaining SHE requirements, and to provide a SHE management system and assistance to faculties and departments in their efforts to comply with all SHE regulatory requirements.

OHS Management System

- Legislation
- Organisational Management and Reporting
- Training
- Risk Management
- Emergency Management
- Incident Management
- OHS Operational Control

Environmental Sustainability

- Fauna and Flora
 - Unfed monkeys
 - Common snakes @ Mahikang
 - Common snakes @ Vanderbijlpark
 - Ban plastic poppers
- NWU carbon footprint report for 2022

Quick Links

- SHE policies
 - Occupational Health and Safety Policy
 - Smoking Policy
 - Environmental Sustainability Policy
 - Environmental Sustainability Guidelines
- Emergency preparedness
 - Emergency numbers
 - NWU emergency procedures
 - Procedure: Evacuation
 - Procedure: Incident reporting and investigation
 - Procedure: Medical treatment injuries / major incidents
 - First reporting form
- SHE/OHS training
 - Training procedure
 - Schedule a health and safety training session
- Report a SHE hazard
 - Who to contact
 - MMMS OHSi Dashboard

NWU SHE webpage launched in 2024 – all NWU SHE documents has been revised and updated to meet legal requirements.

NWU FACILITIES OVERVIEW 2023



- 963 buildings
- 11707 beds
- 533 ha of land
- 156 space & Infrastructure requests
- 3-5 year infrastructure plan

- 32810 reactive w/o
- Planned maintenance
- Condition assessment under way

- 11931 reactive w/o
- Electricity demand @14280kW
- Back-up 11700kW

- 190 projects
- R3bn Capex
- 23 project team (PM's, Coordinators, Admin)

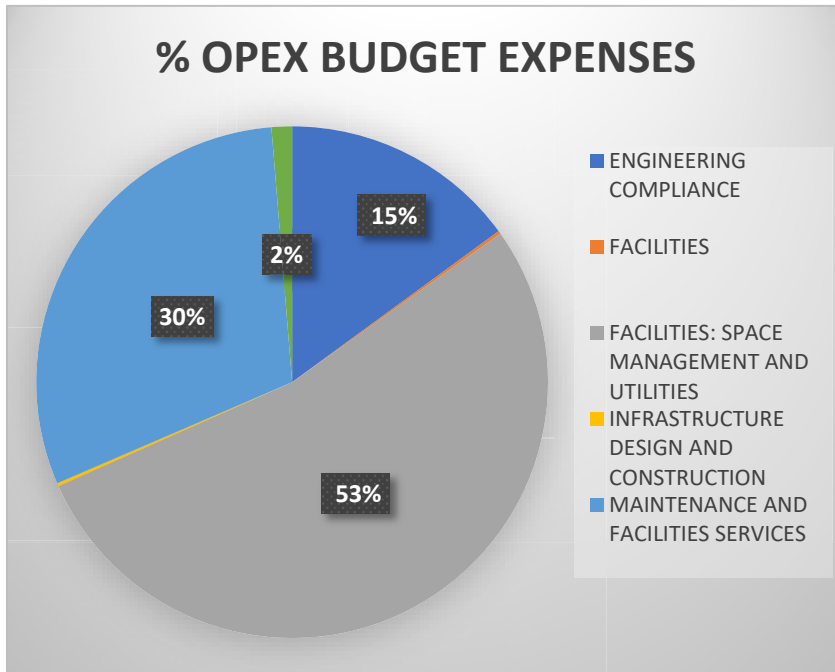
- 50 Tons of Hazardous Waste Recycled.
- 97,4 tCO2e (2023 Carbon footprint)
- 28 COIDA incidents
- 612 staff OHS training

Building Areas	R - Value 2021	R - Value 2022	R - Value 2023	R - Value 2024
Insurable asset value of NWU property				
Total	R9 902 245 422	R10 890 827 697	R13 336 339 695	R14 830 009 740
	2,68%	9,98%	22,45%	11,20%

2023 PERFORMANCE OVERVIEW

OPEX BUDGET

SOF 1 Summary	2024 Budget	2023 Budget	2023 Actual Expenses	2023 % Expenditure
Income	R0	R0	-R180 735	
Salaries	R50 909 126	R50 948 131	R44 650 058	87,6%
Operating Expenses	R321 097 231	R268 992 049	R249 011 729	92,6%
Capital Expenses	R5 280 984	R1 407 038	R12 609 200	896,2%
Grand Total	R377 287 342	R321 347 218	R306 090 252	95,3%



CAPEX BUDGET

OPENING JANUARY 2023	VALUE	QTY
PLANNING STAGE	R 824,834,198	72
PROCUREMENT STAGE	R 320,843,327	27
CONSTRUCTION STAGE	R 1,001,196,512	39
COMPLETED	R 137,424,355	8
TOTAL	R 2,284,298,392	146

