



OPERATIONS

2021 ANNUAL REPORT



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Annual Report 2021

OVERVIEW

Operations is a non-academic support division that offers services to faculties, academic support departments, students, staff and other stakeholders. It is tasked with maintaining all academic and support facilities in order for them to be readily available, accessible, functional and safe. Activities include the construction, refurbishment, general maintenance and cleaning of buildings, infrastructure, installations, sports fields, gardens and the development and upgrading of infrastructure in accordance with the clients' needs, with the objective of supporting teaching, learning, research, student life and the development of Fitness for Global Excellence and Stature through the striving to enhance the abilities of other departments and faculties to fulfil the following six strategic objectives of the University:

- Excellence in Research and Innovation
- Excellence in Teaching and Learning
- International Profile for Global Excellence and Stature
- Enriching Student-Friendly Learning and Living Experience
- National and Global Reputation Management
- Fitness for Global Excellence and Stature

The Operations Division is itself divided into a number of differentiated support departments:

- Central Technical Services (CTS)
- Property Management
- Occupational Health and Safety
- Logistics

All units have the joint aim of promoting the UJ as a preferred academic institution of choice of students and staff, by rendering services to support and promote the core business of the University, in whatever form possible - and within the means of the staff and resources available to this Division. The overarching goal of this expansive support is to enable the overall drive for excellence at UJ.

During 2021 recovering from the single greatest challenge in the history of the Operations Division – the Covid-19 pandemic – became the driving force for all activities in the four departments that make up Operations. Operations being an on-campus support division continued to be at the forefront of the drive to confront the changes wrought by the pandemic and to maintain the various operations that are required by all stakeholders at all times, irrespective of conditions in the environment. Protection Services, Campus maintenance and the CTS development staff, Logistics and the Property Management staff were required to continue providing services required, notwithstanding the reduced but still prevalent pandemic risks. Staff continued working in a blended “work from home” (WFH) and “on-site office work” format and were able to continue to provide all the necessary support because of their dedication to keeping all campus services running, even at the most difficult of times. For this the UJ can only express its gratitude to the staff who displayed exceptional levels of loyalty and resilience. As a direct result Operations also spearheaded a review of the UJ Business Continuity Plan processes, to extend and revise the

standard Building, Equipment, Technology, Human Resources and Third Party (BETH3) continuity planning document of the UJ to include a risk review for “extra-ordinary” events that require a more adaptive, less tick-box, business continuity planning approach.

SIGNIFICANT RISKS AND RISK MITIGATION DURING 2021

Lack of human resource capacity in CTS and Logistics

Lack of human resource capacity in Central Technical Services (CTS), Property Management and Logistics is abating, albeit slowly. A few key posts, (e.g. the Director Logistics, the Director Property Management and the CTS Operations Maintenance Manager), were filled during 2021. In some departments the ratio of temporary to permanent staff is still too high – putting Operations at risk of the loss of valuable institutional knowledge, should temporary posts be filled by new persons. The in-depth investigation into the structure of all departments in Operations undertaken in late 2019 and reported on by 21st Century was formally approved late in 2021 and will be implemented – funding dependant – during 2022. This will specifically allow for greater management concentration on utility usage and overall campus sustainability and a better integration of general facilities management across the CTS and Campuses domains. The realignment of some departments in Operations to reflect more modern professional groupings is specifically to be welcomed. Staff churn was reduced in 2021 – but perhaps only because of the difficulty to find alternative employment while the worst of the pandemic was still raging.

The Library upgrade project

The installation of the lift required for People with Disabilities (PWD) in the DFC Library Coffee Shop was completed in 2021 and now the only issue remaining is the fire escape staircase that must be completed in 2022.

Contracts

Renewal of Maintenance Contracts was a new risk identified in 2017. Operations now has completed a review and replacement process of all out-of-date Service Level Agreements (SLAs), and as a result preventative and SLA supported maintenance of all major equipment (such as backup generators and lifts) is part of a planned continuous maintenance programme. The filling of the CTS post of Maintenance Manager, who joined UJ in 2021, has had a major impact on this area of concern.

