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# *REVITALISING UWC ARCHIVES*

Draft: White Paper

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## ● EXECUTIVE SUMMARY

### RECOMMENDATIONS:

In light of planning initiatives and the proposed new archive building at UWC, the prospect emerges for the university to seriously address its long-term archival responsibilities. These have hitherto been fragmented and of necessity, partial, also given that the most significant collections housed on campus are the Mayibuye Collections which are managed by the Robben Island Museum under a joint custodial agreement. This White Paper outlines a unique moment now for UWC to augment its research standing and reputation globally through ensuring the physical and digital preservation of existing archives, and the dynamic activation of its cultural and intellectual resources through dedicated programmes that energise teaching, promote research and create new publics. In order to achieve these goals, what follows are major recommendations that broadly address human resource capacities, technical ICT capacities and institutional relationships. This is followed by short-term recommendations that address more urgent and immediate tasks.

#### Major recommendations

1. Upgrade all core archival processes and develop a coherent collections policy across all the university's holdings. To do this, the university's **human resource capacity** with respect to archival development must be upgraded to include sufficient professional **archival staff appointments** with expertise across collections of different media, as well as senior research appointments and deployments to drive the new archival vision (see Section II).
2. Appoint a **Steering Committee** of academics, archivists, institutional planning experts, ICT specialists and other key stakeholders that will troubleshoot, guide and champion the archival project. This committee should oversee the interim period between the adoption of this White Paper and the opening of the new archive precinct at UWC, when it should take on permanent status as a Senate Committee on Archives (Section I, p. 13).
3. Review ICT **technical capacity** for an enhanced **digital infrastructure** that dovetails with national development programmes for archives and supports the preservation of digital objects. This refers to the Open Archival Information System (OAIS) infrastructure including Archivematica and AtoM in which Mayibuye staff already have capacity. The university should prepare the ground to ultimately apply for and qualify as a Trusted Digital Archival Repository with international accreditation. Enhanced digital infrastructure for the UWC archive is in synergy with UWC's new Institutional Operating Plan (IOP), where different systems need not compete but can fully co-exist to the benefit of specialized entities such as the university library and new university archive (Section III).
4. Build and consolidate **institutional partnerships** with relevant international partners to promote core archival activities and expand digital programmes, which will assist the varied incremental measures outlined in this White Paper. These should come with related student internships and exchanges as well as high-level research collaborations (Section III).
6. **Activate** the potential of existing archival collections by integrating UWC's academic community in the archival process through the archival Steering Committee. This will promote the direct engagement of **academic teaching and curricula** with UWC's archival collections, as well as new research by both postgraduate students and academics inside and outside the university. A variety of **public programmes**, artist residencies and publications series are further initiatives that the university and its members and partners should be encouraged to support (Sections V, VI, VII).

#### Urgent immediate recommendations:

1. **Revisit the 2001 Memorandum of Agreement** between UWC and the Robben Island Museum, to bring the Mayibuye archive and existing university collections into much closer alignment under a more unified management system that ensures good archival practice and policy development within the new space of the UWC archive. This needs to be undertaken at the most senior executive level in order to fulfil the 2018 joint undertaking to revise the MoA by both UWC and RIM. This is integral to UWC meeting its archival obligations, and reduces the risk of expensive duplication of facilities and services in the new building (Section I).
2. **Promote ICS service provision** to Mayibuye through the appointment of an archival point person such as Anver Natha. An immediate task is to ensure the fast-track discoverability of existing and updated digital research material at Mayibuye (Sections II and III).
3. Prior to their relocation to the new building, an urgent **assessment of ongoing preservation issues** needs to be undertaken with the Umatic IDAF video collections in A Block which indicate signs of 'sticky shed syndrome.' Likewise the older medium- and large-format triacetate negatives in the photographic collections need to be quarantined followed by remedial treatment. Appropriate measures must be immediately put in place to halt the deterioration of these historic and rare archival objects (Section II).

4. **Integrate the Rashid Lombard Project** into the deliberations of the archival Steering Committee. This is a potentially large new collection of photographic objects with proposals around digital access that need to be brought into alignment with the planning for preservation storage in the new archive building, as well as agendas for research and teaching access and broader discussions on the archive's public programmes at UWC (Section II).

5. Reactivate the **UWC Art Committee** to address its original agenda to preserve, research and activate the university's art collections; incorporate its representative/s in the archive Steering Committee (Sections V, VI, VII).

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6. The **Protection of Personal Information Act (POPIA)** brings new implications for existing collections, especially around oral histories. This is especially the case with audio interviews and verbal or informal agreements provided by interlocutors and informants. Digitisation also brings new questions for such agreements. Such documents around provenance and agreements with interviewed persons need to be checked and aligned with POPIA requirements as far as possible, in conjunction with university policy (Sections II, III).

## SUMMARY NARRATIVE

This White Paper arises from a convergence of interests, dynamics, and opportunities. The university is reassessing its responsibilities as laid out in the agreement with Robben Island Museum with regard to the Mayibuye Collections housed at UWC. A planning grant was secured from the Andrew W. Mellon Foundation to assess current conditions and prepare a new archival vision for the campus in a White Paper. At the same time the university secured preliminary infrastructure funds to refurbish an appropriate building on campus to accommodate a state-of-the-art new archival precinct. This facility is intended to house not only the Mayibuye Collections and the institutional archive (Documents, Records and Archive Management or DRAMS), but significant new collections as well.

The White Paper therefore offers coordinates for implementing best practice analogue and digital archives at UWC based on trust, incrementalism and a long-term commitment to preservation. It arises at a time of archival 'Refoundationalism' in the university's life which is very different from its origins under apartheid or the transitional 1980s and 1990s: the crisis now is not one of truth but of expectation and access. It is time to expand on the definition of the activist archive of liberation, to recognise archival diversity at UWC. It is time to prepare an archive repository worthy of UWC's ambitions in the world of higher education.

In pursuit of a digital infrastructure that has the capacity to host UWC's extensive range of historical archives within its jurisdiction, we have identified the urgent need to review and greatly enhance technical systems and human resource capacity. The current state of preservation is not conducive for building the global university resource we need. In fact, we need to harness policy, structural, human resource and budgetary considerations towards digital processes that are responsive to the complex needs and sensitivities of historical archives, and that are ethical and trustworthy. Moreover, the networked nature of digital repositories now makes new conceptual frames vital to preservation work. The university archive holdings need to meet the standard of a Trustworthy Digital Repository.

In this new landscape, we recommend that UWC commits to an archival vision which, while built on its institutional legacies, places the present and future needs of its teaching, research, public and stakeholder communities at the centre of its priorities going forward. It seems a first step would be to obtain official commitment to the rollout of a preservation ethos at UWC - in support of the planned refurbishing of a dedicated preservation space in the former Senate building. With a view to digital certification, UWC would communicate its commitment by taking three further steps - first, adopting the OAIS reference model for UWC, secondly, adopting a Long-Term Preservation Plan and thirdly, a Collection Development Policy. These stages will need incubation over several years before bearing its fruits. An appropriately authorised Steering Committee (as recommended above) with the relevant expertise within the university should therefore drive a preservation planning, policy development and administrative/management process, with the enabling mechanisms and authority to champion this work.

In this new dispensation, the archive should be directed and resourced to support core university functions more consistently and purposefully - namely teaching, research and public education (and its administration). Access to more discoverable documents and images of historical events, subjects, writers and artists would greatly enhance the undergraduate teaching curriculum and postgraduate research. The capacity to deploy such materials would develop critical reading and viewing skills in a young generation that already has far more visual, sonic and digital literacy than earlier cohorts, leading to new cognitive breakthroughs. New graduate programmes - such as in Critical Curating which is planned in cooperation with the Zeitz Museum of Contemporary Art Africa (MOCAA) - will enhance and be enhanced by this. Similarly, for research, an accessible archive institutes the potential for conceptual and methodological breakthroughs that are the cornerstone of original scholarship. Such breakthroughs and creative outputs draw scholarly and public

attention, attracting funding, collaborative partnerships and often the best quality of postgraduate students to the university. Their engagement with archives and wider debates in the humanities in turn deepen the relevance and sustainability of the archive. Finally, the UWC archive also has a public mission - championing its profile as a site of public discourse - which needs curated attention distinct from but linked with its teaching and research role. For this purpose, the practice of research-based curating - caring, selecting, making accessible through special public engagement - has a vital role to play.

The Open Archival Information System (OAIS) reference model is being commonly adopted in South Africa and globally (including at the UWC-Robben Island Museum-Mayibuye Archive). The model provides a conceptual framework and common terminology for the preservation and dissemination of digital assets. It defines a set of roles, processes, and functions relevant to long-term preservation, thus providing a common understanding of what it is that archives do when they preserve digital information objects. Within this model, we describe an 'ethical infrastructure', a critical starting point and giving effect to the Trustworthy and Certifiable status for a modern digital preservation repository. Such a revitalised UWC archive, in its founding and policy documents, looks perpetually to the present and future needs of its Designated Community. The model will help frame how the university approaches its obligations with respect to rights, obligations, legal frameworks, stakeholder relations, human and machine relations, preservation and regular audit and peer review. Yet we believe it enables sufficient room for an institution to set its own standards based on its unique legacies and requirements.

Finally, in a networked world, the digital archive needs to be interoperable with other archives and networked services. We therefore highlight the need for common approaches, systems and processes that interface with digital collections outside of UWC, in this way contributing to a larger, national infrastructure for accessible and sustainable digital archives and heritage. UWC and other higher education institutions also have important training, skills development, and capacity building roles to play across the multiple disciplines and sectors that have a stake in this national infrastructure. Moreover, we encourage consortial approaches that might support the realisation of challenges shared between South African and other institutions further afield around the ongoing implementation and accreditation of digital repositories.

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## I PREAMBLE & OVERVIEW

### UWC and the archive question: institution, conservation, restitution

The University of the Western Cape (UWC) is closely associated with both apartheid and the anti-apartheid struggle in South Africa. This arises both from its own history as the ‘bush college’ founded for a racially designated student constituency in the Cape, and the ways in which the institution tore up this script by rejecting the mediocre and discriminatory role it was originally designed to play. By the 1980s it had become another kind of campus due to its intellectual leadership, open-door policies and radical curriculum experiments that put it at the cutting-edge of educational debate. It attracted academics of calibre and became home to projects in People’s Education and People’s History amongst many others, earning the sobriquet of the Intellectual Home of the Left.

Under Jakes Gerwell’s leadership a more integrated planning process to address UWC’s public role was undertaken. It followed that when the International Defence and Aid Fund (IDAF) sought a home for its archive, UWC was deemed appropriate. This archive became the Mayibuye Collections, widely recognised as one of the major repositories of liberation history materials and housing unique content in heterogeneous formats that cover roughly a fifty-year period. The collections are housed in the UWC-Robben Island Museum-Mayibuye Archives (hereafter Mayibuye Collections) on the campus of UWC and managed by the Robben Island Museum (RIM), under the joint custodianship of the RIM and UWC. The current UWC leadership under the Rector Tyrone Pretorius has reasserted the centrality of the Mayibuye Collections and other campus-based archives to the University’s teaching and scholarship especially in the humanities, arts, and information sciences, and initiated a legacy project to promote these concerns that includes a new archive precinct.

The archives ‘burn’, they are aglow with possibility.<sup>1</sup> This White Paper highlights many potential energies coming from the archive. Fundamental to releasing these energies are the dual tasks of *preservation* and *access*. Every archive is ‘at once institutive and conservative.’<sup>2</sup> Any university with ambitions to in the world of research, both national and global, needs an archive with cumulative and inter-operable layers to develop its research and postgraduate teaching capacity and thereby enhance its status. In this way the university harnesses the institutive capacity of the archive which also draws in much larger publics – *access*. ‘No longer simply repositories of knowledge and stewards of objects,’ such university institutions ‘play critical roles in the intellectual engagement, cultural enrichment, and personal as well as professional development of the many constituents they serve.’<sup>3</sup> But a university such as UWC must also do justice to its heritage responsibilities by looking after its archival artifacts in the most proper manner, for continued or perpetual access. In this way, collections that hold historical links with UWC’s student, alumni and public constituencies will survive into the future. This keeps alive the possibility of restitution in the form of reconnecting these constituencies with their pasts, helping to build an engaged and critical citizenship.

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<sup>1</sup> Georges Didi-Huberman, *Bark* (Cambridge MA: The MIT Press, 2017), 14.

<sup>2</sup> Jacques Derrida, *Archive Fever* (Chicago: University of Chicago Press, 1996), 7.

<sup>3</sup> Jill Deupi and Charles Eckman, ‘Prospects and Strategies for Deep Collaboration among Galleries, Libraries, Archives and Museums Sectors,’ White Paper, University of Miami, 2016.

## UWC's archival niches: from the crisis of truth to the crisis of access

While RIM and UWC made an agreement on shared custodianship of the Mayibuye Collections at a particular time and the university abides by that agreement, there is a larger point to be made here. The very emergence of postapartheid South Africa coincided with an archival impulse that was foundational for many of our collections (Mayibuye, Nelson Mandela, Fort Hare), and which was associated with the uncovering and custodianship of 'truth'. Our planning workshops for this White Paper however suggest that we have moved into another moment. The current archival 'refoundationalism' arises at a time which is very different: the crisis now is not one of truth but of expectation. Amongst other indicators, the Fees Must Fall campaigns (2015-16) point to a *crisis of access* that is educational, epistemic, tertiary and digital. Restitution is the undoing of loss, and an institutional engagement with loss is needed otherwise UWC and its archives will always remain relegated to the ghetto. As the mix of collections, archive staffing and academics at UWC suggest, one advantage we have is that we are already to a considerable extent connected—that is, from the original foundational moment.

Historically, UWC and especially the Mayibuye Collections are associated with records that come from very specific forms and worlds, those of the people who participated in the struggle to liberate South Africa from apartheid and its longer history of political, social and economic exclusion based on race. Thus, in many ways, these come with a specific niche identity as activist archives. We are now in a different era, however. A quarter-century after the transition to democracy has seen multiple other campaigns, activisms and diverse arts flourishing. While it is useful to retain the description of 'activist archives' to guide future collections policy, its definition needs to be expanded and rendered more multiple, nuanced and inclusive so as to encompass new generations of UWC's research and student communities and the dynamic nature of its broader publics. This needs to be taken into account in the development of a cohesive Collections Policy.

## Archive diversities

Another feature of UWC's archival present (and future) holdings that we must acknowledge is their diversity. There are many different types of archives: historical archives covering particular time periods, which include significant multimedia collections (photographic, film and video, sound, art, ephemera). New forms of activism are giving rise to the ongoing making of archives, which include various leading research initiatives on campus especially on land and public health. Each of these archives embodies strong community connections, with vested interests, persons and ideologies.

In addition, we need to make a distinction between university-based archives (research collections), and the university archive itself (UWC's institutional records). While distinct in their mandates, both the university-based archives and the university institutional archive (the Documents, Records and Archives Management Services or DRAMS) are to be housed in one proposed facility. Finally, new collections will also be housed in the proposed archive facility which require a commitment to staffing, capacity-building and public education programmes to maintain such collections and facilitate use. This is particularly relevant to the substantial Rashid Lombard Collection that is in the process of acquisition negotiation, with the potential for similar collections to follow. There are thus at least three groups of stakeholders who will occupy the new UWC archive precinct: Mayibuye Collections, DRAMS and new research collections (provisionally co-ordinated by the CHR).

## Planning grant and process

With the support of a 15-month planning grant from the Andrew W. Mellon Foundation, a consultation process was launched to draft a White Paper that would help to conceptualise and operationalise a far-reaching archival vision for the university to support collection development and management, teaching, research, scholarship, and creativity. Its short-term objectives were the establishment of an Archives Reference Group; the organisation of workshops and professional development; and the creation of two exploratory testbeds to generate infrastructure requirements and inform future development and elaboration. Such activities were designed to address several longer-term incremental goals. These include:

- the development of policy, praxis, and physical and technological infrastructures for sustainable archives management, preservation, and access aligned with internationally recognized standards and best practices.
- the expansion of arts and humanities teaching and scholarship based on the creative, rigorous, and integrated use of primary source materials that remain to be seriously tapped;
- the use of a specially dedicated space to mainstream heritage resources through exhibits, programming, and other public engagement efforts.

## Aims of this White Paper



*Fig 1. Detail from Untitled mural by Malangatana Ngwenya, UWC campus (Courtesy of Phylicia Oppelt).*

The current Institutional Operating Plan 2021-2025 (hereafter IOP), seeks to ensure that UWC is fit “to function as a connected 21st-century university in the digital age”, recognising a “need to keep pace with the explosive growth in new technologies and the associated data and cybersecurity risks that accompany it.” Within these parameters, **this White Paper asserts the vital role that preservation must play** - in tandem with other research, teaching, and administrative workflows - in securing and enhancing the university community’s access to its research collections and data on a sustainable basis.

The IOP goes on to identify several gaps between UWC’s present realities and priorities inherited from its previous planning process on one hand, and on the other, the transition needed if we are to adapt to new, often technology-driven, models. In this there is also a caution to ensure that the human element remains, and that core values of care and compassion are built into such a transition.

The IOP recognizes that the university can do more to secure and enhance its strategic data assets. UWC does not currently have systematic curation of research data. Beyond the rudiments of data storage, what is required is a rigorous system which ensures that the university can unlock its considerable assets under conditions which ensure the long-term sustainability for these assets. This new approach to data is not recognised as a basic standard inside the institution, challenged as it is with legacy systems and bureaucratic processes. The human actors need to be supported to

transition from obsolete software to new systems. The accelerated risk of loss of data points to problems of digital and data memory loss, and the strategic importance of data in the new landscape. For example, among staff and students we recognise the pervasiveness of handheld devices. But it is noteworthy that while the Fallist movements of the past decade were very active on UWC campus, the institution has not had the wherewithal to secure the memory of these events for posterity in a systematic archival form. It would be an important benchmark that future historic events such as these are captured in future-oriented archival workflows on campus. Our concept of 'infrastructure' is therefore deployed in this White Paper to reference the university's capacity to meet such preservation aims in its IOP.

### Impact snapshot: 2025



*Fig 2. Aerial view of the main entrance to campus, and site of the future archive facility.*

If the recommendations contained in this White Paper were to successfully align with the IOP and be implemented, what might be reflected to a future reader? As regards its scope and relevance, this White Paper seems to coincide to varying degrees with all the Goal Areas in the current IOP, but specially Goal Areas 1, 2, 3, 6 and 7 - which focus respectively on the student experience, learning and teaching, research, public life, and enhancements to the UWC campus environment. Casting forward to a successful implementation of the current IOP, what indicators might a revitalised archival landscape show? What would a healthy preservation ethos at UWC bring to the student experience, learning and teaching, to research, to the university's public standing, and to its lived environment?