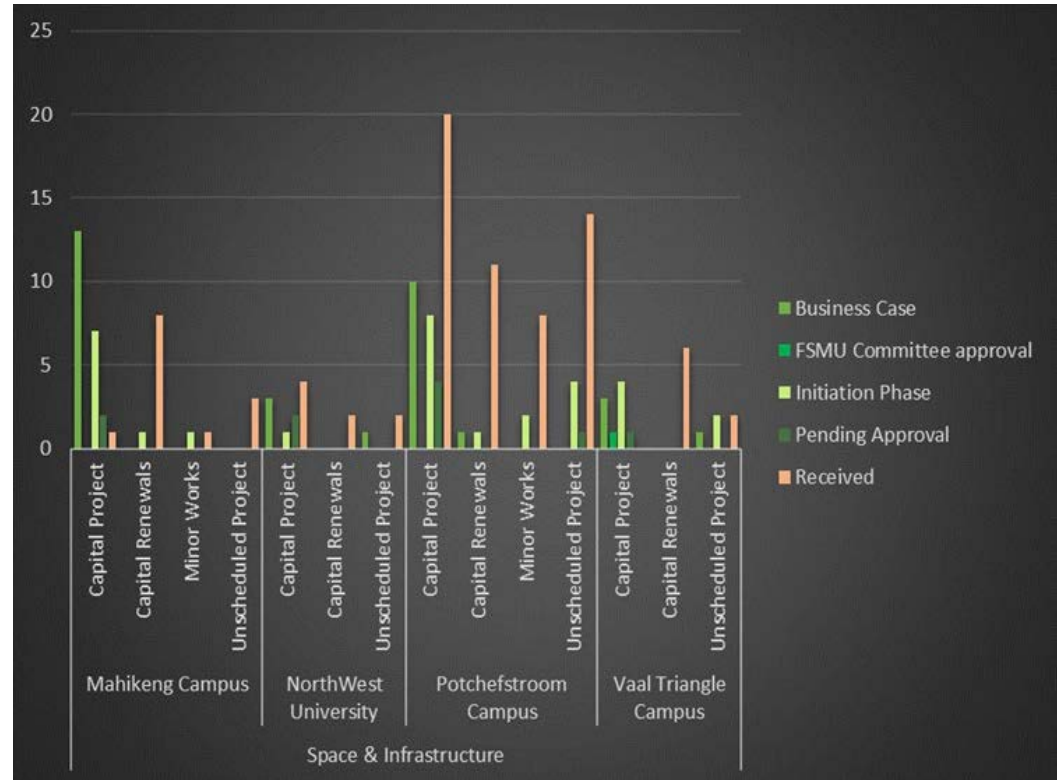
CLOSING DECEMBER 2023	VALUE	QTY
PLANNING STAGE	R 1,044,467,431	66
PROCUREMENT STAGE	R 493,149,695	26
CONSTRUCTION STAGE	R 685,335,005	48
COMPLETED	R 850,834,607	50
TOTAL	R 3,073,786,739	190

BROUGHT FORWARD TO 2024	VALUE	QTY
PLANNING STAGE	R 976,024,518	60
PROCUREMENT STAGE	R 533,620,953	30
CONSTRUCTION STAGE	R 633,413,681	41
COMPLETED	R 660,500,085	19
TOTAL	R 2,803,559,237	150

SPACE & INFRASTRUCTURE REQUESTS

Current status of investigations on IWMS

Status	No of investigations
1. Received	82 (40 in 2024)
2. Initiation Phase (Initial investigation to arrive at initiation report – Stage 0)	31
3. Business Case (Inception – Stage 1 and Stage 2 Concept and Estimation)	32
3. FSMU Committee Approval (Assess Business Case and Toolkit)	1
5. Pending Approval (Business Cases being revisited according to Toolkit – to be included in June 2024 Council approvals)	10
	156



Investigations per staff member

J. Bezuidenhout – 41

B Dhalamini – 46

J Jacobs – 68

L v Wyk – 1

3 fixed term positions in recruitment

NWU ENVIRONMENTAL SUSTAINABILITY STRATEGY

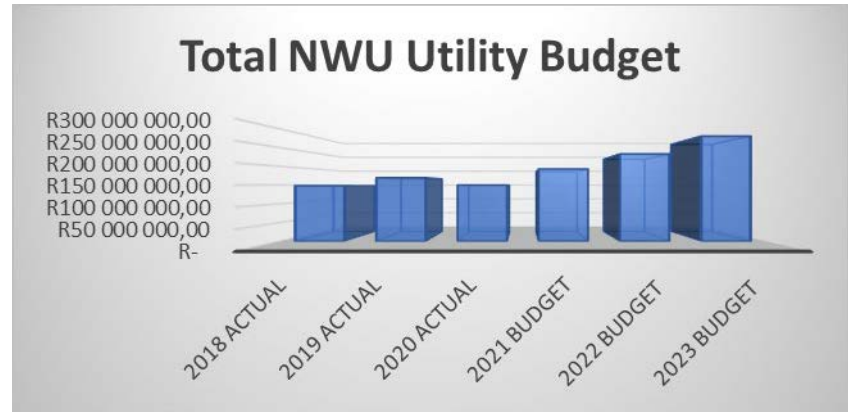


- Implementation of 5 Pillar environmental strategy – measure accurately / Change behavior / Optimise installations / Green building design and energy efficient buildings / PV plant and own water treatment plants
- 2024 APP target – **5% reduction in energy consumption**

ENERGY MANAGEMENT AND CONTROL – Pillar 1

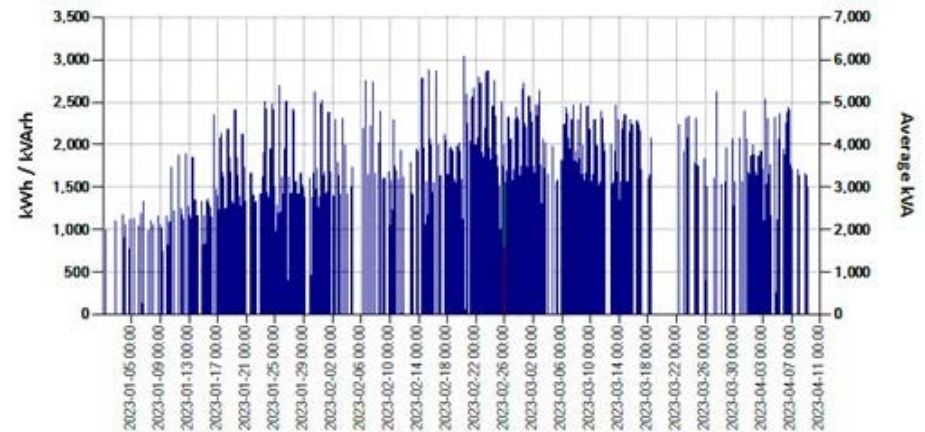
Energy Measurement

- The NWU has a central energy metering system consisting of more than **1700 energy meters**
- As per the Energy Management pillars, the metering points are being expanded and will reach **2000 by end 2024**
- This **data** is used for energy control, Carbon footprint calculations, capacity calculations, utility bill verification and energy reporting.
- NWU **Utility budget was R372m** for 2023 inclusive of Diesel



Energy saving initiatives being used

- **Maximum demand control**; where the large energy users such as hot water plants are being switched off during peak hours and heated up when electricity is cheaper as per utility tariffs
- **Maximum (Peak) Electricity Usage per campus:**
 - MC 4 848kW Generator capacity 3 600kW
 - PC 7 882kW Generator capacity 6 400kW
 - VC 1 550kW Generator capacity 1 700kW
- Replacement and Installation of **Energy efficient equipment** especially for equipment being used 24 hours a day.