Audits

During 2021 Operations continued to work to resolve audit findings resulting from the 2017/8 Audit Review. This resulted in Capital Projects Planning and Execution with reference to Governance, Project Prioritisation and Business Case achieving a resolution of all but two of the audit findings – some of which have been partially addressed. This remains an ongoing area of work as a number of the audit items still remain to be addressed.

Table 1: 2017/8/9/20 resolution of audit findings for capital projects planning and execution with reference to governance, project prioritisation and business case

Previous Rating	Number of findings			
	Total previous findings	Findings resolved	Findings partially resolved	Findings not resolved
Major	4	4	0	0
Significant	12	10	2	0
Minor	0	0	0	0
Total	16	14	2	0
Percentage	100%	87.5%	12.5%	0.0%

During 2021 an additional Operations Facility and Maintenance Management audit was completed by the external auditors Deloitte. The audit was a risk-based external audit to determine the adequacy and effectiveness of controls within Maintenance Management, Security Management and Facilities Management within the Operations division. The objectives of the audit were to:

- Ascertain whether sufficient controls are in facilities and maintenance management to manage the risks identified by management to an acceptable level.
- Assess the adequacy and effectiveness of the internal controls with regards to each of the areas that were in scope related to facilities and maintenance management.
- Provide management and the Audit Committee with assurance on the adequacy and effectiveness of the internal controls in place related to facilities and maintenance management in order to manage significant risks down to an acceptable level.

Operations received the final report in August 2021 and while there were controls that were only partially effective there were no ineffective controls and only two major findings that were resolved before the final report was issued.

Based on work performed in line with the agreed scope we can conclude that the controls evaluated are partially adequate and/or partially effective.

Backlog maintenance

The significant Backlog Maintenance project is ongoing. Special emphasis was placed on this, especially at the residences, to eliminate some of the recurring backlog issues. This was made possible through additional DHET and UJ funding. But funding remains a lesser problem than that of vacant posts and the difficulty of sourcing staff with the appropriate experience and determination. During 2021 more than only R17.5m was spent on the renovation of student residences and while this is a great increase over 2020 it is a matter of particular concern that Operations is not able to reduce the overall student residence backlog maintenance needs. Additional to this was R15m spent on other Backlog Maintenance projects, including renovations in libraries and lecture venues. Unfortunately, the DHET IEG 6 funding applied for in January 2021 (and then re-submitted, after a re-stating of the aims of the IEG 6 funding instrument by the DHET, later in August 2021 again), and on which UJ had received very positive feedback from the DHET indicating that the funding would be approved has not materialized. The DHET IEG 6 application included requests for more than R70m in backlog maintenance funding – and as this was not received by the early 2022 funding date this puts much of the backlog maintenance for 2022 also at serious risk.

Electricity consumption

Electricity consumption remained at a lower than expected level (even though it is up from 2020) in 2021, primarily because of the continued low levels of activity on all campuses for much of the year. But this was also aided by the commissioning of the second wave of UJ Solar PV systems on the APK, DFC and SWC campuses. These types of system when properly implemented offer repayment periods (in terms of electricity savings – without taking into account the beneficial reduction in carbon generation) of less than four years. In 2022 it is expected that three more Solar PV systems will be installed on campuses – specifically tied to residences and various building roofs. An in-depth analysis during 2018 highlighted that energy use per capita varied significantly across the many student residences of UJ and mechanisms to reduce energy consumption in newer residences are already being implemented. All new residences have automatic light dimming and combinations of solar and reverse heat pump water heating implemented. Some of the older residences are proving difficult to upgrade to better efficiencies primarily because of older infrastructure designs that make energy reduction technologies difficult to integrate into the facility.

The rezoning of newly acquired properties

Town Planning applications on SWC: Consent use and township establishment for the various properties which form the SWC campus was approved during 2021. Town Planning applications via a consultant for the DFC erf consolidation and the Master Consolidation of APB Campus were in procurement during 2021 and should be completed in 2022. A start was made on integrating the Devland property, donated to UJ by Growing Up Africa, into the UJ portfolio in 2021 – resulting in discussions with the City about zoning and use for the proposed adult training facility in Soweto. This R80m property is a substantial addition to the UJ teaching and learning for community purposes. The rezoning of the newly acquired JBS Park was also started on in 2021 – converting this from a commercial to an educationally zoned property.