In this emerging future, a visitor entering campus from the Robert Sobukwe Road entrance would be captivated by an iconic new structure - a state-of-the-art humanities archive and exhibition facility to the left of the road at the site of the Old Senate Building. This facility has a respected public programme and online presence offering enhanced access to its holdings. It is well used and takes pride of place as a welcoming presence on campus. These gains translate to in-person as well as online experience for researchers and customers, affording access to images of public art and intangible heritage values for the campus and its holdings – from the IDAF collections to a significant part of the approximately 34,000 artworks in the collection. Such visitors might be able to view the UNESCO Art Against Apartheid collection, work by the artist Malangatana Ngwenya, by photographers such as Rashid Lombard or (potentially) George Hallet and many other unique works – previously obscured from public attention - during such a tour. Referring to UWC's complex past,

and visually harmonious with the nature reserve, Goal area 7 - the development of the built environment and surroundings - is addressed through this new development.

In this snapshot five years hence, UWC's humanities research archives also enlivens teaching platforms in the humanities and beyond, helping a growing number of lecturers develop curriculum materials for critical reading and viewing skills in a younger, digitally literate generation. UWC is making something more of its art collections and its community is benefitting from the critical intellectual benefits of doing so. More graduate students are developing dissertations interrogating and interpreting materials held in the archives.

In 2025, the university is bolstering its reputation as a responsible and responsive steward of its research holdings, and of South Africa's liberation heritage, and is attracting considerable international interest as a repository. A transparent, research and expertise-driven governance body champions the archival imperative inside the university and beyond. Moreover, UWC's digital preservation system is supported with a clear and elaborated planning and policy environment. This environment facilitates archival acquisitions from faculty, collectors, artists and the public, and enables unprecedented access to the collections underpinned by adequate professional staffing, leadership and policy support. Working in an open source, non-proprietary and OAIS framework, the university's archival staff would have made considerable progress towards certification as a Trusted Digital Repository, giving the assurance to those who place their trust in it that the university is a responsible, capable, and ever-vigilant steward of its digital data and objects. Moreover, having established its own internal governance, policy environment, long-term plan, and having set its own transparent benchmarks for digital preservation, UWC will be well placed to take up collaborative partnerships with partner research institutions – helping to build a consortial model of digital preservation for the country and further afield.

Notwithstanding the legacy challenges described in this White Paper, we believe this new archival moment has potential to enhance existing strengths in teaching and research, and to promote collaboration across traditional academic divides –perhaps pointing to programmatic growth as encouraged in the IOP. Inside a supportive environment, these workflows can help improve the experience of teaching and research - bringing greater transparency, reproducibility, accountability, and efficiency. As part of UWC's enhanced research, administration, and management system (RAMS), the new UWC archive can offer localised delivery of secure, open-source web-based access to primary research materials such as manuscript collections, photographs, sound, films, artworks, and born-digital objects such as emails, blogs and websites, and hence, enhance access for humanities faculty and postgraduate students to primary material held by the university, as well as materials held at partner institutions operating on interoperable systems inside an archival commons.

## Guiding Principles

This White Paper outlines an incremental development path for addressing these questions. The aim is to offer coordinates for implementing best practice analogue and digital archives at UWC. This development path is rooted in the three guiding principles to be held in play under conditions of ongoing resource scarcity:

1. Trust. What is trust in this institutional context? A university-based archive is only as good as the trust placed in it by its donors (members of the public as well as scholars), users and the general

university community. This trust is built up over time. Trust is already an implicit value inside the university given its status as a research-based institution and given the role of credibility in accreditation of learning and research. The White Paper proposes the integration of this critical asset into the university's emerging archival dispensation, in ways that are explicit.

2. Sustainability. What does it mean to plan and implement for long-term sustainability? Such long-term thinking demands that we keep focus on what will endure beyond short-term challenges, especially in times of resource limitations, and skill and funding scarcity. Long-term thinking will help the institution to cope in a sustainable way with the need to consistently generate accurate data based on real-time monitoring (for a trustworthy repository), build capacity to read across various institutional contexts and vocabularies, and adapt to changing parameters of evidence-based learning. Sustainability is enhanced by trust, and vice versa.

3. Incrementalism. Small measures need to be built into programmes with all stakeholders that work towards such long-term goals, especially regarding the requirements of preservation and building trusted digital infrastructure. An incremental approach also allows for more participation by academics and other parties who benefit from the learning curve that we call 'archive as method.' The status quo at UWC shows it is far from being able to address significant areas recommended in this White Paper. For example, its current infrastructure for hosting archival collections and associated metadata management at UWC is extremely limited. The university needs to undertake incremental steps and clearly define roles and responsibilities in this regard, which will have a cumulative impact. Besides a governing body or steering committee representing stakeholders that guides the process towards the new archive, an important factor is building interdisciplinary and reciprocal partnerships nationally and internationally, based on long-term plans and targeted funding opportunities. One task of this White Paper is to identify critical and potential nodes where incremental development should occur.

## The Way Forward: Transition from White Paper to New Archival Dispensation

Between the planning process, workshops and consultations that have informed this White Paper and initiated a productive dialogue between academics, archivists, administrators and other stakeholders, a number of measures need to be put in place to guide the transition to a new archival dispensation at UWC. These should harmonise with the university's own emphasis on 'connecting possibilities' outlined in its new Institutional Operating Plan for 2021-5. These measures include the initial formation of an interim governing body or steering committee on archives that:

1. oversees implementation of short to medium-term goals with regard to **urgent preservation and access needs** outlined in this White Paper, for both existing and incoming collections
2. consults and advises on archival, professional and specialised **staffing** for the new UWC Archive
3. advises on the convening of an **ICT Archival Working Group** that includes archival and digital stakeholders on campus with the aim of promoting trustworthy digital archives as part of the White Paper implementation
4. advises on the reconvening, composition and activities of the **UWC Art Committee**, and engages in ongoing close communication with this Committee to promote the visibility of UWC art collections, and standards-based management and care of these collections
5. works with CHR in advising project management on the specialised **archival spatial issues** of the new archive building on campus

6. promotes engagement of university **research and teaching** with archival holdings in preparation for the opening of the new archive building and increased digital access
7. collaborates with CHR and faculty in promoting a discourse and practice around 'archive as method' and developing **critical tools** in digital humanities
8. collaborates with various campus stakeholders to advise on a way forward for addressing legal issues pertaining to the collections (such as ownership and copyright, and understanding the everyday ramifications of the Protection of Personal Information Act in the archive) formalised into an **official university body** Senate with oversight regarding the UWC Archive after the official opening of the latter, and with membership drawn from relevant stakeholders.
9. Explores research, funding and strategic partnerships with RIM, nationally and internationally.
10. Considers the archival implications of the ongoing GRAP103 audit process at UWC, ensuring that its integration with other archival priorities is well-supported by UWC structures (particularly relating to the Mayibuye collections).

## I. THE STATE OF PRESERVATION AT UWC



Fig 3. Offices at the Mayibuye Archives (Courtesy of Stanley Sello)

The preservation of diverse collections remains the core work of an archive. This is especially the case with analogue materials such as paper, photographic, film and sound recordings. Preservation is a core archival responsibility, alongside other core archival roles such as acquiring, selecting, describing, and making archives available for use. Its underlying motivation, which is to increase the lifespan of at-risk materials that are considered as having enduring research or heritage value, is integrally tied into ensuring that these materials are available, accessible, and reusable in the long-term. In this context, *available* means that materials continue to exist. *Accessible* means that they can be accessed through an archival finding aid or system and are easily discoverable. *Reusable* means that there is sufficient administrative, technical, and descriptive metadata—sufficient contextual information about the collections—so that they can be appropriately rendered for future use.

This has accessibility of the collections. Digital archives have their own specific preservation issues (see Section IV), but this section will focus on analogue materials given their current preponderance in existing collections. We approach this question of analogue preservation at UWC with an eye to their future integration into a more comprehensive preservation programme that includes digital preservation. By viewing preservation as a programme rather than a singular activity, we emphasize ongoing responsibility in this regard. This puts ‘time on our side’.

Thus preservation does not simply mean storage. It has two dynamic aspects:

1. Instituting full physical control of archival collections, which includes caring for the collections by actively ensuring optimal conditions for the enduring existence of items, through preventive methods, and the physical arrangement and storage of materials to support discoverability.
2. Instituting intellectual control of archival materials and thus preparing them for diverse future uses through appropriate accessioning and acquisition systems (amongst others, for institutional accountability purposes), recording appropriate collection level metadata, describing the collections in archival finding aids, and actively researching and documenting contextual information to support reuse.

Several important processes thus ensure not only the longevity but also the interoperability of such archival fonds and objects with new and future digital research domains across the archive, the university and beyond.

Regarding instituting physical control and ensuring optimal conditions, following our assessment of the current storage conditions at the Mayibuye Collections housed in the UWC Library we made several recommendations with regard to basic preservation measures in our 2019 Interim Report. These recommendations are based on tried and tested preventive preservation methods for archives, as documented in many archival resources such as the Australian archives primer Keeping Archives, and the North East Document Conservation Center preservation leaflet series. preventive methods, which need to be addressed in the actual design and building of the new archive building, include:

- environmental control (temperature, humidity, climate)
- light levels
- good ventilation for staff areas
- development of a formal Disaster Management Programme
- regular housekeeping to control dust and other environmental pollutants
- fumigation and pest control
- reducing susceptibility to fire and/or water damage through security provisions.

Regarding instituting intellectual control of the collections accessioning procedures and documenting of analogue materials, these should follow a distinct workflow that needs to be reflected in the new building design, including:

- finalizing acquisition agreements with donors
- preliminary sorting and registration
- detailed inventory and archival description to produce archive finding aids which frequently involves further research.

The more effectively these stages are addressed, the less work is required at later stages. The processes of sorting, inventory and finding aid preparations as well as deeper research into collection provenance are valuable forms of metadata generation and capture. They also translate to more discoverable and reusable archival collections. Good initial archival processing therefore makes future digital interoperability far easier.

We find that the archives located at UWC show archival that fonds and materials are well-documented, while others range from being partially documented to not documented at all. Increased physical space within the new archive precinct will greatly assist both the Mayibuye Collections and DRAMS and facilitate the acquisition and ingestion of new collections.

However, in our Interim Report of July 2019 we pointed to a few inter-related issues that the university still needs to get right in overcoming different backlogs and inadequacies and preparing for the intake of substantial new collections. These were listed in the Interim Report and include increased and dedicated human resources capacity development and training in: specialist archival work in analogue conservation, and digital archive management as discussed in Section IV training (this applies to both Mayibuye and especially UWC's new collections, which have no archival staff appointed as yet); better

procurement for requisite archival materials (such as acid free storage enclosures). These issues remain pertinent, and the university still has a role to play in facilitating a degree of improvement in the procurement problems facing Mayibuye staff.

## **Assessment of existing collections**

### General

Each archival grouping at UWC (Mayibuye, DRAMS and new collections) has certain specific needs with regard to preservation. Our efforts to understand these needs are mainly centred on the Mayibuye Collections, which is functionally structured into four sections - a Historical Papers, Photographs, Archival Archive and an Audio-Visual Archive (Film and Video, and Audio/Sound), and an Art & Artifacts collection (paintings in different media, linocuts, woodcuts, sculptures, mixed media, banners, original and printed poster materials, and wide ranging artifacts from different time periods and anti-apartheid contexts) Meetings were held with staff to gain an understanding of the preservation status quo and priorities of each section. We consulted background documents, finding aids, inventories, researcher records, associated collection files and GRAP103 records where available.

It should be noted here that, at a very basic level, GRAP103 is designed to track the physical movement of archival collections. It does so however in a way that appears to not integrate well with pre-existing archival methods, or with archival standards that should be applied in the future. In addition, core archival functions at Mayibuye were significantly impacted by the substantial additional work required by the GRAP103 requirements from 2012, coming on top of existing workloads.

These consultations were useful in projecting future needs of archives at UWC, especially in terms of its niche attraction for future donors. But UWC also needs to develop its own preservation capacities for a variety of collections.



*Fig 4. Wits University Library, 2019, showing a proximate relationship between parts of collections to be digitised and the digitisation laboratory.*

A 2016 report by RIM on the State of Conservation of UWC-RIM collections identified challenges across the different archival sections.<sup>4</sup> Various measures were put in place by archives staff, including the installation of a gas fire suppression system after a period in which the archives were closed due to flooding. It must be stressed that the design and construction of the new archive space needs to obviate the likelihood of any such contingencies.

## 1. Historical Papers

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<sup>4</sup> Overview of the State of Conservation Management and Requirements for the Collections at UWC-RIM Mayibuye Archives - 13 September 2016.



*Fig 5. Printed catalogues at Mayibuye Archives (Courtesy Stanley Sello)*

Historical papers constitute the bulk of the Mayibuye Collections: in addition, the research archives in various departments and centres at UWC that might find a home in the new university archive building come mostly in the form of paper documents. DRAMS also has its own special collections archive. While these collections - which include papers of different UWC vice chancellors, papers from UWC institutes such as the Education Resource and Information Project (ERIP), Western Cape church records, and more - are kept on Level 2 of the library adjacent to the Mayibuye collections, UWC archivists at DRAMS have also indicated the need for better physical and intellectual management of the collections.

The Historical Papers Archive of the MC has been housed on Level 2 of the Main Library since 2000. There are more than 400 personal and organizational collections (or archival 'fonds') in varying states of processing and accessibility. The collections also differ considerably in terms of their volume, with large volumes presenting the main processing challenges. At minimum each of the 403 collections which have been accessioned into the Historical Papers have an Accession Number, a Collection Title, and a summary describing its contents. Finding aids or collection guides which help to contextualize the collections and facilitate access, have been produced for some but not for all the collections. Our recent 2019 assessment shows that steady progress is being made with reducing processing backlogs. At the time of the assessment there were finding aids or inventorized lists for more than 50% of the historical papers collection<sup>5</sup>. Considering the capacity constraints which we reference elsewhere, this is significant. The Historical Papers Archive has also

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<sup>5</sup> See Andre Mahommed, *Guide to Collections in the Historical Papers Archive* (2018).

standardized processing efforts based on the International Council on Archives Standard Archival Description (ISAD(G))<sup>6</sup>.

The Mayibuye archivists also use tools such as excel spreadsheets to facilitate collection management, and staff employed by RIM to implement the GRAP process control the movement of the collections in and out of the archives and ensure that collections are kept in specified boxes and shelf locations when the collections are not in use. A series of associated collection files detailing provenance and acquisition processes, that was begun sometime in the mid 1990s, appear to have lost momentum, and has been dispersed across the Historical Papers Archive and Mayibuye's administrative units. Archives staff have been working hard to reconstruct this series. More recently, archives staff have started transferring existing finding aids and inventories to AtOM which is an open-source database system for archival description and access. This transition to AtOM is ongoing, and it is a great step in facilitating collection access and discoverability by archivists and researchers alike. There are serious **capacity** constraints however in the Historical Papers Archive. At present, there is one full time archivist responsible for all aspects of the historical papers archive, including processing. Under these circumstances, it is not possible to achieve the optimum levels of archival processing (sorting, arrangement, and description) which needs to happen in the Historical Papers archive. This situation is not ideal, considering the significant amounts of personal information in the collections, as well as the range of other sensitivities (see Trust section).

It must be emphasised that the new UWC archives will need the human resource capacity to provide adequate coverage of these collections. Existing processes such as standardized processing and AtOM implementation align well with the expanded vision for interoperability proposed in the White Paper and would benefit from the support which a research and learning intensive environment can offer - for example in 2019/20, UWC financed the work-study appointments of 5 senior undergraduate students from the Library and Information Science (LIS) department to assist with archival processing. Some of these students have since gone on to accept continuing internships at RIM, and to register with UCT's Masters in Digital Curation programme as a direct consequence of their work-study appointments at Mayibuye. UWC's sustained efforts in this regard would have a significant impact. Despite regular visitors from outside UWC (and in 2016-18 these numbered more than UWC or RIM users), large *components of the archive have not to date been consulted*, and more focused ways of increasing the visibility of the collections should be undertaken. In this White Paper we recommend utilizing UWC's existing scholarly communications and research infrastructures to support this kind of visibility, and we recommend that this role should be considered in relation to the Open Archival Information System (OAIS).

**Digitisation** to date has been project-based. In the Historical Papers digitisation has been limited to projects which received special funding such as the Sam Ramsamy/South African Non-Racial Olympic Committee collection, the sporting materials in the Robben Island General Recreational Committee collection, and selected materials in the Albie Sachs collection. A number of these digital files are stored on compact discs or external hard drives

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<sup>6</sup> See the UWC-Robben Island Mayibuye Archives, 'Historical Papers Processing Manual: A Resource for Staff, Students, and Interns' (June 2016), and ISAD (G), *General International Standard Archival Description* second edition, downloadable from <https://www.ica.org/en/isadg-general-international-standard-archival-description-second-edition>

and dedicated efforts to facilitate their ingest into a digital archive system (based on an OAIS workflow) would be necessary. Considerable work has gone into addressing this.

Recommendations: the main recommendation for Historical Papers concerns strategic planning. This includes the human resource planning needed to improve physical and intellectual control of the collections. This will speed up the accessioning and processing of archives, address privacy and protection of personal information where necessary, and feed into digitisation processes and benefit access in the long-term. It will also ensure that the foundations of a preventive preservation programme are implicitly built into all archives activity, from ingest to access. These considerations apply to all the collections at UWC including those housed within Mayibuye, DRAMS and campus-based research institutes. Much of this strategic planning should take guidance from the expertise of experienced Mayibuye and UWC archivists, who have researched, incrementally implemented or already engaged in planning the necessary processes involved.

## 2. The Photographic collections

South Africa is quite unique in Africa in having generated a large photographic community dedicated to the documentation of its history in the 20th century, which puts its analogue photo archives potentially on a par with international collections. South African photographic and visual literacy has gone alongside anti-apartheid politicisation and mobilisation. Parallel and partially in response to this, photography studies is a growing research field and area of university education where UWC has established an important niche through its long-running postgraduate module in Visual History, located in the Faculty of Arts and Humanities. In addition, there is an increasing contemporary and public relevance through what Bourdieu termed photography's role as the 'medium medium.' In other words, because of its intermedial fluidity (accelerated by the digital turn) such photo archives stretch into filmmaking, publication and online illustration, as well as various forms of multimedia exhibition and installation. This is an extraordinarily rich asset.

The UWC-RIM-Mayibuye photographic collections have been noted as one of the 'largest and most comprehensive of its kind.' According to its broad vision statement, 'the archive documents South African history from colonial occupation to the present, with a specific focus on life under apartheid and resistance to it ... the subjects covered include history of colonialism, history of apartheid, images of apartheid, liberation movements, forced removals and resettlement, repression, political prisoners, trials, labour and trade unions, women, culture, education, armed struggle [and] personalities.'<sup>7</sup>

This is very much in keeping with the activist character of UWC's archives. In addition, UWC is negotiating the acquisition of a substantial new Rashid Lombard photographic collection which dates from the 1960s to the recent past. Given that Lombard was a highly active photojournalist, this would complement the Mayibuye Collections in many ways. Lombard's additional interests in architecture, jazz, music, and the arts will also greatly extend the possibilities of photographic research and public education. The scale of the new collection will also push the concomitant archival responsibilities of UWC to another level. The current

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<sup>7</sup> See 'UWC-Robben Island Mayibuye Archives: A Guide to the Collections of the Robben Island Museum,' 2001 (pp. 8-9).

size of the Mayibuye collections is estimated at 44 000 photographic objects, and the size of the potential Lombard collection is estimated at roughly 500 000 photographic objects.