PM: [E15] Generator Incomer Total - ION7650 (PJ-0808A482-01)

Emergency generators use during Loadshedding for Potchefstroom Campus 2023

ENERGY MANAGEMENT AND EFFICIENCY – Pillar 3 & 5

Achievements for 2023

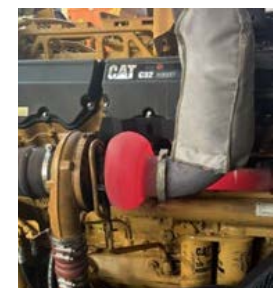
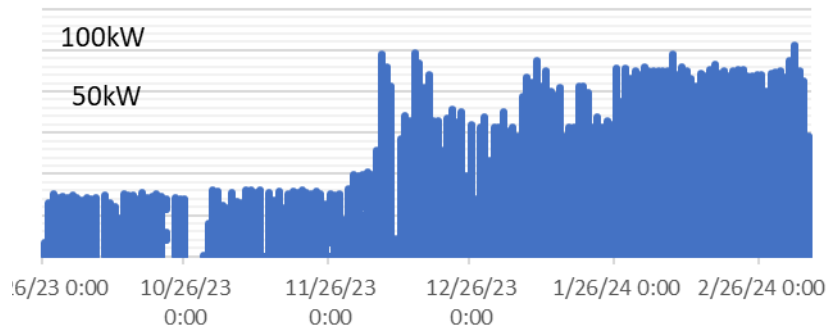
- We have installed **420 emergency light packs** in the residences and building being used 24 hours a day to allow for light during power outages
- students were issued with **battery handheld lights** to enable them to function during power outages
- **150 streetlights** were replaced with solar/battery units to supply light for most used walkways
- Majority of the **Sport field lights were upgraded to LED** such as Hockey, rugby practice fields to reduce electrical usage and be immediately available after a power failure
- **4718 LED tubes** installed some **with dimming capability to reduce energy usage when no movement is detected** in the areas such as bathrooms, kitchens, parking and hallways
- **100kWp Solar plant** installed on the Library of Potchefstroom Campus, the system do operate with the generators as well which is a great benefit as it reduces the requirement for emergency power
- Mahikeng library **100kWp Solar plant** in process
- **385kWp** solar plant at Vanderbijlpark campus in process
- **1000kWp** solar plants at Potchefstroom campus in process
- **Additional Diesel storage tanks** installed to supply the Generators

Cost saving as per above achievements

- **Replacement lights** appr. 278 000kWh relating to a saving of **R730k per annum.**
- **Maximum demand control** saving off **R 1,5 mil per annum**
- **Solar plant at the Library** generated 640 000kWh relating to a saving of **R2,11mil** at an Effective cost savings of **R3,3 per kWh**



Library Solar production 100kWp



ENERGY EFFICIENCY AND SUSTAINABILITY Pillar 2 & 3

New and future initiatives

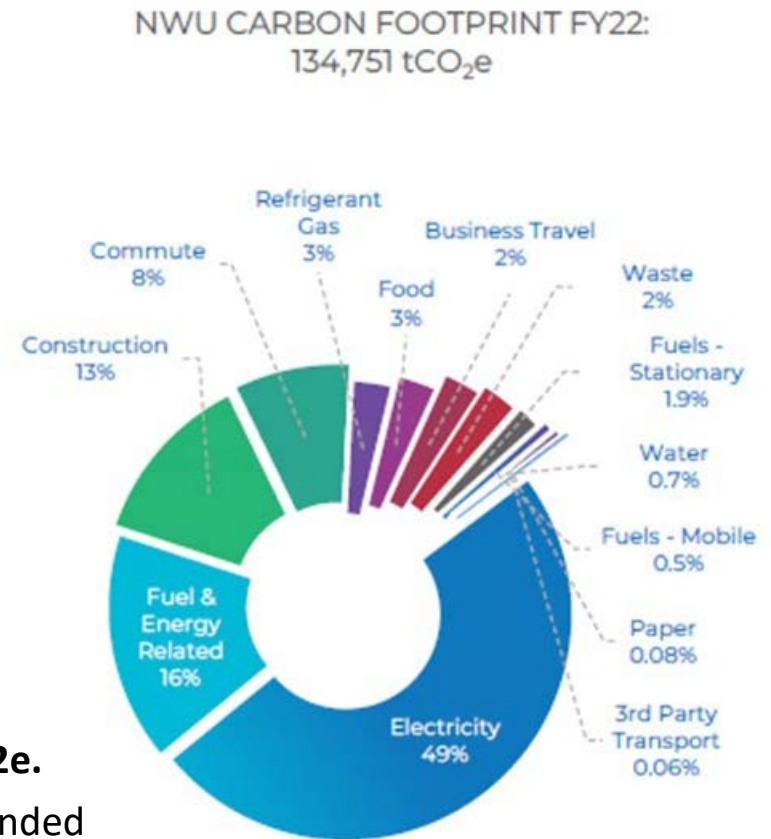
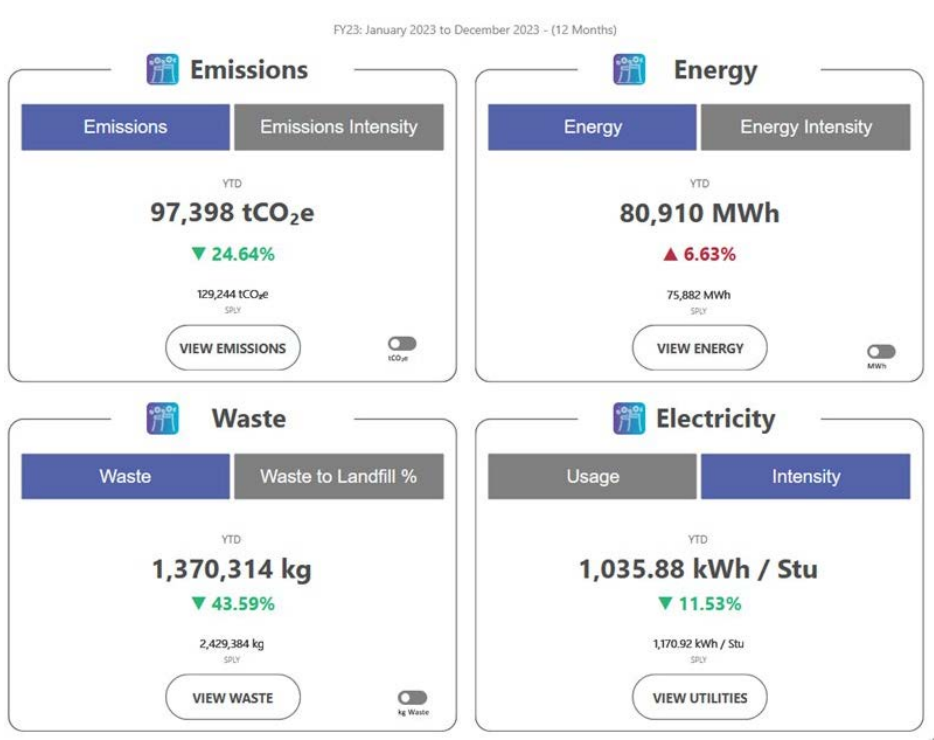
- Install **Two new Emergency generators** at Mahikeng campus
- Install **1000kVA Emergency generator** plus **500kWp solar system** at K-blocks Potchefstroom campus
- Install **1000kWp solar systems** on Mahikeng Campus
- Install **1000kWp phase 2 solar systems** on Potchefstroom Campus
- Replace lights with **energy efficient products, 5000 units for 2024**
- **Improve Emergency generating plants** to enable prolonged usage times during stage 4 – 6 load shedding with use of thermal cladding
- **Expand metering and improve energy control**, controlling equipment like office Air conditioners, hydro boils and geysers by means of using IOT(**Internet Of Things**) devices through the IT network and WIFI
- Automatic switching off the residences during loadshedding in office hours (**internal loadshedding – “reduce the use”**)
- **Improved remote monitoring and control** of all energy using equipment and emergency power units to improve EC performance while having a small staff component.