Town planning applications

Site development plans on all four campuses were lodged during 2021 for a variety of projects of CTS such as the new Science and Engineering Building and Rescue and Simulation Centre on DFC, the upgrades of various laboratories on APK and the upgrading of residences on APB as well as the lecture venue development in the basement of the JBS Park building. During 2021 most of these were approved – except for DFC where the City of Johannesburg is reviewing the parking bay requirements for the entire campus before approving any future site development plans. This request should be dealt with early in 2022.

Student Centres

Management of outstanding the debt, health audits and corporate governance controls of external tenants of the Student Centres is an ongoing support and control issue. Property Management and UJ Finance have had a number of interactions to develop a new, equitable mechanism for awarding contracts to potential tenants in the Student Centres. Even late in 2021 with the reduction in lockdown restrictions the Student Centres on all of the campuses are reporting between 25 and 50% further reductions in turnover – this was obviously a result of the 2021 lockdown periods reducing feet through the centres by more than 80% from the pre-pandemic numbers. As a result, in 2021 Property Management had to address tenant concerns and a variety of rental holidays and rental reductions were instituted to allow for the drastically lower number of persons on the campuses. In 2021 we again therefore did not serve tenants with letters of demand or requests to sign acknowledgements of debts because of the lockdown's impact on tenants. Even with these relaxations a number of tenants have given up operating in the Student Centres and in 2022 a serious effort will need to be made to fill all tenant spaces in the various Student Centres.

Occupational Safety: Fire and Chemicals

Storage of hazardous chemicals is not up to standard at the Laboratories in the John Orr Building on DFC but a project was put in place with procurement to update these cabinets. The APK C Laboratory Chemical Stores that were previously not compliant have been upgraded and the project completed in 2021.

A review by the external fire consultants Marsh in 2021 again reported that UJ met the minimum required fire safety standards and that all tested fire water lines and found to provide sufficient flow.

The first phase of the installation of fire alarms at 6 high rise residences of the 29 residences across all campuses, as a result of changes in the DHET Norms and Standards for Residences, was initiated and completed in 2021. During 2022 the remaining 23 low profile residences will also be upgraded to full compliance. So while it was originally proposed to implement the R18m project over 5 years it is now being completed with the use of the Strategic Initiative funds in 2021 and 2022. Escape doors at Kilimanjaro, Ndlovukazi and Horizon residences were again made compliant but ongoing vandalism of fire equipment and escape doors at student residences is a growing and concerning situation.

Transport

Risks around the intercampus bus service provider (StaBus) subsided totally and very few complaints were received in 2021. During 2011 there were further substantial savings due to the various lockdown levels – numbers of students transported however did rise over the year back to about 50% of the 2019 figures.

Also, as a consequence of the continuing pandemic in 2021, vehicle hire, fuel usage and diesel for backup generators remained lower than in 2019. But because of the growing ESKOM load shedding events in 2021 diesel for backup generators increased substantially over 2020 and almost reached the 2019 levels – even though staff and student numbers on campuses was still much lower than in 2019. As a result, the contribution of transport and generators to the UJ carbon footprint remains lower than in the five years prior to the pandemic.

STRATEGIC FOCUS AND TARGETS ACHIEVED IN 2021

Due to a further improvement in staff capacity during 2021, work-load scheduling has been restricted further – but until the last posts are filled the portfolio approach which formed the basis of the restructuring discussion will not be implemented. During 2021 the clearer allocation of projects to the various project managers, and the more consistent use of external resources has seen a further improvement in project management reporting and performance. However, as a result of the continued various Alert Levels, 2021 was still not back to full project spending. More than 80% of projected spending was achieved in 2021. Certain key initiatives remain from 2021 to be completed in 2022, specifically the addressing of the slow progress on the FHS Rescue Simulation Centre building project as well as the growing backlog maintenance issues for Student Residences. As a result of the growth of research groups and the number of SARCHI Chairs the pressure to provide increasing office space is also a strategic issue that needs to be dealt with. The number of “wish list” projects from various UJ internal departments – that now runs to more than 40 projects with a value in excess of R200m – is of such a nature that longer term planning and prioritization must now become a major initiative. This will certainly be addressed in the Strategic Development Framework project by the external consultants. Lastly, it is important to note that because of the increasing number of requests for Operations to provide additional venues and office space for departments there is a “under-appreciated” need for increased levels of environmental management and emergency power.