Conservation assessment. Existing digital copies of photographic images are made available to researchers for their usage. However, the collections at UWC are mainly analogue, consisting of photographic film negatives, contact sheets and prints in varying formats which require specialised storage conditions. The new Lombard collection is likewise mostly analogue. All this important visual heritage is in urgent need of proper protection.

To date, the Mayibuye Collections have had no dedicated storage facilities for photographic objects which is particularly critical for special format materials. These include triacetate medium (4 x 5") and large format (8 x 10") negatives in the historically important Eli Weinberg and Leon Levson collections which have shown signs of vinegar syndrome,<sup>8</sup> with visible shrinking and bubbling on some of the negatives. For both of these collections, 35mm negatives may also be at risk because of the conditions under which they were created where the proper darkroom processing procedures were not followed. In the Interim Report of the APR group of July 2019 we recommended the immediate assessment of triacetate negatives and identification of 'at-risk' 35mm negatives that may require remedial work. We also highlighted the need to quarantine triacetate negatives from other collections.

Beyond preservation, other fundamental archival systems for the photographic collections need to be considerably strengthened and harmonised. One problem is the lack of a Collections Policy. As is well-known, the bulk of the photographic collections (an estimated 55%) were repatriated from IDAF in the early 1990s. IDAF brought with it several 'sub-collections' deriving from Father Trevor Huddleston, Eli Weinberg, Leon Levson, Tim McGrath, ANC, PAC, Afrapix and Rand Daily Mail. Important photographic collections acquired after the IDAF transfer include those of William (Billy) Paddock, Albie Sachs, Desmond Tutu, South African Council for Higher Education (SACHED), Grassroots, South, and the Adult Learning Project. There has been slow growth in the photograph collections over the years, with no focussed efforts on new collection development between 1992 and the present. But with UWC able to attract new collections, this should rapidly change.

Another issue is that to date the photographic section has operated very much like a stock photo agency. This is an income-generating stream for RIM. This was also the case for some of the archival holdings at institutions we consulted during site visits, such as the Cory Library for Historical Research and the International Library of African Music (ILAM). The major difference is that RIM operationalizes the licensing of photographs internally, whereas both Cory Library and ILAM have an agent (Africa Media Online) acting on their behalf. At Mayibuye, usage, licensing and reproduction rates are documented in accordance with National Treasury guidelines, but these are waived for non-commercial usage by UWC users, non-government organisations, heritage institutions, schools and community organisations.<sup>9</sup> If UWC acquires further photographic collections outside the Mayibuye holdings, the question of licensing and reproduction will need to be addressed together with relevant stakeholders.

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<sup>8</sup> Vinegar syndrome is a term used to describe the chemical reaction that goes on during the deterioration of cellulose triacetate film support.

<sup>9</sup> Robben Island Museum, Revised 2018/19 Tariff Schedule, pp. 5-6.

Models and recommendations. An important set of measures need to be undertaken to ensure the preservation of photo collections housed at UWC and their future accessibility. This will affect not only what UWC currently holds and will acquire in the near future: it extends to the potential future acquisition of collections from many photographers active in the anti-apartheid struggle who will be seeking a home for their collections, given that South Africa has no dedicated archive for photographs.

Before elaborating these measures, we wish to outline some salutary lessons for any UWC archive project that we learned from the Netherlands Museum of Photography in Rotterdam.<sup>10</sup> Because it specialises in photographs, this institution asserted the absolute priority of the conservation of analogue collections by devoting the lion's share of resources to building state-of-the-art refrigeration rooms in the new museum project. This basic act of preventive preservation accomplishes a multiplicity of tasks.

Firstly, negatives and prints (as well as the materials and stationery in which the negatives and prints arrived in the archive) will not degrade for an immense period. The archivists rightly argue that this securing of time is priceless. The Rotterdam Museum built a series of three cold rooms, the third at optimal temperature and humidity for analogue negatives. Such temperature control measures guarantee that the staff have time to address all other issues relating to the collection, including a gradualist policy of digitisation. Rotterdam has between 5.5 and 6 million photographic objects, of which approximately 4% have been digitised. The storage materials with which photographs, and negatives enter the museum (envelopes, papers, boxes) do not need upgrading because their deterioration or acidic qualities will not affect photographic materials at the right storage temperature. Often these materials have important contextual information from the photographer, which means these are retained in their original form. This has positive implications for research and metadata acquisition when digitizing and entails they do not have to be replicated on repackaging which would be labour-intensive, expensive, and liable to include errors.

Because the Rotterdam Museum placed most emphasis and investment on preservation, this left them with fewer resources to procure equipment for digitization. Using their knowledge of photography, museum staff overcame this problem by building their own high-resolution scanning system (with camera, mount, and light diffusion box). With conservation secured, the modes of digitisation and activation for public use can be approached more selectively and judiciously, without haste, and reducing the risks inherent in software obsolescence.

Again, the importance of an initial investment in preservation – which reduces the risks of image and information loss at so many levels - is incontrovertible. It is imperative that the new archive building at UWC prioritises the creation of proper conservation conditions such as cold rooms and related transition spaces. Because the photographic collections at UWC have to date not had the benefit of ideal conditions, high level professional photographic conservation expertise is needed to identify possible remedial needs in existing collections. The Rotterdam Museum offers preservation expertise and consultation and, for a fee, are prepared to send staff to assess and support photographic archives in different parts of the

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<sup>10</sup> Consultative visit by Patricia Hayes and hosted by Martijn van den Broek, Netherlands Museum of Photography, March 2019.

world. Then, a range of further steps must be identified and acted upon that address policies, systems, rights and digitisation, which are elaborated below.

Archival systems for photo collections. Beyond preservation, other fundamental archival systems for the photographic collections need to be considerably strengthened and harmonised. ThereWhile considerable progress has been made on certain issues, are some critical problems that prevent the existing Photographic Archive from becoming what is expected from a university-based archive or from a national heritage institution in the 21st century.

- Policies: The Photographic Archive has been undergoing a transition from the inherited IDAF photo library system to one which is more appropriate in the Mayibuye context. Much of this process is dependent upon the vision, expertise and contextual knowledge of the collections of the two staff members in this section. However, a key management issue is that while there are **documented** policies, guidelines and workflows, these do not cover all the core processes and functions to ensure that the collections are made available under appropriate archival conditions for historic photographic collections., these do not cover all core processes and functions These kinds of policies, guidelines and workflows need to inform staff practices and responsibilities. They are prerequisites for continuity, and therefore for the long-term reusability and growth of the collections. Areas of core archival processes and functions that should be comprehensively covered include acquisitions, accessioning, appraisal, arrangement and description, preservation/conservation, access and reference services, access systems and platforms, digitisation and digital preservation.
- Systems: The Archive inherited at least 4 different legacy systems., which brought their own problems Some of these systems such as the MS-DOS Library Database (which was inherited from IDAF) became obsolete. For a considerable time there were no stable platforms or version control to access subsequent migrations of this database to MS Access. However, all metadata from legacy systems have now been migrated with every hardware and software upgrade and referenced in the AtoM database where applicable. This is a major step forward.
- Rights: Rights management remains an issue for some photographic material which was part of the IDAF transfer, as well as some material in the Grassroots and South collections. Copyright exemptions on fair use for archives (in terms of impending copyright law amendments) need to be better understood and aligned with photographic archive policies and procedures. In cases where Mayibuye does not own copyright, decisions need to be made on whether formal MOAs should be pursued with copyright holders for the archive to obtain further usage / distribution / reproduction rights (beyond fair use).
- Digitisation: Digitisation and digital preservation workflows need to be revisited and aligned with standards for creating trustworthy digital repositories.

In addition, new collections coming in will need to benefit from preservation measures, and harmonised accessions and digital systems. The rights agreements that are negotiated for new collections coming in might differ from those operating at Mayibuye, but clear policies and better archival arrangements will benefit all parties and ensure better workflows across the photographic collections generally.

### 3. Film and Video Collections



*Fig 6. Shelves housing the film and video collections, Mayibuye Archives (Courtesy Stanley Sello)*

The Film and Video Collections held by Mayibuye come in several collection groupings. Prominent amongst these is the International Defence and Aid Fund (IDAF) Collection acquired in 1991 which comes in different formats (motion picture film, U-matic high band and low band, betacam SP and VHS). There is also the ARD German Collection acquired in the late 1990s (on U-matic format), the Afravision Video News Services Collection acquired in 2000 (on U-matic, Beta and VHS formats), and the Community Video Education Trust (CVET) Collection acquired in 2017 (consisting of DVD copies of original materials held elsewhere). The prevalence of several formats in these collections is an indication of the different types of media as well as rapid changes in technology common to film and video archives, unlike paper archives which remain unchanged for centuries.

**Assessment.** In much the same way as the photographic archive, the film and video archive functions as a stock footage library as has been the case since before and after the IDAF collections were relocated to the Mayibuye Archives in 1991. Research demand is high. As with the photographic archive however, archival systems to facilitate preservation, access and long-term availability for re-use need to be considerably strengthened.

Detailed information pertaining to each of these collection groupings were included in our Interim Report of July 2016.<sup>11</sup> The IDAF motion picture collection is stored in the A Block on UWC campus (8mm and 16mm film, U-matic and BetaCam SP). The ARD German, Afravision and CVET collections are stored in the UWC Library, Level 2 with Historical Papers. We must emphasise that film and video materials pose numerous challenges in terms of preservation. With magnetic tape for example, the binder holds the magnetic particles which are attached to a backing/substrate, and all three offer a potential source of failure. Rates of degradation can be slowed by cooler and consistent temperatures and lower rates of humidity also improve matters.

Systems which were put in place many years ago were discontinued at some point, as is the case for an exemplar Audio-Visual Conservation Project between 1998 and 2000. The latter had a number of important tasks:

- Cleaning, processing, and condition assessments of the 800+ reels of motion picture film material were undertaken
- Accession registers and an indexed guide to the materials were prepared
- A procedures manual for accessioning, cataloguing, and processing was produced
- Housekeeping measures were put in place to support preservation of the materials
- Equipment such as a film editing table was acquired
- Lists of holdings were entered into the National Register of Film Materials (as maintained by the National Archives at the time)
- The storage area in the A-Block was significantly upgraded and fitted with a climate and humidity control system and basic fire protection.

In 2019, this historic film footage was still housed in the UWC A-Block together with IDAF U-matic materials. The collections are well-arranged and accessible. However, the climate control system was switched off, as were the portable dehumidifiers. There has been little to no upkeep of the space. Required archival processing for film and video media has also been difficult under these storage circumstances and space constraints for processing work. The most telling sign of media deterioration in the A-Block is a strong vinegar odour. In addition, U-matic materials may be showing signs of 'sticky shed syndrome.' Specialist assessment is needed to determine the extent of remedial action required.

There are a few different metadata sources for the film and video collections. These sources such as the IDAF Library Database,<sup>12</sup> Afravision and ARD Microsoft Access database<sup>13</sup> as well as inventories, published guides to the collections<sup>14</sup> and a series of IDAF production files

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<sup>11</sup> Note that all collection numbers provided are for original materials only, as sourced from the IDAF Library Database. Copies are not included.

<sup>12</sup> The database is obsolete, but printed lists are available.

<sup>13</sup> The database is no longer available because the computer hardware on which it was stored is obsolete. However, staff report that printouts are available.

<sup>14</sup> A published guide to the video collections was compiled by Anthea Josias and Norman Kaplan in 1994; a guide to the film collection was compiled by Joan Fairweather in 1998.

should be saved and integrated as a matter of priority. In combination, they provide essential administrative, descriptive and rights management metadata.

Rights management. Processes for capturing rights management metadata need to be integrated into archival metadata workflows. In some cases, rights to use or distribute materials need to be clarified. For instance:

- Mayibuye has the rights to distribute materials which were produced by IDAF. However, the IDAF collections also include materials recorded from SABC News, ITV, BBC and Channel 4 News as well as completed productions by producers other than IDAF. These are available at Mayibuye Archives for viewing and educational purposes only.
- Copyright for the ARD German collection is not clear.
- Mayibuye has licensing and reproduction rights for the Afravision VNS collection. This is covered in a Memorandum of Agreement between the donors and the Robben Island Museum.
- The CVET collection is available for viewing and educational purposes only. Requests for reproduction must be referred to CVET.

Digitisation of video collections. Digitisation of the U-matic tapes in the IDAF and Afravision VNS collections was outsourced to two companies, VLC and Haliscan. The tapes were identified for digitisation for preservation reasons: media deterioration, as well as the difficulty of accessing and/or maintaining playback equipment for U-matic video which is now considered to be vintage equipment. Staff report that the digitisation work has now been successfully completed, with less than 3% failure rate.

Some difficulties of working with commercial vendors were however identified by staff. Issues of quality control and management are foremost, because of a mismatch between archival objectives for digitising and vendor objectives for digitising. Staff acknowledged the need to manage outsourced digitisation carefully, according to well defined standards and procedures (which are not necessarily vendor priorities), or to do in-house digitisation for video material over a longer period.

Preservation. A potentially more serious preservation-related issue emerged from conversations with staff—the likelihood that IDAF U-matic materials may be affected by ‘sticky shed syndrome’ (a form of soft binder degradation), which is the main process by which magnetic media deteriorates over time. This situation needs to be looked at further, as sticky shed syndrome could cause audio distortion upon playback of the tapes, and excessive winding can lead to stretching of the tape and irreparable damage and loss.<sup>15</sup> A

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<sup>15</sup> “The primary means of deterioration for all types of magnetic tape is binder degradation, also known as sticky shed or soft binder syndrome. The polyurethane binder is subject to hydrolysis, in which moisture is absorbed by the binder material and longer molecules within the binder are broken up into shorter ones. The result is a softening of the binder and the presence of gummy surface residue on the tape. The residue makes the tape stick in the recorder and causes uneven playback, sometimes making the tape jam completely. Occasionally, cleaning or baking the tape will make it usable for long enough to copy it, but this must be done by an experienced professional” (Inherent Vice: Magnetic Media, <https://www.nedcc.org/preservation101/session-6/6inherent-vice-magnetic-media-topics>). See also “Guidelines for the Preservation of Video Recordings”, <https://www.iasa->

specialist evaluation of all polyester-based magnetic media needs to be undertaken, as a matter of urgency. <sup>16</sup>

Recommendations. Under the less-than-ideal storage conditions (especially in A Block), preservation initiatives have shown a tendency to become fragmented. While the new archive building holds the promise of better overall conditions, there is a need to prioritise those most at risk and initiate a specialist evaluation of all polyester-based magnetic media. In due course, and with all existing and future film and video collections at UWC, new techniques and technologies to manage chemical deterioration in collections and to extend the useful life of such materials will need to be explored. For information to be stored indefinitely, periodic transcription from old to new media will be necessary, not only because the media is unstable but because each recording technology will become obsolete.

For many film and video formats, the preservation argument again applies. It safeguards the original items for posterity and allows archivists to engage in a judicious and selective process of alternative formatting, especially digital. Approaches to digitisation however need to prioritise archival needs over commercial. Film and video collections have a high research and public value especially for the filmmaking industry, as well as potential future student filmmaking projects (see Section VII). However, all of this potential is presently hampered by low levels of accessibility. Clear policies, integrated systems and better workflows would put existing and future collections on a much sounder footing.

#### 4. Audio Collections

A published guide to the Mayibuye audio collections is available. As per GRAP103 reports, there are close to 10 000 items on audio cassette, CD, reel to reel and DAT formats. Given that the different departments and centres at UWC (History Department, PLAAS) who have an interest in storing research recordings in the proposed new archive facility are also substantially analogue audio recordings, their advantages and special conservation issues need emphasis here.

The advantage with original analogue recordings is that one can pick up gradual deterioration because it is discernible, and this allows time to act. Material can for example be transcribed before it is gone, and this can salvage large portions. This is unlike the sudden, catastrophic failure with few warning signs that presents with earlier digital formats, which can result in the loss of valuable original material. While the advantage of digital audio recording is ease of reproducibility, we should remember that it is

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web.org/sites/default/files/publications/IASA-TC\_06-C\_20180603.pdf, and "Magnetic Tape Binder Breakdown", <https://psap.library.illinois.edu/collection-id-guide/softbindersyn>.

<sup>16</sup> UNESCO and the International Association of Sound Archives recently initiated a "Magnetic Tape Alert Project" which will address the seriousness of the magnetic tape problem. As acknowledged in this initiative, "Magnetic audio and video tape formats are now obsolete. Spare parts supply and service is fading, replay equipment in operable condition is disappearing rapidly, and routine transfer of magnetic tape documents is estimated to end around 2025. The only way to preserve these sounds and images in the long term, and to keep them accessible for future generations, is their digitisation and transfer to safe digital repositories" (<http://www.mtap.iasa-web.org/>).

reconstructed through a code, while original analogue recordings retain a high fidelity of recording from sound or scene to tape.

Like film and video collections, audio recordings require special handling and storage conditions because of their potentially fragile nature, and because they can only be accessed through the medium of appropriate play-back equipment. While similar archival principles and procedures apply for both audio-visual and non-machine-readable collections (such as texts, photos, artifacts), there are a few additional steps to be followed when dealing with audio collections.

If housed under adverse conditions, magnetic audio tapes can undergo a process of oxidation that may render them unplayable. The best way to reduce tape backing distortion is to store magnetic media in an environment that does not vary much in temperature and humidity. Each time temperature or humidity changes, the tape pack will undergo expansion or contraction.

Audio cassettes and open reel tapes deteriorate if they are not properly wound and stored. Cassette and tape reels were manufactured at different junctures with backing or support that is vulnerable to deterioration. Degradation of backing in these tapes is indicated by the presence of vinegar syndrome, where a faint odour of vinegar (acetic acid) can be detected coming from the tapes. At an advanced stage, magnetic tape will become brittle and break easily if bent too sharply or tugged. At the onset of vinegar syndrome, the problem accelerates and an item with a life expectancy of 50 years can degrade in a few years. It must be immediately separated to prevent contamination of other items by the acetic acid, and transcribed (where necessary) without loss of time.

The life expectancy of some recording materials is much shorter than originally envisaged, especially compact discs which have been used for storing audio recordings by many researchers from the 1990s.

Given that all Mayibuye audio collections are kept together with the Historical Papers Archive and different departmental research collections are simply stored in offices around campus, the *lack of control over consistent temperature and humidity conditions puts these audio collections at some risk.*

Recommendations. Audio collections need to be put under full archival control to enhance preservation and future access. This will entail:

- proper organisation in collections
- each recording must be granted a unique number
- originals should be dubbed for reference purposes
- each title should be fully described and catalogued
- originals and reference copies must be shelved and housed under optimal archival conditions with humidity and temperature control.

These are preconditions for any subsequent digitisation plans.