Did you know?

The optimal temperature for solar panels is around 25°C. Solar panels perform best under moderate temperatures, as higher or lower temperatures can reduce efficiency. For every degree above 25°C, a solar panel's output can decrease by around 0.3% to 0.5%, affecting overall energy production

ENVIRONMENTAL SUSTAINABILITY

2023 Achievements



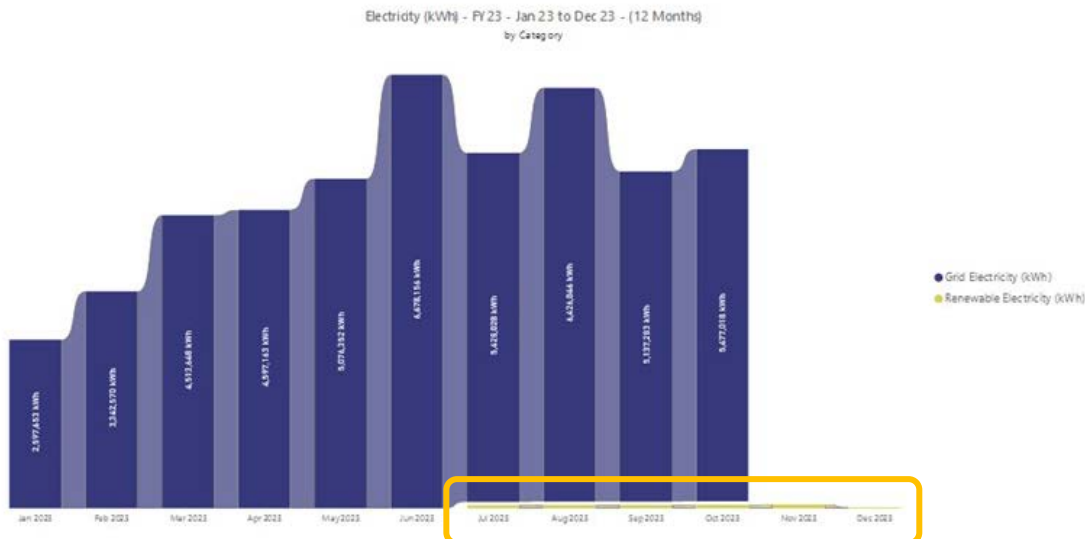
- **Reduced NWU carbon footprint in 2023 by +35tCo₂e.**
- **We improved our data capturing methods** and expanded to ensure we accurately measure our carbon footprint.
- **Hazardous waste (50kg) through thermal absorption process** – almost zero emissions
- We have a **live dashboard** that will track our footprint and efforts to reduce it.

ENVIRONMENTAL SUSTAINABILITY

2023 Achievements....



- Created awareness on **#reduce the use + #beat plastic pollution**.
- Mahikeng dosing plants being upgraded to ensure **water** can be treated to ensure **safe for consumption**.
- **PV plants per campus in tender and construction phase** – the yellow on graph indicate our renewable energy has started to reduce our grid energy use
- **Water treatment plant in planning phase.**
- **Waste recycling tender out at start of 2024.**
- **Biodiversity tender out in March 2024.**