Infrastructure Portfolio

Space Management activities align their support by providing information as to space use, and for space planning purposes. The DHET Gazetted Space Norms and Standards with regard to the provision of Student Accommodation align with Strategic Objective Four. These relate to the various refurbishment projects undertaken from 2017 to 2021 (with some ongoing into 2021 due to the funding reallocation requested by the DHET in 2020), to address the amount of, and standard of, student accommodation. The application of the DHET Norms and Standards is also informing the development of new residences and office space – to the dismay of some clients who are pushing for above standard spaces. This has specifically become a discussion point during the pre-space allocation phase of the office allocations in the newly acquired JBS Park.

Campus Master Planning Portfolio

The process to start the development of the new Campus Master Plan was also impacted by the Covid-19 event. As a result, the tender process was extended, and by early 2021 the Tender Committee approved the appointment of the professional team that had demonstrated an exceptional understanding of the needs of the UJ in a new phase of development. (The original Campus Master Plan has now been replaced after consultations between Operations and the professional team with a broader defined Strategic Development Framework (SDF) that should act as guide rather than a formulaic template for implementation). During 2021 this team had numerous engagements with the various UJ stakeholders and in November 2021 published its



phase one report which was sent to the UJ MEC for consideration and comment. During 2022 the second and third phases of the SDF should be completed.

While awaiting the completion of the SDF project, projects such as the acquisition of JBS Park (the old Media Park 24 premises) continued with the planning required to convert what is essentially an open plan office structure into the new premises for the Johannesburg Business School and the Graduate School of Architecture in 2021 with first lectures taking place early in 2022 on the new campus. The full use of the JBS Park by the Johannesburg Business School, the Graduate School of Architecture and the various SARChI Chairs is expected to be achieved by May 2022. The Devland donated property is also

being integrated into UJ and will be a fully functioning campus by June 2022.

Student Residence Portfolio

In June 2021 the Fourth Student Residence, a 503 bed residence, on the Soweto campus was completed but the occupancy certificate was delayed due to the Environmental Management department of the CoJ raising an objection to the site clean-up on the building area adjacent to the residence. On the DFC campus the Kopano Residence, with accommodation for 244 students, refurbishment project was completed in mid-2020 but student only accessed the residence in 2021 because of the pandemic. The design and development processes for the DFC Robin Crest residence refurbishment project was finally completed in mid-2021 and funds were sourced from the CFO. This important refurbishment project commenced late in 2021 and will be completed in the first quarter of 2022. This project will see more than R20m spent on upgrading of this student accommodation.

Teaching Support Portfolio

This portfolio has delivered a number of completed projects. It included projects that support the improvement of laboratory facilities, the completion of the DFC Civil Engineering building upgrade, completion of the Q/K Building B Eng Tech refurbishment to create additional lecture venues, and the APK and APB Library heating, ventilation and air-conditioning (HVAC) projects. The portfolio also includes wayfinding projects on APK Main Ring and the DFC John Orr Buildings, the improvement of office accommodation, the more active participation in community projects in 2021 and other initiatives that either create or improve the overall experience of staff, students and visitors at UJ.



Sustainability Portfolio

The second phase 1.4MWe photovoltaic solar project, worth about R16m, was completed in October 2020 and has now been producing for more than fourteen months on all four UJ campuses. As a result, the initial performance goals are being achieved, and Operations has in 2021 already started the planning for a group of third phase projects that may add a total of a further 1.0MWe solar in the 2022 time frame.



These projects will encompass the JBS Park, the SWC residences, and a second project on the DFC campus. Designs and tendering were completed by the end of 2021 and installation should take place in 2022. This is part of a series of a further ten such projects to reduce UJ peak load energy costs across all four campuses. By the

completion of the project more than 20% of UJ's total electrical energy consumption will be generated renewably, and through high efficiency equipment such as reverse heat pumps and LED lighting more than 15% savings will also be achieved.

During 2021 the plan to investigate a move to electric buses, together with the student transport bus support company, was completed and the tendering processes for the first two buses was



initiated. The company and UJ also tendered the necessary bus charging stations on the first two trial campuses to allow continual recharging of the buses at every stop during the day.