## 5. Art and Artifact Collections



*Fig 7. The UWC Community Arts Project (CAP) art collection, currently housed at the Centre for Performing Arts at UWC under the supervision of Mayibuye staff.*

The collections of art and artifacts housed at UWC are important and under-recognised. Most are not under the *de facto* custodial care of the Mayibuye Collections which has its own considerable holdings. These collections consist of art works, posters, cartoons, banners, and artifacts. There are approximately 34 000 items<sup>17</sup> which are housed in the Centre for Performing Arts building on the UWC campus, where Mayibuye occupies about 223 ASM of storage space.<sup>18</sup> The collections are well-organised, but a number of risk management and conservation challenges were identified in the RIM Report on the State of Conservation of Collections (2016). Issues that were identified in this report include the need for specialised archival supplies; proper storage units; formal procedures for the loan of original materials; digitisation of fragile materials.

In addition to most of the UWC Art collection, several other noteworthy collections are kept in this section. These include the UNESCO Art Against Apartheid collection (which consists of works by more than 80 artists, and was valued at more than R13 million), the Albie Sachs Mozambique collection of art, the Abe Berry Cartoon collection, as well as art collections from several local artists. There are also works produced by the Community Arts Project (CAP) and several other poster collections.

<sup>17</sup> As per the 'Report on the State of Conservation' (2016).

<sup>18</sup> University of the Western Cape, 'Campus Development Plan,' 2014, p. 11.

Mayibuye has managed the UWC Art collection since the early 1990s and continues to do so. An audit of this collection was completed in 2012.<sup>19</sup> The audit includes recommendations to improve conservation and collection management; expand the collection; use the collection as a learning resource and increase visibility through the UWC website and publications. This White Paper strongly endorses these recommendations (see Section VII). While there are signs of improvement following the 2016 conservation report with the installation of a mesh frame system for artworks and a gas fire suppression system, as well as increased storage space, there remains a problem that no formal responsibilities for maintaining these collections have been assigned or agreed upon. To date there has also been little progress towards formalising loan agreements of artworks within the university; and little progress made towards expanding the collections, making them more visible, or putting them to work in any curriculum.



*Fig 8. A work from the Art Against Apartheid Collection requiring remedial work at Mayibuye Centre.*

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<sup>19</sup> Emile Maurice and Mark Van Niekerk, 'UWC Art Collection Audit Report,' 2012.

Preservation Recommendations. The provisional arrangement to house art collections at the Centre for Performing Arts on campus has dealt with the challenges of space and mesh storage to enable organisation, as best as could be achieved under the circumstances. Issues of space and optimal storage conditions to facilitate access to these collections can and should be addressed in the new archive building.

The most urgent recommendation however is that the university must reconstitute its UWC Art Committee. To date, this committee has met only once (date) and not reconvened since. This committee needs to promote action on the problem of the university's lack of human resource capacity regarding the conservation and curating of its own artworks and artifacts in the institution. This committee would be well-placed to foster the increased visibility and research, teaching and public curatorial engagement with the art collections housed at UWC, as highlighted in Sections VI-VIII.

Such a committee also needs to help shape an art collections policy at UWC, to enhance existing collections and avoid ad hoc acquisition or acceptance of amorphous donations. As consultation with Gordon Metz by the archive planning group highlighted, this should be part of a longer-term strategy to dismantle the inherited dichotomy where 'fine art' goes to mainstream galleries and 'popular' or 'township' art and anti-apartheid exhibitions inevitably make their way to institutions such as UWC and reinforce the old and unproductive dichotomy between aesthetics and politics.

## II. TRUSTWORTHY LONG-TERM DIGITAL ARCHIVES

*In a near-future era, libraries and museums will likely be ranked by the quality of their digital collections and their special collections (which will be increasingly digital themselves). Those institutions with proven track records of access and preservation will be rewarded with better acquisitions, higher numbers of users, higher quality of users, and the resources – including financial ones – that accompany such excellence in stewardship.<sup>20</sup>*

### Principles and process

#### What does trustworthy mean?

The need to embed a systems-based framework based on the Open Archival Information System (ISO 14721) is one of the key recommendations of this White Paper. But as archivists in many different contexts have recognized, OAIS on its own does not guarantee a trustworthy repository. A Trustworthy Digital Repository (TDR) demonstrates good practice - “trustworthiness means not only being able to tell someone that you are doing digital preservation well but being able to show that you are doing it well because it is documented.” (Nancy McGovern, 2019) Moreover, attaining trustworthy status is not a one-time accomplishment, achieved and forgotten. To retain trustworthy status, a repository will need to undertake a regular cycle of audit and/or certification. The university will need the support of partners to build the peer relationships, and skill sets to implement a regular audit cycle for digital preservation - metadata schemas, preservation standards and indicators, workflows, data generation and analysis and so on. It will also clarify how it adds value in such partnerships.<sup>21</sup> We might call the formal and informal arrangements which support such an audit cycle an ‘infrastructure’ - with human as well as digital technologies being integral to the knowledge base, workflows and the transparent public viewing of the audit result and its supporting data.

What might be a path towards building trustworthy digital archives at UWC? This section unpacks the complexities of digital preservation at UWC. It acknowledges that the management of historical archives entails an expanded and sometimes different—even unique—set of priorities. This section proposes critical next-steps and makes recommendations that might enable radical collaboration between different yet overlapping collection traditions (such as research data management, libraries, historical archives, small departmental collections, and performance recordings). For the university environment and its emerging digital ethos, it is critical that archives are built into the life of the university. This section affirms the existing measures and suggests openings for the archive to enrich the humanities and its engagement with the digital and broader questions of technology. This is a prerequisite for consolidating an institutional reputation at UWC and offering the university a better version of itself.

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<sup>20</sup> Tyler O. Walters and Katherine Skinner, ‘Economics, Sustainability, and the Cooperative Model in Digital Preservation’, *Library Hi Tech* 28, no. 2 (1 January 2010): 259–72, <https://doi.org/10.1108/07378831011047668>.

<sup>21</sup> Space Communications and Navigation Office CCSDS Secretariat, *Audit and Certification of Trustworthy Digital Repositories: Recommended Practice, Issue 1* (CCSDS Secretariat, Space Communications and Navigation Office L70, Space Operations Mission Directorate, 2011) <<https://digital.library.unt.edu/ark:/67531/metadc463525/>> [accessed 25 August 2020].

## Our process: dialogue and workshopping for trust

Assessing the current state of digitisation at UWC, as well as digital access, digital preservation and digital infrastructure needs were central to our planning grant activities. There was sustained dialogue with Mayibuye archival staff about their ongoing efforts to implement digitisation targets, and to systematize digitisation processes. We elicited input from different campus-based stakeholders -- archives, library, ICT and academic staff. We also undertook a series of external site visits and gathered perspectives from key role-players in heritage and higher education. Much of these initial investigations were exploratory and cumulatively drew attention to the need for 'good practice', ethical and standards-based digital interventions that signify a shift from short-term projects to sustainable programmes.

These engagements culminated with a 2-day digital archives symposium in August 2019, *Building Trustworthy Processes for Digital Archives*, which was co-organized and hosted by the Centre for Humanities Research and the UWC-RIM-Mayibuye Archives. Issues that affect ongoing access to and use of digital archives were central to our conversations. Besides the focus on designing digital infrastructures that support archival preservation and access and the need for trustworthy systems and processes, we aimed to address the expectations of academic and non-academic users of archives, and how to align UWC's archival collections with existing e-research initiatives on campus such as the institutional repository and domain specific data management programmes.

The August symposium on digital archives complemented an ethics symposium held earlier in 2019, *Building Trusted Archives*. This earlier meeting addressed the many challenges of transferring materials from their anti-apartheid resistance contexts to post-apartheid archival institutional contexts. A recurring sentiment expressed by presenters and attendees was that managing this kind of archive (in both their analogue and digital forms) is about much more than the rules and procedures of access. The meeting drew attention to three critical areas -- stakeholder relationships and provenance of archival collections; working with contested and traumatic memories (private pain in public spaces); and ethics, research, and archival access protocols. The Digital Archives meeting was followed by two further workshops. In 'Questions of Ownership: Archives and the Commons' there was special emphasis on the ownership of national liberation archives, as well as sensitive oral and sound archives. Finally in March 2020 a half-day interactive workshop on 'Demystifying the Protection of Personal Information Act (POPI)' brought in legal expertise to address evolving questions on privacy and data protection.

### Finding common ground

Our recommendations on digital archiving at UWC are an attempt to find common ground between the needs and expectations of heterogeneous stakeholders and interest groups. They seek to take account of several political, social, and technical factors that affect the making of digital archives and their ongoing availability and reliability as source materials for academic scholarship and public engagement.<sup>22</sup> UWC and RIM are primary stakeholders, as defined by the terms of their 2001 Memorandum of Agreement in respect of the ownership, management, and programming initiatives of the Mayibuye Collections. Both UWC and the RIM each have their own governance, sectoral and public accountabilities which broaden the stakeholder base to include the national departments of Arts and Culture, Higher Education Science and Technology, and their respective constituents in the

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<sup>22</sup> We also note that digital archive development is not an unproblematic space. There are technological, social and political problems that accompany the shift to digital modes of archival access and preservation. Lalu notes the disjuncture between archival considerations and epistemological implications, and the need to forge a politics of digitisation. See Premesh Lalu, 'The virtual stampede for Africa: digitisation, postcoloniality and archives of the liberation struggles in Southern Africa', *Innovation* No 34, June 2007. Similar arguments have been expressed by Peter Limb and Michele Pickover with respect to digitisation programmes in Africa.

areas of heritage and education. Additional stakeholders at UWC are the DRAMS and the Panafrican Digicentre proposal that has been part of the testbed planning for the Rashid Lombard Collection.

For a digital infrastructure that has the capacity to host UWC's extensive range of historical archives within its jurisdiction, we have identified the urgent need to review and greatly enhance both technical systems and human resource capacity. Policy, structural, human resource and budgetary considerations must be harnessed towards digital processes that are responsive to the complex needs and sensitivities of historical archives, and towards digital processes that are ethical and trustworthy. This should not be a singular or once-off effort but requires a sustained and thoughtful long-term approach that:

- addresses technical capacity for trustworthy systems
- grasps the legal/compliance/regulatory issues (such as POPIA, PAIA and intellectual property) which affect archives
- develops and reviews access protocols for historical and other kinds of research within a 'tricky' regulatory/legislative context
- responds in an appropriate way to the often-understated ethical responsibilities of processing and providing research access to other people's "data."

As stated, managing historical archives entails an expansive and sometimes different set of priorities to other campus-based research collections. The stakes are especially high in the digital age, and these concerns need to be addressed with appropriate rigour, consistency, and care. It is important to note that the implications of 'open access' and 'open data' apply in different measures to archives. than they do for libraries

### The complexities of digital preservation: sectoral approaches, nomenclatures, frameworks and standards

To facilitate communication with many stakeholders, we believe that it is essential to clarify and contextualise terms that are often used interchangeably. We therefore use terms such as digitisation, born digital, digital preservation, and digital archives in very particular ways, drawing from sources such as the International Council on Archives' *Multilingual Archival Terminology*,<sup>23</sup> the *Joint Information Systems Committee (JISC) Archives Hub*,<sup>24</sup> the Digital Preservation Coalitions' *Digital Preservation Handbook*,<sup>25</sup> the University of Michigan's *Digital Preservation Glossary*,<sup>26</sup> and *The Signal* of the Library of Congress.<sup>27</sup>

i. We emphasize the distinction between *digitised* and *born digital* archives to the extent that digitised archives have analogue counterparts, while born digital archives do not. Each of them calls

<sup>23</sup> 'Multilingual Archival Terminology | International Council on Archives.' N.d. Accessed June 30, 2020. <https://www.ica.org/en/online-resource-centre/multilingual-archival-terminology>.

<sup>24</sup> Collis, Paddy. n.d. 'Glossary.' Accessed June 30, 2020. <https://archiveshub.jisc.ac.uk/glossary/>.

<sup>25</sup> 'Glossary - Digital Preservation Handbook.' N.d. Accessed June 30, 2020. <https://www.dpconline.org/handbook/glossary>.

<sup>26</sup> 'Digital Preservation Glossary | U-M Library.' N.d. Accessed June 30, 2020. <https://www.lib.umich.edu/preservation-and-conservation/digital-preservation-glossary>.

<sup>27</sup> Owens, Trevor. 2014. 'What Do You Mean by Archive? Genres of Usage for Digital Preservers | The Signal.' Webpage. February 27, 2014. [//blogs.loc.gov/thesignal/2014/02/what-do-you-mean-by-archive-genres-of-usage-for-digital-preservers/](https://blogs.loc.gov/thesignal/2014/02/what-do-you-mean-by-archive-genres-of-usage-for-digital-preservers/).

for different, but sometimes intersecting sets of technical work processes and standards at different stages of their preservation, management, and dissemination cycles.

ii. We propose a working **distinction between *digitisation* and *digital preservation***. We acknowledge that digitisation (the act of converting analogue archival materials to digital formats) brings considerable value to preserving and facilitating access to archival content. Separately but relatedly, digital preservation entails selecting from a toolkit of work processes and protocols to ensure the longevity of both digitised and born digital content. These work processes and protocols would include creating and capturing appropriate standards-based descriptive, preservation and technical metadata, and mitigating against digital file format and media obsolescence to protect the integrity of digital content.

iii. For practical reasons we recognize the need to clarify what we mean by *digital archive*, a term which has been more loosely and broadly applied in library settings than in collecting and research archives, and which has a different set of nuances in computer science settings. By digital archive, we refer to both an object and a process. The object would be the organisational system and standard for digital archives as embodied in the Open Archival Information System (ISO14721:2018). The process would be the entire set of individual and collective actions, and the relationships between people, activities and nodes within this system aimed at ensuring the preservation of information and its long-term availability to ‘designated communities’ or to different communities of practice as per the needs of different research contexts.<sup>28</sup> For the purposes of this White Paper, we engage with how libraries and data managers see digital archives, but put the needs and perspectives of historical archives at the centre.

iv. Without adequate attention to *trust* criteria, the ability of institutions to deliver authentic digital surrogates is placed into serious question. The risk would lie in a devaluing of these collections and a great chance that these collections would not be usable or readable in the future. Much of this discussion incorporates the need for digital frameworks, policies and standards that enable practical outcomes such as appropriate digital equipment, organisational processes, people, technology set up and maintenance, adequate storage and backup, and capacity building. The Trusted Digital Repositories Audit and Certification Criteria (ISO16363:2012) is a good starting point for this kind of engagement as it combines and groups trust criteria into three categories: organisational infrastructure requirements; digital object requirements; and technical and security requirements. It also offers working checklists of criteria which organisations can use to track how well they are faring at establishing trustworthy digital archives.

In South African institutions, the shift from analogue to digital modes of access and preservation has been uneven. There is also anecdotal evidence to suggest that, with some exceptions, many institutions digitise archival collections in the absence of formal institutional policies on digitisation, and in the absence of one or more conceptual references that guide the purposes, management and use of digital information. A recent development is that the national Department of Arts and Culture has reignited attempts at a national policy on the digitisation of heritage resources,<sup>29</sup> which would help to standardise and level the playing field. The draft of the current version of the policy indicates strong support for standards-based approaches to digitisation, offering high level guidance to institutions looking to build their digitisation programmes. The draft policy also supports interoperability between different institutions/projects by recommending one or more Common Repository Interfaces (CORIs) as aggregators of digital content, and standardization in metadata

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<sup>28</sup> See Brian Lavoie who writes about the emergence of OAIS as the lingua franca of digital preservation both in theory and in practice. OCLC and Lavoie, ‘The Open Archival Information System (OAIS) Reference Model: Introductory Guide (2nd Edition)’, Second (Digital Preservation Coalition, 1 October 2014), <https://doi.org/10.7207/twr14-02>.

<sup>29</sup> Department of Arts and Culture. 2020. ‘Draft National Policy on the Digitisation of Arts, Culture and Heritage,’ as circulated for comment in May 2020. The previous draft of the policy is dated 2011.

capture and management. At this stage, examples of standards such as Spectrum,<sup>30</sup> Dublin Core<sup>31</sup> and the Open Archives Initiative<sup>32</sup> are mentioned in the draft digitisation policy, but these are not prescriptive and would not apply in equal measure to all institutions covered by the policy. Some principles and recommendations contained in the draft national policy are especially pertinent to UWC:

- Digital copies should be future-proofed so that they don't have to be re-digitised in the future (p. 9)
- Sufficient storage space is needed to host increasing volumes of digital data, and cloud storage solutions are recommended (p. 9)
- Institutional digitisation strategies are needed which factor in the need for access, as well as the maintenance and long-term management of digital archives, metadata standards, and the dissemination of digital resources (p. 9)
- Digital copies are not replacements for analogue materials, and as such the management of their analogue counterparts needs to follow good curatorial practice (p. 9)
- Both analogue and digital rights management must be appropriately managed (p. 10)
- Open access should be the default approach to the dissemination of digital information (p. 11)
- Standards must be applied in the maintenance of digital masters (p. 12)
- Skills and institutional capacity for managing digital information need to be developed (p. 14)

The draft policy and any of its subsequent implementations would have important implications for digital archives creation, management, and access in higher education institutions. At UWC this is especially so because of the university's relationship with the Robben Island Museum in respect of the management of the Mayibuye Collections. However, the implications of the national policy extend far beyond operationalizing and building internal institutional capacity for digitisation and digital archives. **It highlights the need for common approaches, systems and processes that interface with digital archives outside of UWC, in this way contributing to a larger, national infrastructure for accessible and sustainable digital archives and heritage.** UWC and other higher education institutions also have important training, skills development and capacity building roles to play across the multiple disciplines and sectors that have a stake in this national infrastructure.

Finally, a helpful definition of such infrastructure may be instructive. Firstly, data infrastructure consists of assets, identifiers, and registers. Secondly, it consists of standards and technologies used to curate data. Thirdly, it has guidance and policies that inform the use and management of data assets and the data infrastructure itself. Fourthly, it consists of organisations that govern the data

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<sup>30</sup> Spectrum is a museum collection management standard that originated in the UK, oriented towards managing museum objects. It is not an archival standard. It is also not a digitisation standard. Hence it is important to note that some of the standards mentioned in the draft policy do not apply to all institutions covered by the draft policy.

<sup>31</sup> Dublin Core is a metadata specification consisting of 15 descriptive elements. It has evolved as an important prerequisite to discoverability, providing different access points to digital archival collections.

<sup>32</sup> While the Open Archives Initiative is not a standard in itself, it does promote interoperability standards such as OAI-PMH to ensure that scholarly content is made visible and accessible. See <https://www.openarchives.org/>

infrastructure. Finally, data infrastructure includes the communities involved in contributing to or maintaining it, and those who are impacted by decisions that are made using it.