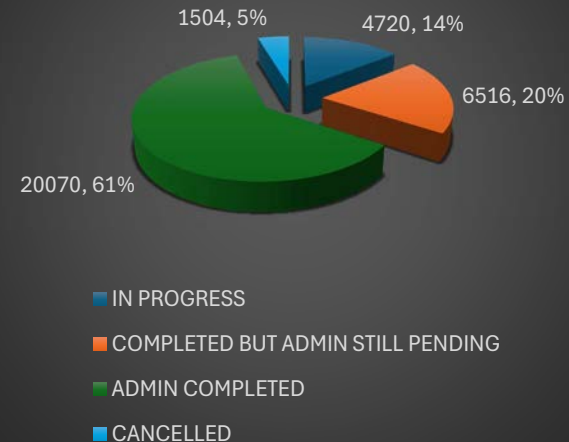


2023 WORK ORDERS COMPLETED (reactive maintenance)

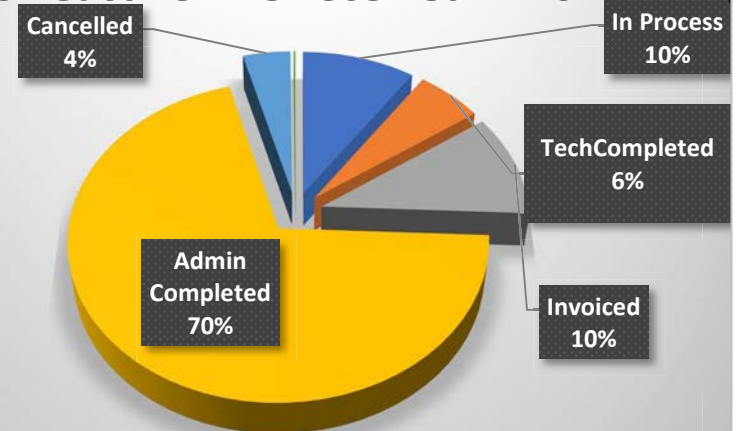
IWMS work orders statistics for 2023

- **FMS:** Total Work orders received is **32810** equates to MC 9692, PC 18294 and VC 3509
- 2023 Work orders completed is 81% and 14% of work orders are still open while 5% was cancelled.
- FMS have **39 staff members** to perform all maintenance work required for both campus and residences in all campuses assisted by Maintenance Service Contractors.
- **1 funded vacancy** is at the final stages of being filled with a business case also being finalized for **3 maintenance coordinator positions** to replace positions that have become redundant in the structure.
- **EC:** Total Work orders received **11 931** equates to MC 3215, PC 6455 and VC 1987
- 2023 Work orders completed is 90% some work orders are still open.
- EC have **13 staff members** to do the statutory required work for both campus and residences.
- The GMR 2.1 and 4 x GMR 2.7 accountable for compliance as per OHS act is in EC
- **5 vacancies** are in process to be filled with 3 additional new positions to allow for standby and reaction as per loadshedding requirements

FMS - Reactive W.O Received in 2023



EC Reactive W.O received in 2023



PLANNED MAINTENANCE – BUILDINGS AND FACILITIES

Achievements for 2023

Vanderbijlpark Campus:

- Academic: R 130,000,00
- Sport: R 6,000,00
- BED: R 230,000,00

Potchefstroom Campus:

- Sport: R 2,458,662,59
- Academic: R 3,190,000,00
- Sustainability R 3,460,000,00

Mahikeng Campus:

- Academic: R 1,219,925.21

Total Expenditure R 8,977,897,71

Plans for 2024

- Water saving project at Student residence
- Condition assessment of buildings

Vanderbijlpark Campus:

- Academic Buildings Maintenance
- Sport facilities upgrade

Potchefstroom Campus:

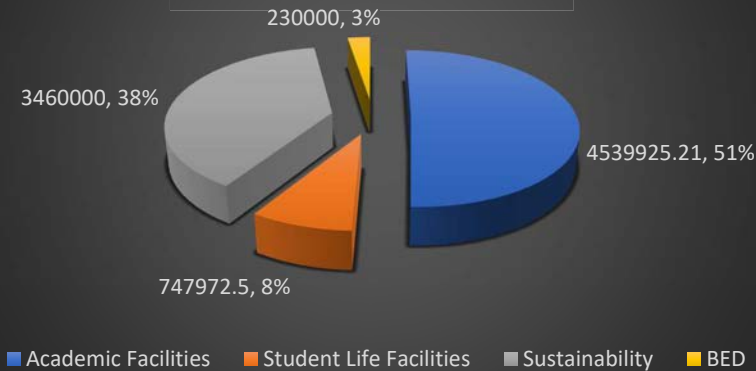
- Running track maintenance
- PV plant preparations
- Sport facilities bathroom upgrades

Mahikeng Campus:

- Student life buildings upgrades
- Garden upgrades
- Academic buildings refurbishments

Planned Maintenance Budget R16,022,102,30

FMS - Planned Maintenance Projects for 2023



INFRASTRUCTURE DEVELOPMENT 2023

Infrastructure Development	Mahikeng Campus	Potchefstroom Campus	Vanderbijlpark Campus	Projects Across Campuses	Grand Total
DHET SH 2016/2017	R8,891,741				R8,891,741
DHET SH 2017/2018	R2,319,419				R2,319,419
DHET 2018/2021		R61,031,535	R44,673,171	R3,970,456	R109,675,161
DHET 2023			R19,995	R2,077,682	R2,097,677
Capital Projects (2017-2022)	R29,587,743	R86,205,159	R41,362,669	R35,990,543	R193,146,114
Capital Projects New	R6,120,603	R3,351,761	R1,922,976		R11,395,340
Capital Projects Renewals	R450,725	R11,853,270	R147,853		R12,451,848
Investigations	R502,272	R103,278	R206,230		R811,781
Minor Building Works	R1,459,838	R3,246,007	R555,511	R85,700	R5,347,057
Planned Maintenance (Macro)	R18,463,542	R15,530,607	R232,811	R12,087,831	R46,314,791
Grand Total	R67,795,885	R181,321,617	R89,121,216	R54,212,213	R392,450,930

We spent a total of R393 million for capital works, macro maintenance and minor works across the university in 2023.