During 2020 more residence geysers were converted to use either gas or other fuels to heat water or were replaced with reverse heat pumps that are 70% less electricity intensive for the same thermal effect. A tender for reducing lighting and thermal conditioning, using motion and thermal detection in lecture venues and other

occasionally used spaces, was finally implemented when funds were made available in 2021. To reduce water consumption for vehicle washing on three campuses a sophisticated water capture and recycling system was tendered and implemented in 2021.

Occupational Health and Safety Support Portfolio

Risks specifically addressed in 2021 include:

- Emergency doors repaired at Ndlovukazi Residence
- QK Pump room in full operation
- Gas leak repaired at C lab second floor
- Magnolia Hydrant system linked to PC board
- Retardant material installed at Ukhamba building
- Main fire sounder repaired at the FADA building
- Damaged fire doors at Robert Sobukwe and Bram Fisher replaced.
- Funda Ujabule School additional 9kg fire extinguishers installed
- Fire detection –fire panel at Ukhamba building repaired
- Escape doors at Oppierif, Cornerstone, and Magnolia repaired
- Gas lines at D lab, student residences and student center replaced
- Fire alarm deviations corrected at Kopano Residence
- Exhaust fiberglass covers at APK Pump room replaced
- Pumps replaced at JBS pump room
- Alarm at Con Cowen replaced
- Gas line repaired at meter box and resultant COC that was issued
- Escape doors at Kilimanjaro repaired
- Fire panel upgrade at Hector Petersen
- New emergency escape door at Melrose Place linked to the fire panel
- Emergency doors at Cornerstone residence Block D and Block B repaired
- Gas line work at APK C and D Lab completed
- Repair major water leak on APB Campus
- Repaired C lab Fire panel

A total of 136 staff members were trained on Health and Safety matters, and 246 staff members on emergency procedures. Fourteen Health and Safety representatives, 28 fire marshals and 29 new first aiders were appointed, while 59 new staff members were inducted into emergency procedures. Nine fire related incidents were reported during 2021, and 23 injuries on duty were reported to the Compensation Commissioner.

OHS conducted 2 Evacuation drills in 2021, evaluated more than 100 off campus student accommodations, conducted thirteen Health and Safety representative meetings and 72 safety

inspections, and 22 surveys were undertaken. 245 students were trained in emergency procedures and 15 new contractors were inducted into UJ safety related matters, with only eight contravention notices issued to contractors for non-conformance with safety.

Total waste generated in 2021 was 1749.368T; total waste recycled was 895.026T (51.16%); and total hazardous waste generated was 22.85T. Total hazardous waste recycled was 4.68T (20.48%), consisting of fat waste, wet waste, printer cartridges and florescent tubes. All recycling targets were exceeded in 2021, notwithstanding the continuing reduced campus numbers due to the Covid-19 pandemic.

As a result of the Covid-19 pandemic the UJ Covid Coordinating Committee instructed Occupational Health and Safety to install 2525 signs, 980 foot pedal operated sanitizers and 190 waste boxes. Similarly, as a result of the pandemic, a revised version of the standard UJ safety file documentation was produced and 155 contractors' safety files and a further 20 tenant safety files were approved. At this point in the pandemic, 52 specific risk assessments related to the virus have been completed. A formal campus Covid-19 risk assessment was completed in accordance with the guidance from the Department of Labour.

Logistics Support Portfolio

Logistics supported students, academics, support staff and visitors in line with the student / UJ academic and general events calendar with a 48-hour response time, with transport bookings making use of the various available resources such as the car pool and the PWD vehicles.

Logistics was affected more than most departments because of the Covid-19 pandemic. Student intercampus bus transport was re-introduced in 2021, and an agreement was reached with the service provider on further reductions in invoicing related to the fixed versus variable costs, leading to substantial savings of more than R3.75m on the contract in 2021. By year end the service was again operating at more than 75% - though fewer than 9 000 students and staff were making use of the service on average every day (down from an average of over 11 000 in 2019).

The further integration of Logistics transactions into Archibus is being actively investigated and in 2022 Logistics will completely do away with the paper based request and provisioning system to a real-time app based system fully integrated with Archibus. This will improve controls as well as allow for more rapid invoicing as well as better support for prospective users.