## Part I. The Status of UWC's Digital Research Repositories

Managing the university's research outputs in an accessible manner, as well as the research data associated with these outputs is an important priority for the university. To date, the focus and content of UWC's centralized digital research repositories have thus been the published research outputs and research data generated in the process of creating these outputs. These are important functions that are operationalized by the UWC Library, under the oversight of the DVC for Research and Innovation. The vehicles for operationalizing these efforts are the UWC Electronic Theses and Dissertations Repository (a D-Space repository), and the UWC Research Repository (which is built on Figshare). Elsewhere on campus, decentralized domain specific initiatives are underway. The South African National Bioinformatics Institute (SANBI) and the Institute for Data Intensive Astronomy (IDIA) have demonstrated excellence in digital research, putting out exponential research data sets in bioinformatics and astronomy, respectively. It must be noted that all of the aforementioned initiatives focus *primarily* on research which is intellectually 'owned' by UWC in that they are the sources, products and by-products of research conducted by UWC researchers and faculty. Furthermore, the data formats are primarily born-digital. Through capacity building initiatives such as the Data Carpentries, researchers are being trained to create, manage and manipulate their research data to conform to standards that facilitate long-term sharing and reuse of research data as appropriate to specific disciplines, and which are in line with the directives of the Department of Higher Education and Training and the National Research Foundation.<sup>33</sup>

UWC's historical archives (such as the collections housed in the Mayibuye Collections), both analogue and digital, potentially overlap with the research platforms described above at the point where heterogeneous and 'messy'<sup>34</sup> historical archives are transformed into research data or into research outputs such as film productions, music compilations, or research papers, as can be seen in the images below. ----These potential overlaps depend on the extent to which historical archives are activated or utilized as research sources, and on where and under what circumstances resource sharing between different campus-based digital initiatives (such as between the research repositories, and campus-based archives) may be appropriate.

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<sup>33</sup> In 2015 the National Research Foundation (NRF) issued a statement on open access, for all NRF-funded or partially funded research. The statement communicates the requirement that authors of research publications generated using NRF funding must deposit the final peer-reviewed versions of their publications into an open access institutional repository with a limited embargo period, or a pdf version of the publication (pre or post-print) before the end of the embargo period if publisher policies make provision for this. A second related requirement is for the data supporting the research publication to be deposited in an accredited open access repository with accompanying Digital Object Identifiers (DOI) for referencing and discovery purposes. See the Statement on Open Access to Research Publications from the National Research Foundation (NRF)-Funded Research at <https://www.nrf.ac.za/media-room/news/statement-open-access-research-publications-national-research-foundation-nrf-funded>.

<sup>34</sup> Adapted from the term 'messy data' which refers to data which is unstructured and which requires structure or 'normalisation' in order to be made usable. Historical archives, by their nature, are deeply nuanced and unstructured dealing with a diversity of topics in diverse methods and formats, hence the reference to 'messy archives'.

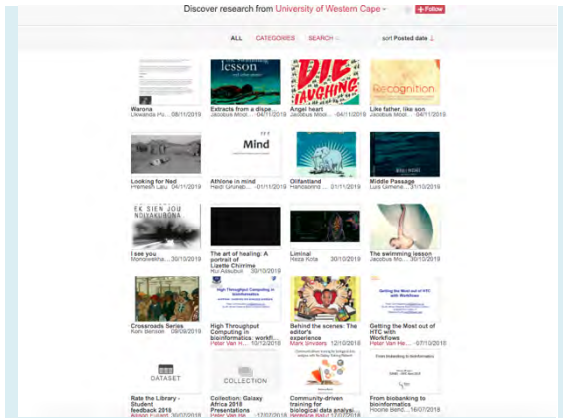


Fig 3. Figshare repository interface, showing completed UWC research outputs

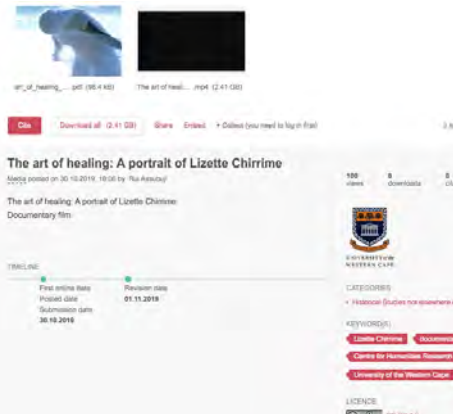


Fig 4. An individual record shown in the Figshare repository

Staff at Mayibuye have a dedicated digitisation programme, the only active historical archives digitisation programme at UWC. According to an Institutional Digitisation Capacity report produced by the Mayibuye Archives, more than 120 000 digital objects had been created by 2017. Between 2017 and the present, there has been a notable increase in digitisation output and in the types of media that have been digitally reformatted (including an outsourced U-matic tape digitisation project). Yet, without formal institutional commitments from its two parent organisations, UWC and the Robben Island Museum, and the resultant absence of high-level policies for digital archiving, the 'stewarding' of digitised content into a robust digital archive remains beyond the reach of the Mayibuye Archives. This kind of robust digital archive should be designed to support preservation of analogue and digital materials, it should be tailored to support digital preservation processes, as well as different kinds of on campus and remote user engagements with the Mayibuye collections.

The foremost recommendation of the 2017 report was the need for Mayibuye Archives to 'develop an Open Archival Information System (OAIS) compliant digital preservation and information management strategy.' This White Paper makes the same recommendation for any future UWC archive (outlined below). Besides having the only active archive digitisation programme presently in place, only Mayibuye has the human and technical resources and skills needed to operationalize digitisation. However, this is only a piece of the digital infrastructure picture. To build a robust digital archive, there are pre- and post-digitisation path dependencies that need to be addressed.

Digitisation thus needs to be much more actively supported by UWC structures and academic departments, as part of thinking archives for the present and the future. This will ensure that:

- baseline infrastructure is in place (key attributes of a trusted digital repository) and strongly supported with high level management commitment
- there are appropriate digital platforms for user access both on campus and remotely.

As an incremental step towards these goals, archival testbed projects should be resourced and initiated to showcase different and creative ways of activating the archives digitally at UWC. In addition, for born digital archival collections, UWC needs to develop plans to deal with their potential diversity. Finally, the current roleplayers or stakeholders need to be named. There needs to be the utmost clarity on who they should be, and how responsibilities should be devolved.

## Part II: Required standards and identification of gaps

The Open Archival Information System (OAIS) reference model is being commonly adopted in South Africa. The model provides a conceptual framework and common terminology for the preservation and dissemination of digital assets. It defines a set of roles, processes, and functions relevant to long-term preservation. Thus, the model provides us with a common understanding of what it is that archives do when they preserve digital information objects. At the same time, it has also given important impulses to move towards greater standardization in the field of digital preservation, including the development of criteria and procedures to analyse and assess archival preservation and dissemination practice. Before we go into this, we need to address certain basic issues.

### Metadata: capture, management, migration, and maintenance

Metadata is a fundamental component of any digital access and preservation programme. Lack of basic metadata threatens the usability of archival materials. When metadata lives separately from the digital objects that they refer to, the integrity of digital objects becomes compromised and particularly so in large-scale digitization initiatives. UWC must support processes for capturing, managing, migrating, and maintaining metadata, bearing the following in mind:

- There are obsolete databases that need to be migrated and linked while the institutional knowledge/memory to do this is still available
- While UWC could provide support for the capturing of basic required metadata, academic departments also have the expertise to enrich archival descriptions with detailed contextual information on particular themes and collections
- Standards need to be identified and agreed upon
- Existing campus resources that could be tapped into include the UWC Department of Library and Information Science, and the History Department's post graduate archives and oral history courses.

### Digital storage, server management and backups

Policies and processes must be finalized on server management, access, permissions, and using the cloud as backup. Archival categories such as the dark archive (preservation), the working archive (archival processing), and the archive for researcher access (dissemination) need to be adequately partitioned. Differences must be clarified, and roles assigned accordingly. Preservation policies should be linked to digital storage priorities.

### Digital archive platform development and maintenance at UWC

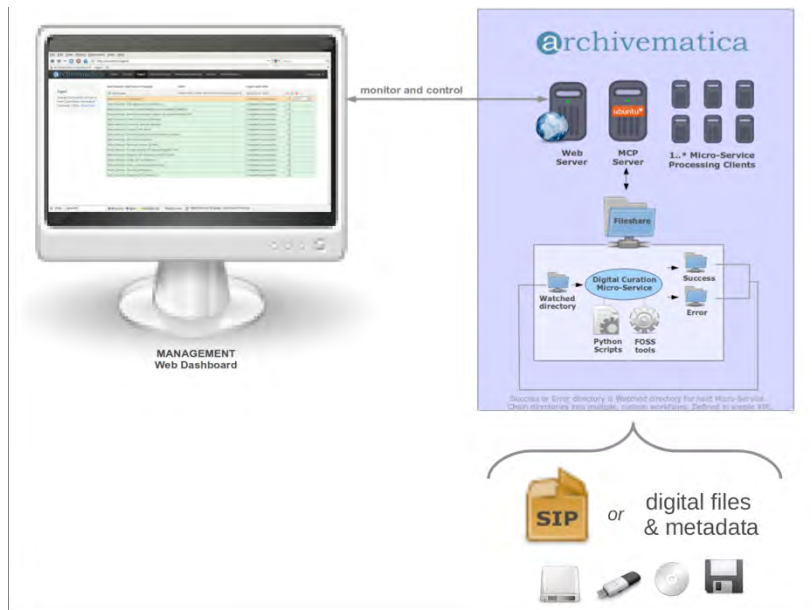


Fig 9. Archivemata and digital curation.

### The Open Archival Information System (OAIS)

The OAIS has been described as ‘the pieces of the puzzle that we need to put together to engage in and sustain digital preservation programmes.’ It addresses a full range of archival information preservation functions including ingest, archival storage, data management, access, and dissemination. It also addresses the migration of digital information to new media and forms, the data models used to represent the information, the role of software in information preservation, and the exchange of digital information among Archives. It identifies both internal and external interfaces to the archive functions, and it identifies several high-level services at these interfaces. It provides various illustrative examples and some ‘best practice’ recommendations. It defines a minimal set of responsibilities for an Archive to be called an OAIS, and it also defines a maximal Archive to provide a broad set of useful terms and concepts.<sup>35</sup>

A determination of archival best practice will be made in a future Collection Development Policy at UWC. This will include documentation of the digital preservation formats the archive will support.

It must be noted that preservation and access are complementary, not an either/or situation. The integrity of digital information (at an access level) becomes compromised if we do not pay adequate attention to preservation (standards, processes, methods for capturing and representing original materials and their contextual information, and for migrating digital created content over time). Other kinds of campus-based research collections may not have the same imperative to preserve as historical archival collections.

The OAIS model identifies the nature of the digital object/s that need/s to be preserved: is it a digitized record? Is it a digitized record which is bundled with appropriate metadata? Is it a database

<sup>35</sup> OCLC and Brian Lavoie, *The Open Archival Information System (OAIS) Reference Model: Introductory Guide* (2nd Edition), Second (Digital Preservation Coalition, 1 October 2014) <<https://doi.org/10.7207/twr14-02>>.

(different levels of granularity)? The system should also consider what formats warrant preservation support.<sup>36</sup>

An advantage is the possibility for two OAIS archives to cooperate. Cooperating Archives are based on standards agreements among two or more Archives. The simplest form of cooperation between Archives is when one Archive acts as a Consumer of material from another Archive. In this case the consuming Archive must support the DIP format of the producing Archive as a SIP format (see below). Cooperating Archives have related communities of interest, so they order and ingest data from other cooperating Archives and possibly have common data Producers. No common access, submission or dissemination standards are assumed. The only requirement for this architecture is that the cooperating groups support at least one common SIP and DIP format for inter-Archive requests. The control mechanism for this sort of inter-operation can be Event Based Order requests at each Archive.<sup>37</sup>

### *Trusted Digital Repositories - Audit and Certification Criteria: ISO 16363 explanation and applicability*

There is a need to highlight a few responsibilities for Trusted Certified Digital Repositories. First, when acquiring the Content Information from any other producer or entity, the OAIS should ensure that there is a legally valid transfer agreement that either transfers intellectual property rights to the OAIS, or clearly specifies the rights granted to the OAIS and any limitations imposed by the rightsholder(s). The OAIS should ensure that its subsequent actions to preserve the information and make it available conform with these rights and limitations.

Secondly, the submission, or planned submission, of Content Information and associated PDI (Preservation Description Information) requires a determination as to who the expected Consumers, or Designated Community, of this information will be. This is necessary in order to determine if the information, as represented, will be understandable to that community. For example, an Archive may decide that certain Content Information should be understandable to the general public and, therefore, this becomes the Designated Community.

### *A brief primer on the OAIS workflow*

We think of the OAIS as a model of a future integrated archive system at the University. America's NASA had developed the system, now widely adopted as the 'industry standard', as a response to the need to preserve an 'explosive growth' of digital objects. OAIS (known as ISO 14721:2003) is widely accepted and utilized by various organizations and disciplines, both national and international, and was designed to ensure preservation. It is considered the optimum standard to create and maintain a digital repository over a long period of time. Strictly a conceptual framework, the OAIS model does not require the use of any particular computing platform, system environment, system design paradigm, system development methodology, database management system, database design paradigm, data definition language, command language, system interface, user interface, technology, or media for an archive to be compliant. Its aim is to set the standard for the activities that are involved in preserving a digital archive rather than the method for carrying out those activities. Finally, the model recognizes the already highly **distributed** nature of digital

<sup>36</sup> See for example University of Michigan Deep Blue Preservation Support and Format Policy describing different levels of preservation support for different formats (<https://deepblue.lib.umich.edu/static/about/deepbluepreservation.html>).

<sup>37</sup> Dissemination and Submission Information Packages. Space Communications and Navigation Office CCSDS Secretariat, *Audit and Certification of Trustworthy Digital Repositories: Recommended Practice, Issue 1* (CCSDS Secretariat, Space Communications and Navigation Office L70, Space Operations Mission Directorate, 2011) <<https://digital.library.unt.edu/ark:/67531/metadc463525/>> [accessed 25 August 2020].

information holdings and the need for local implementations of effective policies and procedures supporting information preservation.

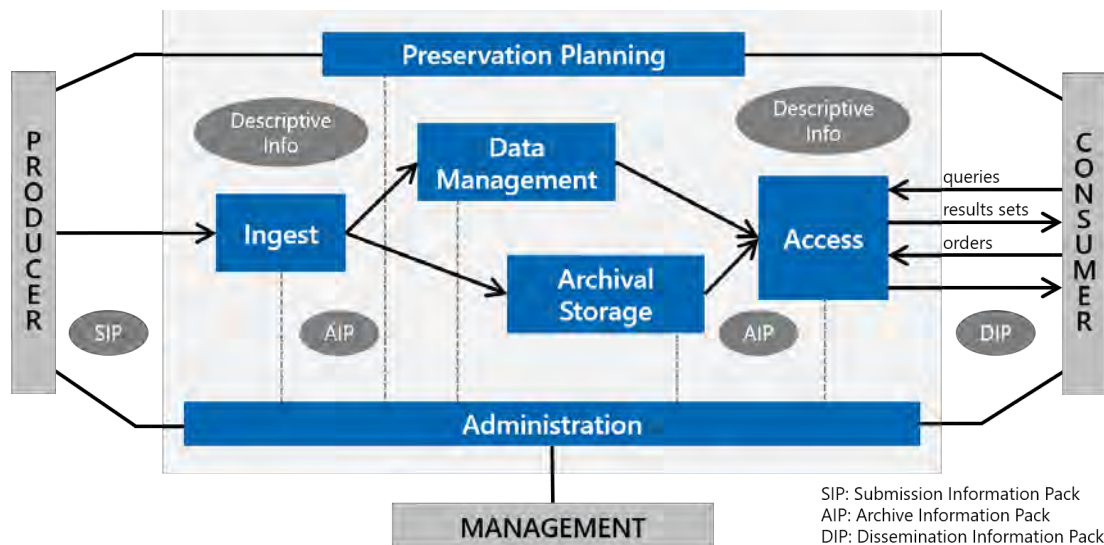


Fig 10. The OAIS functional model workflow

While the technical nomenclature may seem peculiar, it is intended to avoid 'overused' technical terms because of possible unintended meanings. The system has three functional areas for digital archives: ingest, storage and preservation, and dissemination. Each functional area has a corresponding Information Package. We might think of Information Packages as representing an abstraction of the content, requirements, and commitments made at each part of the workflow - namely ingest, preservation and dissemination. The abstraction is necessary to integrate the collected information with the networked technologies now constituting the archive.

The archive takes a long-term view, asking for a transparent history of the object. Put in digital terms, this means that we might routinely need transparency to the bit level - a distinguishing feature of digital preservation. For example, in the case of a digital photograph, a complete technical record, along with descriptive, structural, and administrative metadata (such as rights and obligations). This sets the bar for the preservation of digital information.<sup>38</sup> The system would require that the university negotiate for and accepts appropriate information from information Producers, and that it obtains sufficient control of the information provided to the level needed to ensure Long-Term Preservation. The information diagram appears below.

### Submission Information Package (SIP)

The SIP is the first of three information packages described in the OAIS system and concerns the first stage of acquisition of collection materials. The donated collection, for argument's sake, must provide information satisfying the needs of future users - both human and machine - of items donated to UWC. As a concept, the Submission Information Package updates a well-established principle for today's networked archive.

<sup>38</sup> OCLC and Brian Lavoie, 'The Open Archival Information System (OAIS) Reference Model: Introductory Guide (2nd Edition)', Second (Digital Preservation Coalition, 1 October 2014), <https://doi.org/10.7207/twr14-02>.

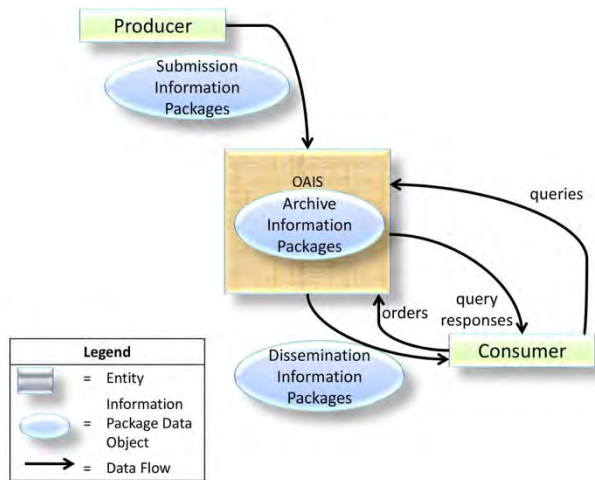


Fig 11. OAIS with SIP, AIP and DIP between producer and consumer

The system describes logical and physical transformations of the Information Package and its associated objects (the Collection) as they follow a lifecycle from the Producer (or donor) to the OAIS, and from the OAIS to the Consumer (eg. student, lecturer, or international visitor). A content provider (eg. a photographer, or website) donates material to the archive in a form called a Submission Information Package (SIP) - typically a database inventory of digital and analogue objects. Once ingested, the OAIS seeks to preserve not only the information (or content), but also its associated context to ensure that the information is understandable, and ultimately, usable by future generations.