INFRASTRUCTURE DEVELOPMENT 2023 – few highlights

Critical projects completed in 2023

- The new **student housing in Mahikeng Campus** consist of 6 clusters with a total of 1728 beds was completed in December 2023 with an expenditure of R456 686 779.
- The overall expenditure for 2023 on DHET Infrastructure Efficiency Grant (IEG) funding cycles is R122 983 999. A large portion of the expenditure (R109 675 161) is from the 5th cycle and some of the highlights includes the completion of the **Additional lecture spaces on the Vanderbijlpark Campus, the refurbishment of the previous Administration building into a multi-purpose hall facility on the Vanderbijlpark campus, and the new building for Psychosocial health in Mahikeng campus.**
- Building C6 has been completed to create **additional space at the educational sciences library PC.**
- On the **Mahikeng campus the new building for the community law centre** has also been completed and handed over to the user as well as the **completion of Building A2 & A3 to relocate the Faculty of Humanities, Education and Economic Management Sciences on the Mahikeng Campus**
- The **new laboratory spaces for education, the refurbishment of spaces for the schools of biological & Geospacial sciences in the Potchefstroom campus is currently underway along with the new Psychosocial building in the Vanderbijlpark campus.**

INFRASTRUCTURE DEVELOPMENT 2023 – few highlights

- The **new student housing in Mahikeng Campus** consist of 6 clusters with a total of 1728 beds was completed in December 2023 with an expenditure of R456 686 779.
- **Refurbish building 24 for multipurpose hall –VC.** The project was completed in 2023 with an expenditure of R29 249 192.



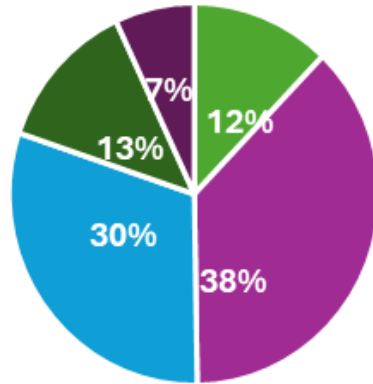
INFRASTRUCTURE DEVELOPMENT 2023 – few highlights

- **Refurbishment of spaces for schools of biological & Geospatial Sciences PC.** The project is 95% completed with an expenditure of R64 686 985.
- **New Psychosocial Building-VC.** The project is currently 60% to completion with a current expenditure of 32 785 699.



INFRASTRUCTURE DEVELOPMENT 2024

2024



- Sustainability Projects
- Academic Facilities
- Student Life Facilities incl. upgrade of Residences
- Deferred Maintenance and upgrades
- Support Facilities

Sustainability Projects (Overall Budget of R341,418,077):

- PV Plants Across the 3 Campuses (current overall approved value R144,177,000)
- Waterwise projects across 3 Campuses (current overall approved value R197,241,077)

Academic Facilities (Overall Budget of R1,053,565,238)

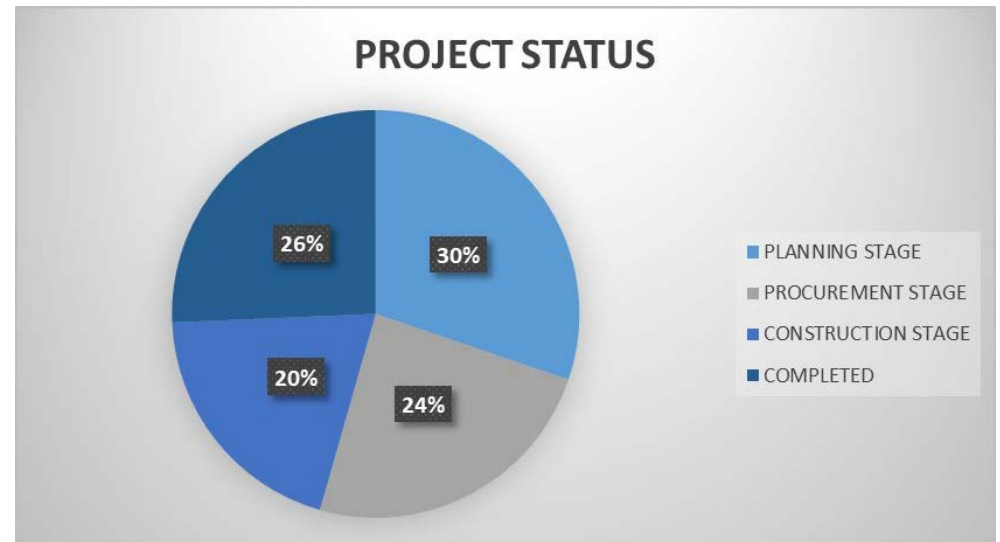
Student Life Facilities incl. upgrade of Residences (Overall Budget of R852,950,494)

Support Facilities & Infrastructure (Overall Budget of R195,174,386)

INFRASTRUCTURE DEVELOPMENT monthly monitoring

SUMMARY 2024											Feb-24	Jan-24
STAGE	MAHIKENG	QTY	VANDEBIJLPARK	QTY	POTCHEFSTROOM	QTY	NWU	QTY	TOTAL VALUE	EXPENDITURE TO DATE	TOTAL QTY	TOTAL QTY
PLANNING STAGE	R308 547 351	17	R102 253 926	10	R399 821 414	24	R37 130 085	2	R847 752 776	R32 476 477	53	59
PROCUREMENT STAGE	R205 703 637	11	R126 321 530	8	R281 039 183	14	R65 105 000	3	R678 169 350	R31 287 900	36	30
CONSTRUCTION STAGE	R31 727 457	7	R256 915 933	7	R216 647 361	14	R52 569 674	5	R557 860 425	R184 540 236	33	40
COMPLETED	R571 355 441	9	R64 660 295	5	R80 928 378	11	R3 000 000	1	R719 944 114	R620 216 756	26	20
TOTAL	R1 117 333 887	44	R550 151 684	30	R978 436 336	63	R157 804 759	11	R2 803 726 665	R868 521 369	148	149

PROJECT HEALTH STATUS TRACKER	Feb-24	Jan-24
ON SCHEDULE AND IN BUDGET	124	126
OVER SCHEDULE BUT IN BUDGET (EOT PENDING)	16	20
IN SCHEDULE BUT OVER BUDGET	2	0
OVER SCHEDULE AND BUDGET	0	0
NOT COMPLETED OR MITIGATED WITHIN CONTRACT DATE - EXCEEDS 100% PROGRESS IN PENALTIES	0	0
PROJECTS WITH NON/UNDER PERFORMING CONTRACTORS	6	3
TOTAL	148	149