NOTABLE ACHIEVEMENTS

- 27 projects were completed in 2021 and the total infrastructure spending exceeded R207.5m, an increase in project value for completed projects of approximately 12% over 2020 but still 24% lower than in 2019, the last year without building interruptions.
- **Strategic projects completed on time during 2021**
 - Soweto 4th Residence
 - New Science and Engineering Building Phase 1
 - The 1400kWp Photovoltaic Energy systems on 3 campuses
- **Notable Priority Projects completed during 2021**
 - DFC (Lesedi and Phumulani) and APB (Ndlovukazi, Kilimanjaro and Horizon) gas boiler replacement projects
 - SWC Cleaning Refurbishments
 - Replacement of DFC Buxton Lift
 - Replacement of the two APB Horizon Residence lifts
 - Reinstatement of Ulwazi Road
 - SWC Ulwazi Residence Painting
 - DFC Chemical Science Lab upgrade (Nano Lab)

- APK B1 - B4 Lab Waterproofing and painting project
- DFC Lift extension
- APB Hospital Flat Roof Waterproofing
- Impumulelo and Gloucester Back up power provision
- Replacement of compact fluorescent lighting with energy efficient LED's and occupancy sensors
- DFC Campus Lesedi and Phumulani gas boiler replacements
- APB FADA Smart Fabrication Labs
- APK Auditorium PWD Ramp for Graduations
- SWC Lecture Venue Acoustic problems
- STH Exterior Paint project

No strategic projects experienced overspend during 2021 but the FHS Rescue Simulation Centre development experienced substantial delays and there were indications in late 2021 that the contractor was unable to complete the project without substantial support. There had also been three variation orders that added more than 5% to the original contract value.

- **Significant projects in process for completion in 2022**

- FHS Rescue Simulation Centre on DFC
- Science and Engineering Building Phase 2 on DFC
- UJ Campus Master Plan phases 2 & 3
- JBS Park (Media Park 24) Lecture Venues project for the Johannesburg Business School

- **Significant projects not delivered on time 2021**

- FHS Rescue Simulation Centre on DFC – extension of time due to Covid-19 as well as contractor related performance issues

COMMUNITY SERVICE, STAKEHOLDER ENGAGEMENT, AND REPUTATION MANAGEMENT

Operations had more engagements with external stakeholders during 2021 than 2020. Those that did take place included:

- City Power, to resolve water, electricity and rates billing discrepancies and to ensure compliance during construction projects.
- Continuous consultation with the Johannesburg Road's Agency (JRA), Johannesburg Development Agency (JDA) and Johannesburg Property Company (JPC) with regard to current and future development projects by both the CoJ and UJ specifically with regard to parking requirements on all campuses.
- Continuous liaison with Ward Councillors regarding the following: Community and City Council Projects, UJ Projects and its impact on community and surrounding environment, facilitation of collective projects and forums e.g. Improvement Task Teams, rejuvenation and refurbishment of Wards, servitudes, street children, traffic intersections, DFC/APB surrounding projects, Egoli Gas Development and Corridors of Freedom Projects.
- Property Management specifically represents UJ in the Melville to Braamfontein Urban Design Cycling Project and the City of Johannesburg's Corridors of Freedom (Empire/Perth Corridor) Project.
- International University Covid-19 project: involving the Universitas 21 university partners where the ED Operations was able to share UJ's experiences and achievements during the pandemic.
- Johannesburg Water, with regard to connections and terminations and the need to address local water and sanitation issues around campuses – especially the storm-water and sewer problem in Katjiefiering Road on APB campus which has in 2021 been solved

by the installation of a new sewer and storm-water reticulation system by Johannesburg Water.

- The Department of Higher Education and Training – three remote / virtual meetings about funding and project performance.
- Multiple interactions with the Student Housing Initiative Program (SHIP) that was tasked by the DHET to develop additional student residence accommodation on designated South African university and TVET campuses.

In conclusion, 2021 was a year that, notwithstanding the further interruption of the pandemic initiated lockdowns, still provided solid performance in terms of the major targets in all departments. It also allowed for a suitably adjusted and a welcome reduction in stress for staff and systems resulting in improvements in service efficacy and cost enhancement over previous pandemic year.