Critically, it is meant to enhance **interoperability** between Producers and Archive institutions. The SIP also sets out best practices regarding object metadata, content and structure. In practice this means that the information submitted must be codified in the terms which the institution has set for itself in advance - the metadata scheme, the hierarchies and keyword systems, the database and other software specifications and standards all need to be stated up front and the collection needs to be codified in this form as part of the ingest process. The SIP also specifies a single entity as the owner of the materials and confirms that the owner has the rights to the materials being submitted and verifies the materials. It contains the unique identifiers of the owners, the agreement and the inventory as well as the detailed contextual information.<sup>39</sup>

### Archive Information Pack (AIP)

In this phase, the preservation form of an object (for example, a computer file) is processed. The full context and history of the object is preserved with the object. This 'ingest' process transforms the SIPs received in the Data Submission Session into a set of AIPs and Package Descriptors which can be stored and accepted by the Archival Storage and Data Management functional entities. The AIP is used to transmit archival objects into a digital archival system, store the objects within the system, and transmit objects from the system. An AIP contains both metadata that describes the structure and content of an archived essence and the actual essence itself. It consists of multiple data files that hold either a logically or physically packaged entity.<sup>40</sup>

<sup>39</sup> See [Harvard E-Journal Archive](#) for a sample SIP from Harvard University which may be instructive as a template SIP to start with.

<sup>40</sup> 'Guidelines on the Production and Preservation of Digital Audio Objects (Web Edition) | International Association of Sound and Audiovisual Archives', International Association of Sound and Audiovisual Archives, accessed 5 October 2020, <https://www.iasa-web.org/tc04/audio-preservation>.

Once the SIP is within the system, its form and content may change. An OAIS is not always required to retain the information submitted to it in precisely the same format as in the SIP. Indeed, preserving the original information exactly as submitted may not be desirable. For example, the computer medium on which submitted images are recorded may become obsolete (eg. a floppy disk or an old DOS computer), and the images may need to be copied to a more modern medium.

As an additional risk management measure, the AIP format provides a structure for storing the original submission separately from any data that is created during SIP-to-AIP conversion and during the life-cycle of the AIP. This allows safeguarding the authenticity of the original submission.

### Dissemination Information Package (DIP)

Finally, the DIP is derived from one or more AIPs, and sent by the Archives to the Consumer (lecturer, student, visiting researcher, member of the public, commercial customer) in response to a request to the OAIS. The DIP operationalises access to the collections for teaching, research, commercial or other purposes. First, a Consumer establishes an Order Agreement with the OAIS for information. This information may currently exist in the Archive or be expected to be ingested in the future. The Order Agreement may span any length of time. A network system such as Archivematica/Atom would be used for this process.

An OAIS makes the Content Information in its AIPs visible and available to its Designated Communities. Multiple views of its holdings, supported by various search aids that may cut across collections of AIPs, may be provided. Some AIPs may only exist as the output of algorithms operating on other AIPs. They appear as DIPs that, upon dissemination, should include documentation on how they were derived from other AIPs. The expectations of OAIS Consumers regarding access services will vary widely among Archives and over time as technology evolves. Pressures for more effective access should be balanced with the requirements for preservation under the available resource constraints.

In general, one OAIS is not interoperable with another; however, there are a number of reasons that some level of interoperability may be desirable, motivated for example by Users, Producers or Management. Interoperable Archives may have different Designated Communities—even for the same digital objects—and hence different requirements for Representation Information and/or Descriptive Information. DIP's have a role in this. It could also be used for inter-archival cooperation, in which case co-operating Archives must agree to support at least one common Submission Information Package (SIP) and Dissemination Information Package (DIP) for inter-Archive requests.

## Part III: Bridging the Gap

At present there is a considerable gap between the status quo at UWC and the digital future envisaged by this White Paper. How can we address this gap incrementally? Training and capacity building in integrated archival, academic, and technical skill sets are key measures. Related measures include connecting the archive initiative with resources currently going into existing digitisation projects at UWC. For example, the archival initiative needs to communicate with the eResearch programme at UWC and these both need to filter down to departmental level for maximum benefit. The proposed ICT Archival Working Group would be central to such increased purposefulness and connecting of possibilities. Proposed training through the eResearch platform in Data Carpentries across faculties in 2021 is an excellent start. As part of its 'archive as method' approach, the CHR or other centres/departments might propose digital archiving workshops and critical engagement with the concept of Digital Humanities.

The capacities envisaged would need to evolve continuously. Long term preservation perspectives are important in digital media. The fast-changing nature of the computer industry and the ephemeral nature of electronic data storage media are at odds with the key purpose of an OAIS: to preserve information over a long period of time. No matter how well an OAIS maintains its current holdings, it will eventually need to migrate much of its holdings to different media (which may or may not involve changing the bit sequences) and/or to a different hardware or software environment to keep them accessible. Today's digital data storage media can typically be kept at most a few decades before the probability of irreversible loss of data becomes too high to ignore. Further, the rapid pace of technology evolution makes many systems much less cost-effective after only a few years. Even more daunting, as operating systems evolve, is maintenance of operational software as a part of the Representation Information, which means that it is essential for the preservation of Content Information. In addition to the technology changes there will be changes to the Knowledge Base of the Designated Community which will affect the Representation Information needed.<sup>41</sup>

### Rolling out preservation infrastructure

Having a well-defined plan is both good practice and a requirement for OAIS compliance and for trust certification. In this section we outline key tenets of an envisaged rollout of a long-term digital preservation plan for UWC. In doing so, we follow standardised headings for such a plan, and unpack some implications and recommendations for our UWC context. We also recommend that, in procuring digital preservation solutions, a digital commons or community-based approach is the best fit for a research university, given the considerable long-term risks associated with proprietary solutions.

### *Managing risk: Proprietary vs Community Models*

*“Scientists already imagine that DNA will replace server farms, given that DNA is a dense and long-lasting medium. In less than a decade, ..., DNA will become a common storage format and medium.”*

Mél Hogan, DNA, in *Uncertain Archives, Critical Keywords for Big Data*.<sup>42</sup>

UWC's current draft Institutional Operating Plan commits to the 'digitalisation' of business processes as part of a digital transformation approach, giving increased attention and support to e-research and cloud computing requirements. This emphasis on the digital comes in the context of unprecedented and rapid change in the landscape of higher education; a process exacerbated by global pandemic. There are, of course, several aspects to the digitalisation of a university's research mandate. Indeed, the literature speaks of a new emphasis on the complex research workflows inside the modern university.

Yet there are risks that pertain to research preservation. A recent study confirms that because of the relative size of the industry, emerging companies in this field tend to merge or get bought out by larger ones such as Elsevier and ProQuest.<sup>43</sup> Indeed, digital preservation technologies and their

<sup>41</sup> This is according to the Consultative Committee for Space Data Systems (CCSDS) Secretariat.

<sup>42</sup> Nanna Bonde Thylstrup, ed., 'DNA', in *Uncertain Archives: Critical Keywords for Big Data*, by Mél Hogan (Cambridge, Massachusetts: The MIT Press, 2020).

<sup>43</sup> Roger C. Schonfeld, 'Big Deal: Should Universities Outsource More Core Research Infrastructure?', Ithaka S+R (blog), accessed 22 May 2021, <https://sr.ithaka.org/publications/big-deal-research-infrastructure/>.

workflows are the subject of several research projects.<sup>44</sup> This tendency towards proprietary enclosure seems intrinsic to the small niche of specialized digital preservation vendors for the foreseeable future. Hence the argument to use proprietary vendors cautiously, and to favour community-based and open-source architectures, especially for the university's own research assets such as preservation research data, artworks and other collections. Another author states the case in stronger terms, asserting that universities outsourcing the management of strategic assets to proprietary systems are effectively acting:

*as brokers rather than curators – a dangerous step in any time, but particularly so in one so fraught with economic tensions. If cultural institutions want to continue serving as cultural stewards of the digital age, they must be active players, not passive clients of for-profit organizations.*<sup>45</sup>

To adopt a proprietary cloud solution on a permanent basis is to effectively outsource the curation and management of a university's critical knowledge and data assets. Archival preservation requires long-term thinking: beyond the lifespan of any current technologies. While an online and digital form will be currency for the foreseeable future, archives seek to allow for what might lie beyond the present technologies - DNA in place of server farms to offer one example being developed. The next new technology is always already emerging. It is for this reason that we urge the embrace of commons approaches to preservation - a community-driven ethos for humanities research institutions, and of open-source digital technologies as far as possible, affording the higher education sector a measure of control over how to mitigate against the rate of obsolescence and over how to ensure these assets migrate sustainably to a future technology, while retaining integrity and accessibility to our designated community.<sup>46</sup> It is also worth repeating a tenet of the Universal Declaration on Archives which declares that "Archives are managed and preserved in ways that ensure their authenticity, reliability, integrity and usability."<sup>47</sup>

An OAIS compliant preservation plan thus should typically contain the following elements:

- Identification,
- Status and triggers,
- Description of the institutional setting,
- Description of the collection,
- Requirements for preservation,
- Evidence of decision for a preservation strategy,
- Costs,

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<sup>44</sup> For example, see Oya Y. Rieger, 'The Effectiveness and Durability of Digital Preservation and Curation Services', Ithaka S+R (blog), 22 March 2021, <https://sr.ithaka.org/blog/the-effectiveness-and-durability-of-digital-preservation-and-curation-services/>.

<sup>45</sup> 047668>. Tyler O. Walters and Katherine Skinner, 'Economics, Sustainability, and the Cooperative Model in Digital Preservation', Library Hi Tech, 28.2 (2010), 259–72 (p. 262) <<https://doi.org/10.1108/07378831011>

<sup>46</sup> In this we take courage from a policy draft by the South Africa DSAC which commits to a commons approach to digital preservation. All national digital repositories contemplated within the scope of the policy must exclusively use open standards for all digital file format and should make use of open source software where this is possible 'Draft National Policy on Digitisation' (Department of Sports, Arts and Culture, 2011).

<sup>47</sup> 'Universal Declaration on Archives | International Council on Archives' <<https://www.ica.org/en/universal-declaration-archives>> [accessed 12 May 2021].

- Roles and responsibilities, and
- Preservation action plan.

### *Identification*

This heading signals that a preservation plan should be uniquely identified so that it can easily be referred to and retrieved. For our purposes, it is centred on supporting the humanities at UWC – even as it seeks cooperation with other faculties, internal and external, such as the mathematical, social, physical, information, computer, and biological sciences. The Mayibuye Collections are at the heart of this legacy, which is now due for a refoundation.

We propose a two-tiered approach to preservation planning - lets call it Phase One and Phase Two. Phase One would occur in tandem with the University's normal five-year IOP cycle and be focussed on getting our archival house in shape. It would place fewer demands on the institution whilst enabling a scoping exercise or Proof of Concept (See appendices for an example from Artefactual). In this phase, the university might adopt a hosted cloud preservation service. Such a process would enable the university to consolidate its collections, train a cohort of staff and students for digital preservation and implement the other recommendations of this White paper.

Secondly, we recommend a parallel but longer-term planning process - Phase Two - in which the university works with partners to build a more robust digital preservation workflow – likely an on-premises server system with its own cloud solution with capacities shared across national and international consortia building a preservation infrastructure on a community basis. Hence, we recommend the two planning perspectives in tandem. We envisage that these two planning phases would be interdependent, with the one inwardly focused to UWC's community, and the other towards building and modelling external strategic partnerships. The community approach is in line with another provision in the IOP. We need to allow for it now in the planning. Infrastructure needs scale and there are other ways to achieve the necessary scales with other consortium models.

### *Status and triggers*

The status of an institutional preservation plan includes two things. First, the planning progress—whether a plan is currently being defined, awaiting approval, or already has been deployed and is active. The second element of the plan is its triggers. We might think of triggers as developments or events which lead to a review of the long-term plan. Such triggers include the acquisition of a new collection or a changed collection profile.<sup>48</sup>

We are of course in the middle of such a trigger event – in fact, we outline several such trigger developments elsewhere in Section II of this White Paper - including, for one, the need to stabilise and secure vital historical collections in the university's care, and for another, the fact that UWC's designated community of scholars, teachers and the public need sustainable access to these materials for research, publication and teaching - the institution's core business. Another trigger is the Rashid Lombard Collection acquired recently, and which represents significant new growth that will impact seriously on the current capacity of the university collections. Finally, new challenges of developing digital preservation infrastructure may be two.

Other trigger scenarios may include a new object type, a changed risk assessment, a change in preservation tools and services, impending obsolescence, new standards, a change in institutional policy, change in environment (technical, or designated community).

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<sup>48</sup> Sourced from Christoph Becker and others, 'Systematic Planning for Digital Preservation: Evaluating Potential Strategies and Building Preservation Plans', *International Journal on Digital Libraries*, 10.4 (2009), 133–57 <<https://doi.org/10.1007/s00799-009-0057-1>>.

### *Description of the institutional setting*

In its description of the institutional setting, the plan should offer a clear understanding of UWC's designated community, and the mandate of the repository. It should also clarify the legal and operational issues and preservation policies. Both are important parameters for decisions throughout the preservation planning process.

This section supports the specification of requirements and brings to light the users' priorities. It should include a detailed usage model which describes how users work with the collection – the academic process - and which priorities they have. Substantial insight can be found in subsequent sections of the White Paper on the interface with the university's teaching, research and public education profiles.

Collection Management Policy describes how UWC is carrying out its mandate and defines organisational characteristics and goals of the repository. Policies may also constrain the range of potential preservation actions to be considered for the collection.

### *Description of the collection*

The UWC IOP's Integrated Digital Transformation Plan offers to improve support to data-intensive research requirements through cloud-based capacity solutions.<sup>49</sup>

In addition to the collections described in Section II of this White paper, the archives will likely acquire collections from existing faculty or units at the university – such as those housed at PLAAS. Integration with teaching and research will likely see born-digital materials from the Fallist era, websites, blogs, e journals owned by UWC. This may call for different submission and ingest procedures, often automated via webscraping, for example. We might potentially include legacy analogue materials from UWC scholars such as Prof. Ben Cousins and other eminent recently retired scholars.

### *Requirements for preservation*

This section should include a resolution by an official structure of the university adopting a preservation plan and policy. It should also contain other supporting evidence - such as membership of professional bodies, consortia. In a preservation plan, this section would describe the technical requirements underlying preservation planning decisions in detail – such as preservation formats, desired process characteristics, cost limits, or technical constraints that must be considered. This has a basis in evidence which is central to the Trustworthy status of the repository.

The task in this section would be to select the most suitable components in a set of complex constraints. Revisit policies and address gaps and to innovate in the following sequence:

- Define requirements
- Evaluate alternatives
- Analyse results
- Build preservation plan.

Preservation in the digital terrain is 'always and already an act of will', and one that takes ongoing work for every asset. Timing is everything in this case – we cannot wait for the perfect solution because that is an ever-moving target. The digital infrastructure within which our digital assets exist is ever-changing in terms of hardware and software. Likewise for the protocols and standards they use. Digital files are in constant danger of morphing into unusable zero's and 1's because of such

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<sup>49</sup> See the previous Section of this White Paper - legacy collections from IDAF and others, Lombard Collection, Artworks.

threats as bit rot, hackers, user errors, and natural disasters (including power outages, floods and fires).<sup>50</sup>

Under the 'Requirements' heading, a plan should include a list of preservation actions and alternative actions that have been carefully considered, eg. selection criteria. Such a plan should evaluate the results against these requirements, and should document all decisions pertaining to it, particularly the effects of applying the decision. In the case of digital documents, for arguments sake, a decision to migrate to the preservation standard PDF/A using a specific tool might be the right one; however, without proper documentation of the reasons and the evaluation leading to it, the recommendation cannot be considered trustworthy.

This section would also specify the required affordances and parameters of the archive's preservation formats. There are several matters to consider in arriving at these decisions. A sample guide could be accessed at the Library of Congress, although there are several resources to draw on.<sup>51</sup>

In this section the plan also considers ongoing case studies in order to revise and extend the previously conducted evaluation studies, build concrete preservation plans for specific collections of objects and cover new scenarios that have not been evaluated yet, such as database archiving, in a variety of institutional settings. Finally, this section should contain evidence of a decision for a particular preservation strategy.

#### *Sustainability, costs and benefits*

*"There likely will never be a perfect solution in technical terms; more likely, we will develop a set of evolving curatorial processes that help ensure the usefulness of these digital objects for present and future generations."<sup>52</sup>*

The core purpose of its digital preservation drive is to ensure that the university's collections are both accessible as well as understandable to its future designated community without the need for expert intervention. For digital media it requires an unbroken chain of continuity and integrity from the born-digital original to future preservation formats. This is the primary meaning of 'sustainability' in this context.

In this section, the preservation plan would list key sustainability factors for the long-term. In the context of a proliferation of vendor solutions for university research workflows, we have proposed that UWC adopt a community-based approach – supporting non-proprietary and open-source technology solutions wherever possible in the procurement of services. This is so because of the nature of preservation work in which the risk of lock in by powerful vendors is real. It is also a basis for advocacy to the Higher Education and cultural sector to ensure that future UWC scholars and students inherit enhanced value from the university's research data and collected assets.

At the same time, a community approach can incentivise universities to seed open-source developer communities which can sustain the network in the long term. In other words, one implication of a decision to go the community route is likely greater reliance on 'local' technical capacities around a particular preservation tool. Open source is a global community with certain working methods. Technologies turn over too rapidly to be sustainable in the long term for higher education. In an environment of rapid obsolescence, what is needed is probably better described as nomad science –

<sup>50</sup> Walters and Skinner, 'Economics, Sustainability, and the Cooperative Model in Digital Preservation'.

<sup>51</sup> 'Recommended Formats Statement – Table of Contents | Resources (Preservation, Library of Congress)', web page, accessed 25 May 2021, <https://www.loc.gov/preservation/resources/rfs/TOC.html>.

<sup>52</sup> See Walters and Skinner, 'Economics, Sustainability, and the Cooperative Model in Digital Preservation'. Also, Christoph Becker et al., 'Systematic Planning for Digital Preservation: Evaluating Potential Strategies and Building Preservation Plans', *International Journal on Digital Libraries* 10, no. 4 (December 2009): 133–57, <https://doi.org/10.1007/s00799-009-0057-1>.

access to informal networks of technicians and enthusiasts who conjure with legacy technologies (How to fix an 8mm projector, how to fix local record players, how to work a dark room and, in the digital realm, to think of a community of ethical hackers who can help sustain open-source systems. This has implications for the wider institution in what choices it makes and how it builds for the long term. This principle should guide preservation planning since we believe it a question of sustainability. The two measures go together. Resilience comes from epistemic access, which includes access to legacy technologies and to data, coding and related skill sets within a knowledge common.

This also goes for internal collaboration. At UWC the blurring of boundaries and the lifecycle changes which digital technology produces means that sections and departments which are structurally distinct, have incentives to co-operate to integrate the preservation and management of digital materials with other materials.<sup>53</sup>

#### An economics of the backlog

Backlog management is a key planning indicator for archive and museum collections, and hence critical for the management of sustainable preservation practice. The concept of 'Responsible Stewardship' emerges from shared reflection on this generic archival problem. When we collect beyond our capacity to steward collections, it builds backlogs of uncatalogued and unprocessed material which, then, is not available for access by designated communities. Responsible stewardship refers to an institution's commitment to making informed, ethical, and transparent decisions about how to provide care for the collections entrusted to it. Responsible stewardship also assumes that a realistic assessment of institutional capacity is factored into every acquisition decision.<sup>54</sup>

What is the total cost of stewardship? This ties into a long-term preservation plan and budget - in addition to the usual annual and five-year planning cycles at university. It asks that a clear understanding of an archive institution's current Collection Management capacities should inform both collection development decisions and fundraising and development planning.