STRATEGIC PRIORITIES 2024 - APP

Spatial Development
Framework
Implementation

School for Medicine
Investigation

Vanderbijlpark Campus
Student Housing
Investigation

Mining Engineering
Investigation

Universal (Disability)
Access Audit

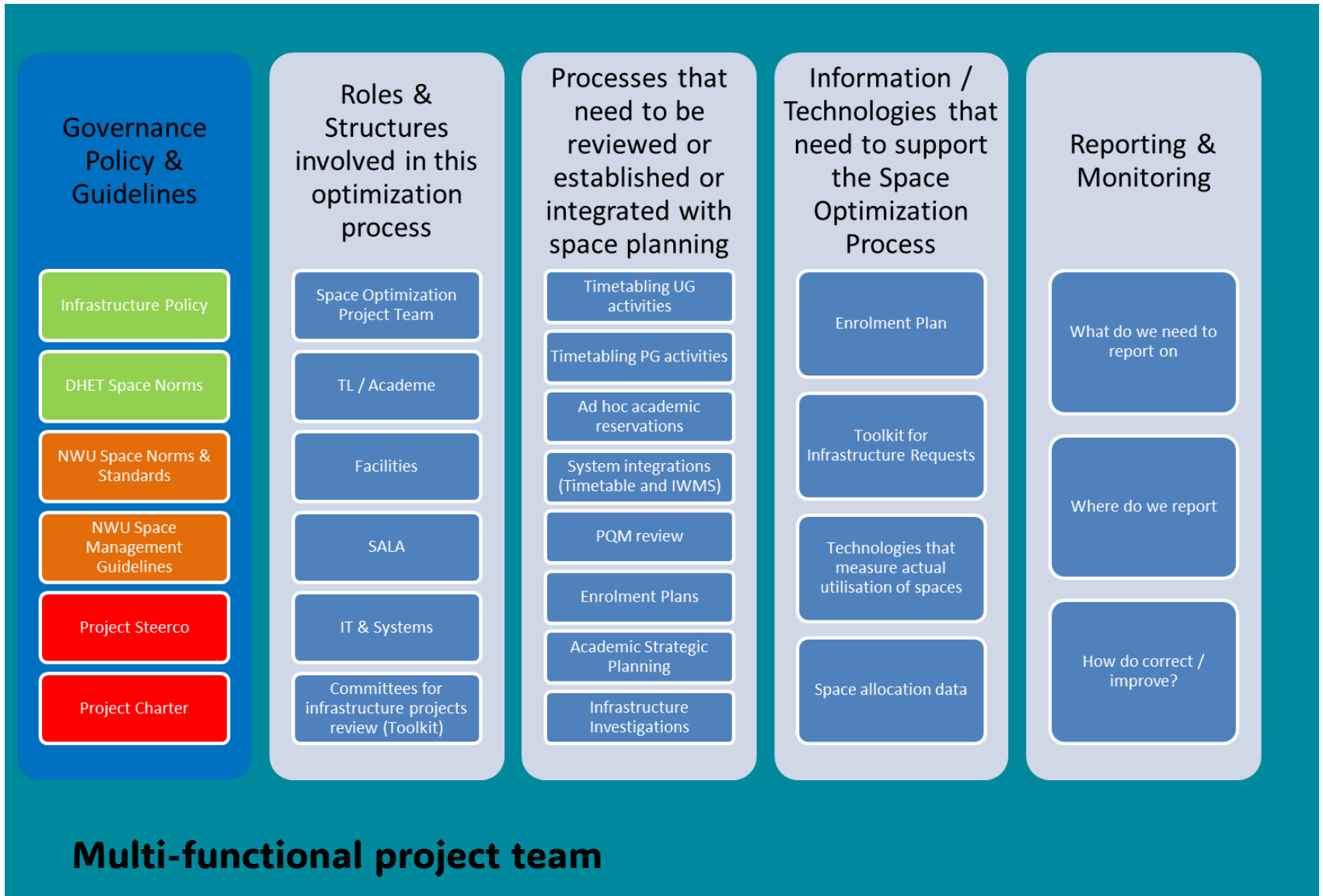
Utility Accounts
System
implementation

Improved Stakeholder
Engagement

Development of 5-year
Facilities functional
strategy

MOU's with local
stakeholders for shared
use of facilities

STRATEGIC PRIORITIES 2024 (SPACE OPTIMIZATION from SDF) - APP



Things to look forward to

- NWU Hosting of Netball Varsity Cup in 2024
- Hosting of HEFMA conference in 2025
- Energy efficiency and sustainability projects

#MYNWU

- **PROTECTION SERVICES**

14 March 2024

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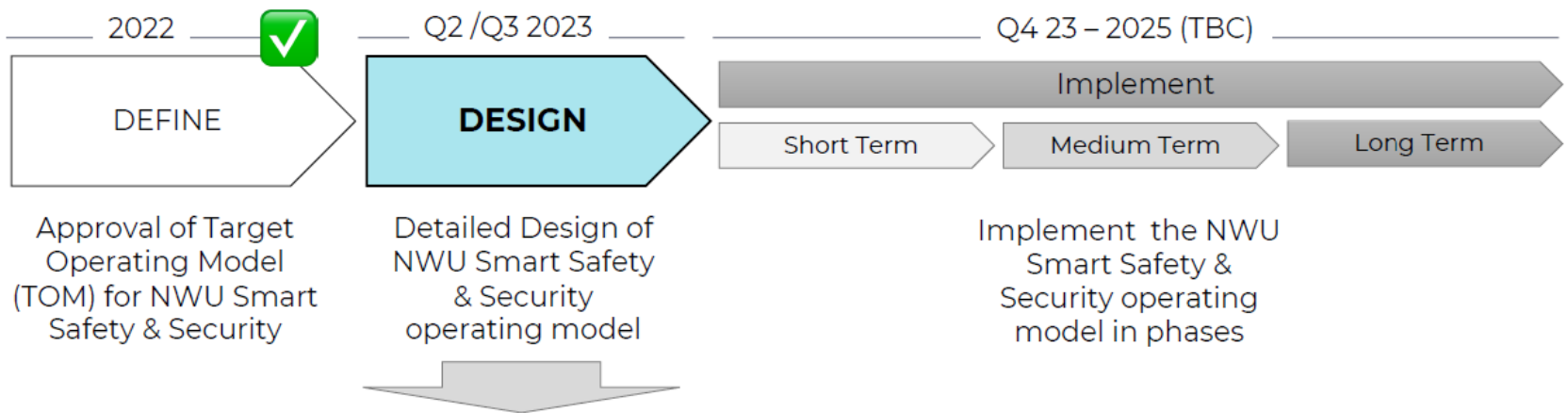
SMART SAFETY AND SECURITY - coming