Here we might quantify such costs as infrastructure characteristics, emphasising cost factors instead of actual s - administration, media and data capture, transposition, appraisal time, storage costs, and so on. One indicator is the so-called Annual Capacity for Stewardship: the amount of labor, supplies, and other resources an institution can devote to stewardship activities annually.

Archives can also identify Capacity Constraints - factors that limit production, performance, or output. In the Total Cost of Stewardship context, a capacity constraint impacts an institution's ability to accomplish collection management activities. Taking inventory of technical capacities allows for planning and resource allocation for collections that might require time for research and experimentation, the purchase of new equipment, or assistance from a vendor.

It is also important to qualify and quantify value. UWC is host to considerable riches in its collections which have not been accessible or celebrated. These include the CAP Collections, a unique

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<sup>53</sup> 'Digital Preservation Handbook', accessed 28 August 2020, <https://www.dpconline.org/handbook>.

<sup>54</sup> Chela Scott Weber and others, 'Total Cost of Stewardship: Responsible Collection Building in Archives and Special Collections', *OCLC*, 2021 <<https://www.oclc.org/research/publications/2021/oclcresearch-total-cost-of-stewardship.html>> [accessed 12 May 2021]. While the authors focus largely on a librarianship context, we include preservation more explicitly as an adaptation. The question of how to best allocate limited resources to address backlogs and to generally be responsible stewards of the collections and resources entrusted to our care was subsequently extended to the larger collection management process.

collection of community arts undervalued in the gallery sector. UWC's stewardship of these materials offers an important enhancement of its research and general value to the public. Similarly, with there being no record of works by globally celebrated artists such as Malangatana Ngwenya on UWC campus, its value is currently lost on the university community and needs to be institutionalised and celebrated.

While value isn't as easily quantifiable, regularly assessing value is just as important to rigorous consideration of collecting opportunities as assessing costs. There are multiple types of value a potential acquisition might have and benefits it might bring to a repository, among them are research, documentation, or artefactual value; the value to mission of an acquisition that will be a strong support for curricular priorities; or the recognition and public relations value that a high-profile acquisition can bring to an institution.

### Sustainable Skills

The biggest cost in an archive operation is likely to be staffing. Given that a commons approach places more pressure on the institution to produce the necessary skills, this is a critical factor in the cost of stewardship. Hence, for digital preservation - it is important to develop an Information Strategy which integrates IT training with the overall mission of the institution. Moreover, it requires skills audits, to determine what specific competencies are required to meet organisational objectives, including horizon-scanning for new and emerging skills, activities and responsibilities. Finally, this requires finding a balance between recruiting specific skills and effectively developing existing talent.

Beyond staffing skills, a digital repository should also be mindful of open source as an ecosystem within which it operates its tools as a distributed resource. The open-source (FOSS) tools which a digital repository may use are likely sustained by one of the many open-source developer communities. Open-source software underpins not just the nonprofit world but is a lifeblood of the large technology stacks at Microsoft, Amazon, Google, Mozilla, and elsewhere. They are a key driver of the global commercial technology industry, not to mention the non-profit sector. Hence our proposition that UWC engage in a consortium in which this capacity can be nurtured and grown over time.

Given the flux in this field, and the dearth of training opportunities for digital preservation, we also recommend taking a broad view of what constitutes training and development (that is, we consider a combination of formal courses, both generic and tailor-made, informal training within the organisation, skills transfer within the organisation, networking and so on.). Hence, a preservation ethos built on a commons approach requires sustainable access to archivist, and developer networks and to ongoing informal and formal upskilling. Sustainability in terms of tools may include an active user base, support, and development and updating of software. For instance, a large user base, both in terms of commercial and open-source providers can be a vital indicator for identifying a viable tool. The technology moves rapidly and in ways that are hard to predict. A developer community can change rapidly. 'New kids on the block' can quickly become mainstream while large communities can dwindle as quickly as new technologies overtake existing ones. Consequently, it may be necessary to monitor the health of the developer community supporting your tools.<sup>55</sup>

### Vendor Procurement

With the digital turn in full swing, vendor procurement is a strategic decision for a modern university. This important decision should be based on the larger context described in this white paper. For one, a key consideration is where the tools sit on an overall workflow so before selecting tools it helps to consider and map out the entire workflow. Being explicit about a workflow can also help identify redundant processes as well major bottlenecks. One frequent challenge is that tools

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<sup>55</sup> 'Digital Preservation Handbook'.

solve a problem in one element of a workflow, only to create a problem elsewhere. In addition, organisations may have multiple workflows that may have different requirements that conflict in some way. Describing a workflow therefore provides a basis for anticipating difficulties and can provide a roadmap for ongoing development.

Cloud is recommended in the UWC IOP as the basis of the new digital transformation process. There are several iterations of cloud support for digital preservation workflows. We recommend working towards an independent solution in which sustainable ownership is embedded. There are several open-source options appearing such as the NextCloud open-source Enterprise solutions.<sup>56</sup> As with any form of outsourcing, it is important that archives exercise due diligence in assessing and controlling the risks of cloud storage, ensuring that any legal requirements and obligations relating to third party rights in, or over, the data to be stored will be met. These may relate to management, preservation, or access, and may have been placed upon archives and parent organisations by their donors and funders via contracts and agreements or via legislation by Government. Explicit provision must be made for pre-defined exit strategies and effective testing, monitoring and audit procedures.<sup>57</sup>

As mentioned above, we propose a staged graduation to a distributed archive network on private cloud servers sustained within the Higher Education system through a blend of partnerships and own resources, leveraging synergies and efficiencies, managing risks and removing duplication of functions.

#### *Procurement indicators for Artefactual's suite*

The free and open-source (FOSS), community-driven model provides the best sustainability model, enabling institutions to pool technology budgets and to attract external funding to develop core application features as requirements evolve. This means the community pays only once to have features developed, either by in-house technical staff or by third-party contractors. The resulting analysis work and new software functionality can then be offered at no cost in perpetuity to the rest of the user community at-large in subsequent releases of the software.

This stands in contrast to the lock-in practised by commercial vendor models. In this situation, institutions co-invest expertise developing preservation solutions yet cannot share that technology with colleagues or professional communities because of restrictive software licenses imposed by the vendor.

#### Open-Source Preservation Formats

We propose subscribing to four basic criteria for preservation formats - taking a cue from Artefactual. First, the specification must be freely available. Second, there must be no patents or licenses on the format. Thirdly other established digital repositories should be using or have endorsed the format. Fourthly, there should be a variety of writing and rendering tools available for the format.

We have seen elsewhere in this White Paper a preference for the Archivematica/ AToM suite. Archivematica is a Web application suite comprised of two major components – a Storage Service for managing long-term disposition of digital assets in the form of archival packages, and a Client panel (or Pipeline) for processing digital accessions, i.e. transforming sets of files into submission packages, before they are ingested by the Storage Service. There are numerous ways that these two

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<sup>56</sup> <https://nextcloud.com/>. Nextcloud is positioned as a self-hosted, open-source cloud solution in competition with the large technology stacks such as Office 365 and Google Office.

<sup>57</sup> 'Digital Preservation Handbook'.

components can interact, and the setup can vary depending on whether it is used by a single department within an organization, cross-departmentally or by a consortium of organizations.

#### Micro Services Environment

Archivematica uses a micro-services design pattern [containerised Linux environments on local Linux, Mac, or Windows] to provide an integrated suite of software tools that allows users to process digital objects from ingest to access in compliance with the ISO-OAIS functional model. Users monitor and control the micro-services via a web-based dashboard.

For metadata, Archivematica uses METS, PREMIS (events, agents, rights and restrictions), Dublin Core, the Library of Congress BagIt specification and other best practice standards and practices to provide trustworthy, authentic, reliable, and interoperable archival packages (AIPs) for storage in a repository.<sup>58</sup>

Start with hosted cloud, graduate to local cloud server network.

It seems viable to build a digital preservation and access workflow on a trial basis with Archivematica/ AToM while researching more local and robust options with partner organisations such as Wits and the National Research Foundation.

It is also possible to consider virtual private server (VPS) in such a phased rollout - a virtual machine sold as a service by Internet hosting companies. A virtual private server runs its own copy of an operating system (OS), and customers may have superuser-level access to that operating system instance, so they can install almost any software that runs on that OS. For many purposes it is functionally equivalent to a dedicated physical server and, being software-defined, can much more easily be created and cond. A virtual server costs much less than an equivalent physical server. However, as virtual servers share the underlying physical hardware with other VPSes, performance may be lower, depending on the workload of any other executing virtual machines.

The table below summarises a snap survey of potential vendors for a hosted cloud service. It will be noted that only one is built on an open-source commons approach. While on the face of it, the Artefactual suite is not the cheapest, it offers the best fit with the principles we have been outlining in this White Paper. The costings offered in the diagram are provisional and incomplete and are for illustrative purposes only:

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<sup>58</sup> The 'microservice architecture' - is a software architectural style that structures an application as a collection of services that are highly maintainable and testable, loosely coupled, independently deployable, organized around business capabilities, and owned by a small team. The microservice architecture enables the rapid, frequent and reliable delivery of large, complex applications such as Archivematica. Critically, it also enables an organization to evolve its own technology stack. See [https://microservices.io/..](https://microservices.io/)

SYSTEM	LICENCE	AFFILIATION	SETUP	STORAGE RATE	CAPACITY	ANNUAL SUBS	TRAIN/CONS	PRODUCT	COMMENT
African Media Online/Preservatio	Proprietary	Private	R102 750,00			R43 350,00		Preservatio for Institutions	
Archivematica / AToM	Open source	UNESCO/ICA				R200 000,00			Intensive local reliance
Duraspace	Proprietary	Lyrasis hosted	R90 000,00	R10,000/TB	19TB			DuraCloud Enterprise Chronopolis	Dark Archive TDR Retrieval Fee is extra
Preservica	Proprietary	Amazon Web Services		R4,000/TB	unlimited	R192 000,00		Essentials and Professional	
Preservica	Proprietary	Amazon Web Services		R200/TB		R1 000 000,00		Enterprise	
						R2 000 000,00		On Premise	

### Cooperative models

Finally, beyond vendor support, and casting an eye to the near future, with the previous recommendations in the process of implementation, we envisage UWC entering into agreements with partner institutions to share the risks, costs and reinforce the access benefits of preservation. The current IOP makes provision for international and regional partnerships. It is an option for which the ground can be laid in parallel with an institutional preservation plan. Distributed digital preservation (DDP) methodologies hold that any responsible preservation system must distribute copies of digital files to geographically dispersed locations. It also must preserve, not merely back-up, the files in these different locations. It is likely other institutions share such a commitment to meet agreed benchmarks for entry into a partnership or consortium.

There are understandably many organizational considerations involved in establishing a collaborative association of institutions for the purpose of long-term preservation. Among these considerations are issues relating to contributor roles and responsibilities, governance structures, agreements between contributors, and member staffing requirements.<sup>59</sup> Such networks often share collections which have a focus common to the institutional partners involved. A DDP network may be open to only the contributors' servers for ingesting (dark archive). Alternatively, it may be open to specific users, such as the contributing institutions' communities (dim archive). Finally, it may provide unrestricted access (open archive). This status will determine whether contributors will focus solely on long-term preservation issues, or some combination of preservation and public access issues. Whether or not the preservation network accommodates public access to the preserved content, each member institution must be responsible for implementing appropriate standards for addressing copyright, intellectual property, and issues related to content that has been contributed.

Hence, the pooling of limited resources is encouraged, not just for the cost of technology, but for the investment in developer capacity, and the critical and ongoing training of archivists in the new skills. In the LOCKSS model, content monitoring is a responsibility shared between the content contributor, each preservation site, and various designated central staff. In the event of catastrophic loss at a content contributor site, restoration can take place from another cache containing replicated content. Similarly, in the event of

<sup>59</sup> MetaArchive Cooperative, Katherine Skinner, and Matt Schultz, *A Guide to Distributed Digital Preservation* (Educopia Institute, 2010) <<https://digital.library.unt.edu/ark:/67531/metadc12850/>> [accessed 11 April 2021].

catastrophic loss at a preservation site, content can be restored by a re-ingest at the content contributor site or any other cache in the network that contains the relevant collections.<sup>60</sup>

Given the extent of existing buy-in with the OAIS system in South Africa, a consortial approach is desirable and advisable. This is also necessary given the scale and extent of capacity building required to build a certified digital preservation repository. Long-term digital preservation at a consortial level is an area worth exploring and developing further. Digital preservation is a broad endeavour and a rapidly developing facet of digital collections and institutional repositories, and yet is often an area that is not fully understood or implemented by many libraries and archives, largely because institutions lack the necessary resources to do it alone.<sup>61</sup> As an important national partner therefore, UWC needs to pursue where the NRF is going with its digital training programmes and resources based at the University of the Witwatersrand's digital hub.<sup>62</sup>

International partnerships are likely to be vital to UWC's advancement in digital infrastructure and capacity development. The University of Michigan African Presidential Scholars Programme (UMAPS) was previously only open to faculty, but this can now also be extended to include professional staff (see [University of Michigan African Presidential Scholars \(UMAPS\) Program | UM LSA African Studies Center](#)). The University of Virginia (UV) has impressive digital collections that are accessible, and UWC's partnership with UV might be cultivated in this direction, as well as existing strong partnerships with Missouri and Ghent. It is also worth considering other institutions here such as the Netherlands Museum of Photography in Rotterdam who can be approached about training and capacity building, and possibly also joint programmes involving the photographic archives held at UWC.

## Summary Recommendations

The long-term recommendation of this White Paper is a migration to one system for all the archive collections at UWC, ultimately an 'archive of the commons'. However, it requires a series of incremental measures that move the university increasingly into this domain of possibility.

The institutional plan committed to a strategic focus on instructional design; ongoing research into the field of innovative education and communication technologies; software development and application; digital academic literacy programmes; ongoing ICT skills training; design and development of materials for multiple digital platforms; and the creation of integrated, seamless and flexible processes and infrastructure to support a well-connected campus. The university's current operational plan predicted increased emphasis on learning, and the pandemic period with its increased eLearning needs has to date vindicated this prioritisation. The significant gains in improving pedagogical practice and the scholarship of teaching and learning will be a base for developing flexible and carefully

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<sup>60</sup> See <https://www.lockss.org/> and Katherine Skinner, Matt Schultz, and Matt Schultz, *A Guide to Distributed Digital Preservation* (Educopia Institute, 2010), <https://digital.library.unt.edu/ark:/67531/metadc12850/>.

<sup>61</sup> For an account of such a consortial approach see Shaun Trujillo and others, 'Archivematica Outside the Box: Piloting a Common Approach to Digital Preservation at the Five College Libraries', *Digital Library Perspectives*, 33.2 (2017), 117–27 <<https://doi.org/10.1108/DLP-08-2016-0037>>.

<sup>62</sup> For example, see Pat Liebetrau and National Research Foundation (South Africa), 'Managing Digital Collections: A Collaborative Initiative on the South African Framework' (Pretoria: National Research Foundation, 2010).

aligned processes to promote responsiveness and enable students to improve their learning ability and increase their chances of excelling in their studies.<sup>63</sup>

However there needs to be a convergence between the existing goals of the university and growing our archival potential, which would also open the door to increased research activity (also an important goal of the current IOP). This White Paper therefore proposes the following immediate and longer-term steps.

First and foremost, we recommend immediate action on specific recommendations made in the Interim Report of July 2019, namely to:

- Set up an ICT Working Group consisting of archivists, IT professionals and academics to steer the creation of a trustworthy digital repository. This group should meet on a regular basis and report to the UWC office of Institutional Planning;
- Develop digital testbed projects which demonstrate the practical potential of digital archives, for example testbeds for researchers working with born digital materials.

In dialogue with an ICT Archival Working Group and guided by this White Paper, the following should then be put into practice:

- the creation of an **archive-centred digital management plan**. Notwithstanding the strategic importance and pervasiveness of the digital, such a plan would approach digitisation as an equal among several critical tasks in a modern archive. With the exception of born-digital materials, digitisation does not offer an adequate substitute for the original or analogue form;
- ensure the archive's digital **interoperability** with other systems. It will be a task to balance issues of pedagogy and of compatibility with older formats: it is important not to lose sight of this in policy and planning, a continuous chain of compatibility with earlier digital forms, documents, and in film, video, photography, sound;
- build **cooperation with the sciences**: computer science, astronomy and other disciplines have much to teach and to share - both in assisting us to build basic best practice and in fostering innovative dialogue in archive, research and curatorial practice.

The archives will be housed in a repurposed Old Senate building – and here provision will need to be made for the eventual preservation technology stack – likely to include a server setup, backup power, with flood, fire and other disaster proofing measures.

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<sup>63</sup> See 'UWC Institutional Plan Whitepaper.Pdf', accessed 7 May 2020, <https://ikamva.uwc.ac.za/content/whitepaper.pdf>.

### III. TOWARDS AN ETHICAL INFRASTRUCTURE

*"There are challenges in transferring materials from their anti-apartheid resistance contexts to post-apartheid institutional contexts. The responsibility of turning records of resistance into an archive for the future needs to be addressed."*

- Ethics Symposium - Building Trusted Archives, held on Friday 31 May 2019, Centre for Humanities Research

*At the very basic level, the definition of a trustworthy digital repository must start with 'a mission to provide reliable, long-term access to managed digital resources to its Designated Community, now and into the future'.<sup>64</sup>*

- Open Archival Information System, Reference Model

In this 'refoundational moment' we submit that the university officially names UWC and the public at large - including the southern African region - as the Designated Community of the new UWC archives, inscribing its support for the perpetual preservation needs of this community. In this section we describe an 'ethical infrastructure', giving effect to the Trustworthy condition discussed in the previous section. The revitalised UWC archive, in its founding and policy documents, articulates an ethos based on liberation legacies, and looks perpetually to the future needs of its Designated Community. It frames how the archive approaches its obligations with respect to rights, obligations, legal frameworks, stakeholder relations, human and machine relations, preservation and audit. In practical terms, we propose that a Long-Term Preservation Plan (As discussed in Section III) guides the development of a Collection Development Policy and Audit (and the implication of an appropriate governance structure to champion this covenant with the future).<sup>65</sup>

An archive represents a 'covenant' with the future. We mentioned in the preamble that, in a new foundational moment, building on legacies while guiding a future oriented UWC Collections Development Policy. An archival infrastructure is an expression of these agreements and systemic actions. This section considers the core elements of an 'ethical infrastructure' for a new archive environment at UWC. This infrastructure may build on a shared articulation of UWC's ethos and is its expression in policy and in a multiplicity of creative and research outputs. In addition to documented archive policy, it is made up of human and technical systems whose working undergo regular accounting, audit and 'transparency to the bit level'.

It would be good practice to have an ethical 'infrastructure' in place for navigating future challenges to come - as they must. An ethics workshop held in 2019 scoped the issues for activist archives. These are all what may be contained in a UWC preservation plan and collection development policy applicable to the different archives on campus or within the university's ambit. They include:

- Maintaining relationships, across changing contexts, with archival patrons, donors and people with vested interests in the Mayibuye collections.
- Understanding our obligations in terms of archival, heritage and information legislation -- as well as ethical and moral responsibilities which are context-specific, and not covered in these laws.