Project Background and Case for Change

- Transition from a traditional 'Protection Services' function to a modern **information-led and proactive** 'Smart Safety and Security' model (Information-led Strategy)
- Uphold the core value proposition of providing a **safe environment for students and staff**
- Address the **inconsistency in services across various campuses** and the skills and capacity constraints to **accommodate a growing student population** whilst addressing **prevailing social and criminal issues** affecting university life
- Address gaps and limitations within the existing IT and Electronic Services architecture, to **leverage rapidly advancing digital, security, and automation technologies**
- **Tackle immediate operational challenges** identified within the Protection Services domain, including issues in incident management, access control, stakeholder identification and verification, and analysis and reporting

Need for a comprehensive solution that integrates the right mix of people, processes, and technology to establish an optimized and forward-thinking safety and security ecosystem

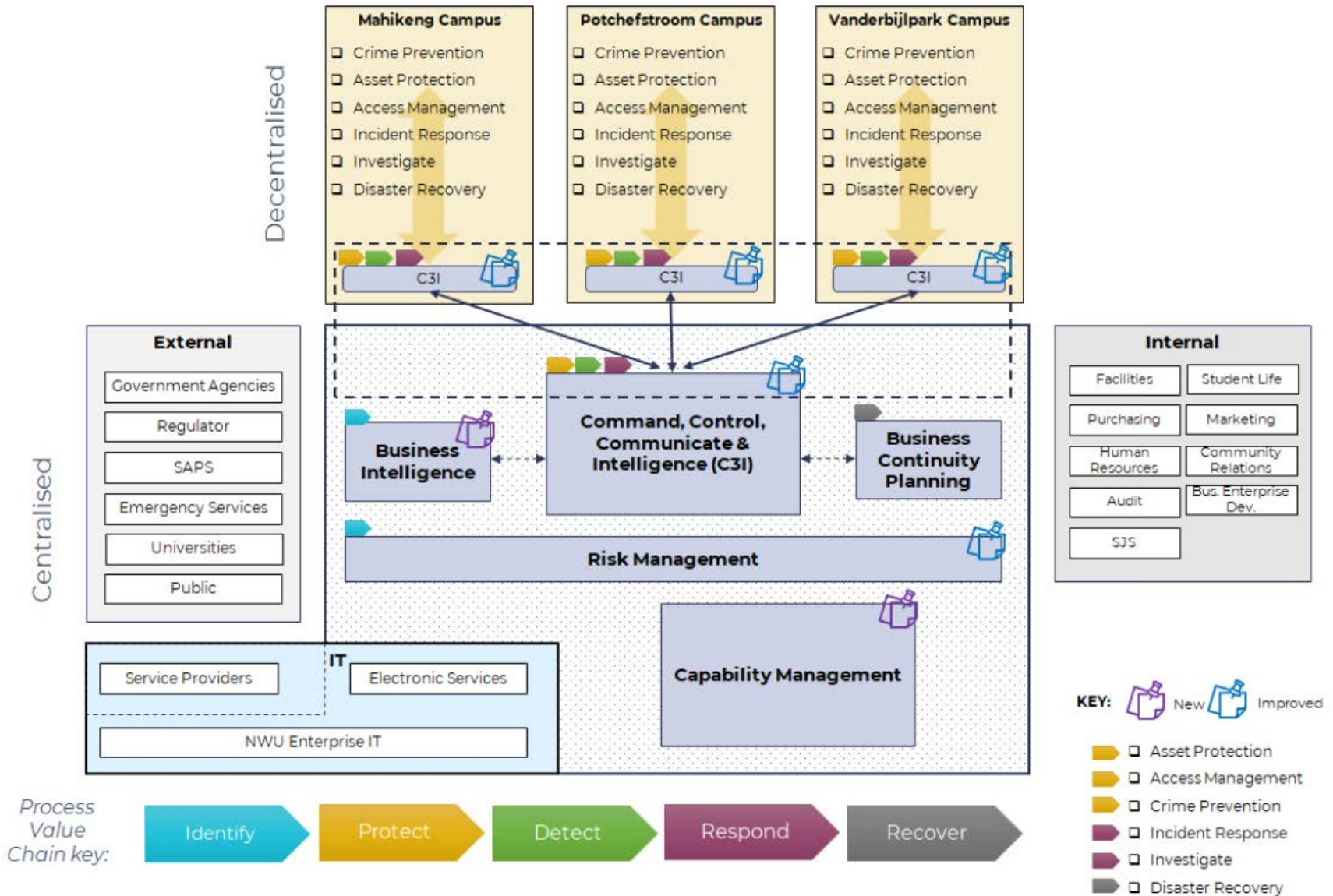
DETAILED ORGANISATIONAL DESIGN AND IT ARCHITECTURE FOR THE TO-BE SMART SAFETY AND SECURITY OPERATING MODEL



Design Stage includes the following workstreams:

- WS 1: Smart Safety and Security Model
- WS 2: Process Mapping and Standard Operating Procedures (SOPs)
- WS 3: Roles and Structure
- WS 4: IT Architecture and Roadmap

SMART SAFETY & SECURITY SERVICES OPS MODEL CONCEPT (ON A PAGE)



Thank you!