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<sup>64</sup> OCLC and Brian Lavoie, 'The Open Archival Information System (OAIS) Reference Model: Introductory Guide (2nd Edition)', Second (Digital Preservation Coalition, 1 October 2014), <https://doi.org/10.7207/twr14-02>.

<sup>65</sup> See <https://www.nedcc.org/free-resources/preservation-leaflets/1.-planning-and-prioritizing/1.1-what-is-preservation-planning>. Also <https://unesdoc.unesco.org/ark:/48223/pf0000083536>.

- Confronting issues in the management of sensitive (often contested) content, working with the lingering traumas of the liberation struggle, and the emotions which the archives continue to evoke.
- Managing 'unverified' records which could cause public controversy.
- Placing archival materials in their proper historical contexts. Where do our archival (and historical) responsibilities begin and end?
- Promoting ethical research practice by researchers, and protecting records from abuse and unethical use
- Establishing acquisition, access and usage protocols which balance rights of access with rights to privacy.

These matters orient us towards honouring traumas and dilemmas from the past and their hauntings in the present. From South Africa's foundational moment in the 1990s, they are the stuff of archival professional practice and its activism in the region. It is well worth regularly revisiting these to anticipate the needs of future users without breaking bonds with the past in the process. It would be important to anticipate them in a Long-Term Preservation Plan and a Collection Development Policy based on it.

## Designated Community

Yet, while holding these perspectives on the past in view, how might we assemble something resembling a future perspective from which to make long-term decisions? A revitalising logic sits at the core of the OAI model - the system privileges the perspective of its future Designated Community. We submit that it places the perpetual needs of UWC students, staff, teachers, researchers, and alumni, as well as future South African and global publics - at the centre of the archive's commitment. Our main ethical motive then, becomes the maintenance of the archive in an unbroken chain from the beginning into the future so that our core future audiences can use it without requiring 'expert intervention'.<sup>66</sup>

Notably, the archive must meet this minimal standard on a perpetual basis.<sup>67</sup> In order to exercise such care, the archive follows documented policies and procedures which ensure that the information is preserved against all reasonable contingencies, including the demise of the Archive, ensuring that it is never deleted unless allowed as part of an approved strategy. There should be no ad-hoc deletions. It needs an explicit ethical framework, integrated within the university's policy making system, and linked to digital governance, a concept that is now unavoidable. In fact, one might think of the OAI as a digital governance system.

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<sup>66</sup> In fact, it may be worth considering including the region in our definition of the public as Designated Community, especially to bring attention to the relationships of solidarity, conflict, and interdependence that these movements had with each other - that is, movements such as the ANC, COSATU, UDF, AZAPO, SWAPO, ZAPU, PAC, ZANU, UNITA, and so on.

<sup>67</sup> According to OCLC and Lavoie, an OAI archive exists to serve the future needs of its 'Designated Community'. The Designated Community should be able to understand the information it holds without needing special resources such as the assistance of the experts who produced the information.

## Elements of ethical infrastructure

What if we posed the questions in the previous heading anew, in terms of the university's audience of the future? Growing this infrastructure may test our capacities in new directions. Notwithstanding the fact that it is already being implemented at the Mayibuye Archive, the reference model seems adaptable for UWC's purposes, to provide the framework principles, philosophies and systems with which UWC might structure this archival future.

Margaret Hedstrom<sup>68</sup> defined 'infrastructure' as social agreements that allow disparate components of a system to work together on a grand scale.<sup>69</sup> Notably, she was emphasising that the human side of digital infrastructure is in constant risk of being undervalued in the tech arms races. We consider some of the nodes around which such infrastructure agreements would adhere. Fundamentally, the ethos of the archive builds on the university's legacy as a liberation archive institution opening on to new audiences, activisms and imaginaries. Under each heading we outline the UWC field and the ways in which the reference model implementation can hold or support it.

### Governance and Audit

We recommend a research-driven governance system in which the humanities research archive holds collections of recognised strategic importance for the university. Its governance must be led and conducted through research and archival excellence in the humanities, with technical competence in all functional areas of a modern archive including submissions, ingest and dissemination as well as management and administration. Such a governance system should uphold and champion its core principles encoded in documented policies and plans, including community, integrity, transparency and independence. The university will need to draw on internal and external experts, peers who can help to maintain the archive on its long-term path and keep its operations transparent to the highest ethical standards, honouring the considerable commitments of such an undertaking and earning its status as a trusted repository on the basis of cyclical reviews. Finally, such governance needs to be supported by a sufficient corps of skilled archive staff and a healthy practice of lifelong learning in the archival disciplines.

The OAI reference model enables UWC to set its own archival standards and to document its progress in maintaining those standards and upgrading them. The capacity to conduct audits of course must be built over time. It means the archive must support the ongoing training for staff and volunteers. Trustworthiness in archives ultimately comes down to the quality of internal and external relationships documented and maintained over time. As one author puts it: "Trust in archives, in the end, may be less a matter of standards compliance and more a matter of ... *covenant*—a network of group-based but individually felt and mutually reinforced trust relationships."<sup>70</sup> In growing its audit readiness, the archive will draw on these internal and external relationships to define its standards and to build trust incrementally.

This also assumes that there is documented policy direction from a governing body mandated by the university. The challenge in addressing trust is to 'reopen for business' with a new clarity and purpose that is both future-oriented and enriching of university and public life. Hence audits and

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<sup>68</sup> Digital Archive Infrastructures / The Complexities, Vulnerabilities and Opportunities of Digital Preservation and Access, Keynote presentation by Margaret Hedstrom, 21 August 2019 (Workshop on 'Building Trustworthy Processes for Digital Archives,' Centre for Humanities Research, 21-22 August 2019).

<sup>69</sup> Workshop on 'Building Trustworthy Processes for Digital Archives,' Centre for Humanities Research, 21-22 August 2019.

<sup>70</sup> Greg Bak, 'Trusted by Whom? TDRs, Standards Culture and the Nature of Trust', *Archival Science* 16, no. 4 (1 December 2016): 397, <https://doi.org/10.1007/s10502-015-9257-1>.

transparency are a key feature.<sup>71</sup> We list these aspects of governance first because it is precisely what will help build infrastructure and resilience, and work in tandem with the rest.

Governance hits the ground in the digital domain for many archives now, and as digitisation capacities grow, all workflows will likely become digital as well. Digital and networked systems are therefore part of ethical infrastructure. The recommendations here, therefore, also assume that the institution is able to employ the appropriately skilled professionals with digital preservation skillsets and the capacity to install, modify and maintain an Archivematica installation, its accompanying Linux and microservices environment for successful implementation. Given the scarcity of skills in the commercial IT sector, this is likely to present an HR challenge for the university. Such staff should also be able to assist in training archivists and researchers to use the system for its several functions inside the OAIS system. If properly maintained, it would enable the institution to generate transparent and automated audit data based on its information model, user transactions and reports.

### Build trust with stakeholders

The archive of liberation or activism is trusted also among its archival peers. We might also emphasise relations with the best stakeholders as interdependent. The task is then to enhance interdependence and cooperation inside the system and with other systems (archives and museums) striving to be interoperable.

Moreover, a key question posed at a workshop discussion on ethics was: ‘Will they fight for it before it's gone, and will they miss the archive when it's gone?’ The fictional ‘they’ here is the university community and the public at large - local, regional, global. In addition to its Designated Community, the archive has several internal and external stakeholders - such as local communities, partner institutions, its scholarly networks, prospective students, donors and so on.

## **Legal and statutory responsibilities**

### Copyright and other rights

Taking seriously all matters of ownership and provenance is of central importance for a trustworthy archive. The reference model asks the institution to employ appropriately skilled and experienced staff to maintain transparent standards of performance in this area. The South African policy environment for these questions have been uncertain and contested since well before the recent Covid19 pandemic struck in 2020 - and it has likely slowed its movement considerably.

Notwithstanding these uncertainties an archive system needs dedicated personnel, preferably with knowledge of the copyright legislation and expertise to provide advice on issues of copyright, to assist with the application of copyright law and to attend to copyright clearances. Those members of staff would need to trace rights holders, send requests for permission, follow up requests, negotiate better terms, when necessary, and attend to permission renewals, embargoes and take-downs, as required by rights holders. They would also need to process invoices for payment of copyright fees and perform general administrative duties.<sup>72</sup> The archive profession strives to improve its

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<sup>71</sup> Space Communications and Navigation Office CCSDS Secretariat, Audit and Certification of Trustworthy Digital Repositories: Recommended Practice, Issue 1 (CCSDS Secretariat, Space Communications and Navigation Office L70, Space Operations Mission Directorate, 2011), <https://digital.library.unt.edu/ark:/67531/metadc463525/>.

<sup>72</sup> Liebetrau and National Research Foundation (South Africa), ‘Managing Digital Collections’.

understanding of and respect for intellectual property, more thoroughly documented collections, and content creators with an increased interest in working with institutions to steward their own documentary histories.<sup>73</sup>

### Protection of Personal Information POPI

The same goes for privacy concerns. The POPI, a legislative frame that considers the rights of data subjects potentially has a huge impact on archives. While the university is already engaged with POPI, the question here is about the specific implications for the archive. Laws protecting personal information are potentially risky for historical archives given the personal nature of information housed there. The South African archive sector has raised these concerns.<sup>74</sup>

While opinions vary, it seems most important for the archive to keep a record of all reasonable attempts to comply. We propose the concern here is more with the capacity to adapt and to build the needed know-how among staff and decision-makers to do so. It is our belief that the observance of basic care within a coherent governance and management ethos may mitigate against any risks posed by POPI. The successful adaptation to POPI and other laws is of course the business of the university as a whole. A concern here is more with the capacity to adapt and to build the needed know-how among staff and decision-makers to do so. It is our belief that the observance of basic care within a coherent governance and management ethos may mitigate against any risks posed by POPI.<sup>75</sup>

### **Metadata, aesthetics and human/ machine relations (technology)**

*'... what happens when bioinformation becomes algorithmic in the shift to post-archival platforming of bioinformational infrastructures. The post-archival turn in genomics denotes a move from genomic and biological databases to logistics, that is, to data sequencing and cross-linking?'*

E.J. Gonzalez-Polledo and Silvia Posocco, 'Archives, Promises, Values: Forensic Infrastructures in Times of Austerity'<sup>76</sup>

Questions of the human, aesthetics and technology have been central themes in research dialogues at the CHR. This is both a research and a curatorial question for the new archive and its stakeholders. Technology increasingly seems an overwhelming force now imbued with emergent curatorial powers in the form of the new web, machine learning, data manipulation and information system ontologies. In other words, human archivists and curators are now delegating archival labours and decisions as such to increasingly intelligent and complex AI software and data systems.

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<sup>73</sup> Glenn Dingwall, 'Trusting Archivists: The Role of Archival Ethics Codes in Establishing Public Faith', *The American Archivist*, 67.1 (2004), 11–30 <<https://doi.org/10.17723/aarc.67.1.mw0914r2p52xx2t4>>.

<sup>74</sup> 'SAHA - South African History Archive - POPI to Impact Archives', accessed 14 December 2020, [https://www.saha.org.za/news/2013/November/the\\_negative\\_impact\\_of\\_popia\\_on\\_archives.htm](https://www.saha.org.za/news/2013/November/the_negative_impact_of_popia_on_archives.htm).

<sup>75</sup> See also John Giles, 'Only Do What Is Reasonably Practicable to Comply with POPI', Michalsons (blog), 3 March 2019, <https://www.michalsons.com/blog/reasonably-practicable-to-comply-with-popi/13296>.

<sup>76</sup> E.J. Gonzalez-Polledo and Silvia Posocco, 'Archives, Promises, Values: Forensic Infrastructures in Times of Austerity', *Critique of Anthropology*, 7 December 2020, 0308275X20974079, <https://doi.org/10.1177/0308275X20974079>.

Archives need to radically update concepts as technologies change. What does it mean to archive born digital material such as websites, Instagram accounts, email, WhatsApp, and so on?

Questions of technology have proliferated across all spheres, and in archives they pose unique new dilemmas and predicaments that require humanistic enquiry. These questions intersect at the archival, and what some scientific disciplines refer to as a 'post-archival' moment in which new infrastructures enable new moral and ethical dilemmas about the use of machine learning and AI in preservation. There are critical perspectives that consider technology not just a tool, although it is that too. Technical objects interact with humans in untested ways. Gilbert Simondon for example sought a unity of the technical and the sacred. This has been a focus of critical debate for the CHR around aesthetics and its relations with the technical becoming. This philosophical approach then also finds a point of praxis with the development of an archive, and the opportunity to sharpen and deepen engagement with the archive also as method and praxis.

Realising this however makes the practice of archive and its poetic realisation more challenging and changing. Perhaps a key test relates to its maxim, 'preservation first'. What is preserved? What will it mean in a born digital context? What new costs will it extract? The CHR itself - and any academic entity for that matter - has generated its own research output and collections. It collectively becomes a curatorial provider, a Producer (in the OAIS), for the archive. Individual scholars are potential Producers. The archive is of great interest to scholars of politics and liberation in Southern Africa. The university has a sizeable art collection. With a puppetry programme also incubating, what would it mean to archive research in this area?

#### IV. CURATING PUBLIC ACCESS

*'I was also busy at UWC, together with ex-IDAF colleagues Gordon Metz and Norman Kaplan ... emptying the massive shipping containers which we had slaved to pack in London ... and move into the building allocated to us by the university for the new history and culture project .... On the basis that the vast majority of South Africans would not themselves be able to use the collections at the Centre, diverse sustainable publication and production activities were developed, drawing upon the collections with a view to reaching out to all South Africans.'*<sup>77</sup>

- Barry Feinberg, Head of Information Division, IDAF

*'Know what you have. Offer complexity and human nuance in public accounts of traumatic pasts. Curate poetically.'*

*'Restitution must be accompanied by epistemic work'*

- Insights from several workshops on digital archives, ethics and ownership, 2019

*'Hacking the systems that construct and control access to our cultural collections is at the core of humanities practice in the early 21st century. As online collections continue to expand, we need to carve out spaces that resist the weight of scale and foster alternative perspectives. As interfaces grow in sophistication and complexity, we need to stage playful and pointed interventions that reveal their limits and empower critique. We do not all have to be coders, but we do have to take code seriously. We have to take what we are given by collection databases and change it.'*

Hanna Lewi et al, eds, *The Routledge International Handbook of New Digital Practices in Galleries, Libraries, Archives, Museums and Heritage Sites*.<sup>78</sup>

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<sup>77</sup> Barry Feinberg, *Time to Tell: An Activist's Story* (Newtown, South Africa: STE Publishers, 2009), 133–34.

<sup>78</sup> Hannah Lewi et al., eds., *The Routledge International Handbook of New Digital Practices in Galleries, Libraries, Archives, Museums and Heritage Sites* (Oxford; New York: Routledge, 2020), 128.

In this reset of UWC's web of archives, we see public access as part of the third functional area of an OAI archive, integral to its public profile and sustainability, positioning UWC as a node of critical public reflection and digital citizenship. We offer three recommendations to guide the provision of public access with this approach. First, we suggest a challenge is to build the discipline of providing for the future needs of public access. As they did with the Fees Must Fall Moment, our Designated Community may in future seek to reset orthodoxies about the past, even as older audiences have powerful concerns about the ethics of accessing traumatic pasts, and even exploring the full range of human experience beyond trauma. Secondly, and flowing from this, we follow the imperative to curate 'poetically', to create humane, and nuanced sensibilities as we engage in public dialogues driven by the university's teaching, research, and broader profile. Finally, the work of curating such access is contingent on addressing questions of metadata curation for the humanities and the faculties more broadly. Such a preservation focus should be integrated with UWC's overall rollout of digital infrastructure over the current Institutional Planning process.

With a dedicated archive and exhibition building now being prepared on campus, the possibilities to host local and international residencies, lectures, publications, exhibitions, and performances are among the inspiring prospects contained in this White Paper. Indeed, curating public access is a function of the third functional area of an OAI archive, and is integral to its sustainability. It can also strengthen UWC in the public imagination as a node of critical public reflection. In this section we offer three central considerations to guide the provision of public access.

We mentioned in the Preamble that the very emergence of postapartheid South Africa coincided with an archival impulse that was foundational for many of our collections (Mayibuye, Nelson Mandela, Fort Hare), and which was associated with the uncovering and custodianship of 'truth'. The current UWC archives holdings were seeded when the International Defence and Aid Fund (IDAF) sought a home for its archive. UWC was eventually deemed the appropriate holder of the collections, although other possible sites had been considered at the time. This became a core of what we now call the Mayibuye Collections, widely recognised as one of the major repositories of liberation history materials and housing unique content in heterogeneous formats that cover roughly a fifty-year period.

In an earlier section, we established that the rationale for the OAI system arises from a need to service a 'Designated Community' - assumed to be UWC students, staff, teachers and researchers, and alumni - in perpetuity. The archive makes the preserved information available to the user community and enables dissemination of authenticated copies of the preserved information in its original form, or in a form traceable to the original.

In addition to its designated community, there are several 'publics' for the archive:

1. off-site digital users (researchers, curators, filmmakers)
2. on-site researchers (in both analogue and digital collections)
3. on-site audiences at curated exhibitions and events
4. donors of existing and new collections

There are obvious overlaps with aspects of Teaching and Research within the university community and its alumni. UWC and its proposed archive have the potential to grow their public base and profile locally, nationally and internationally, which will in turn enhance the sustainability of the entire archive project. This section has three subsections.

## Orientation towards future audiences

We take our cue from the founding provision - its Designated Community in the future. The OAI reference model defines a Designated Community. But it also guides the choices that may come, as if to say: "In times of doubt, reach beyond the present, prioritise the archive as intelligible and accessible into the future; that is, as trustworthy." We might say this presents an ontology of the OAI as recommended practice.<sup>79</sup> In order to adopt this as an aspiration in the new archive, what would we need to enact? That seems to be the disciplined alignment the system recommends in the development of an archival project.

Yet staying mission-focussed is not easy. There will also be short-term pressures that pull against these lofty aspirations. A major operational challenge with the archives will likely be to balance mission-critical tasks with other pressures to generate revenues for example. Archive managements are typically challenged to keep the core mandate energised and moving with available resources. Much energy will go into training, operational setups, and to populating the catalogues and finding aids with which the academic community will access materials in the collections, and on prioritising this workflow. An opportunity exists in the rollout of E-research infrastructure, and the archive should constitute a set of links in that network.

## Curating 'poetically'

We follow the imperative to curate 'poetically', to seek humane truths as we engage in public dialogues driven by the university's teaching, research, and broader profile. The work of curating such access is contingent on addressing questions of metadata in digital collections. That is, in digital curation, one might mobilise metadata and its problems as a series of questions to pose in the humanities and across the faculties. We turn to the arts and the sciences to help do this work of 'poetic curation', to tap latent capacity for sounding, imagining, feeling, for playing with questions of text and form in this kind of epistemological work, for hacking epistemic foundations. Moreover, the potential for curating new dialogues and collaborations across the faculties are also exciting.

The IDAF collection presented a major metadata problem, intrinsic to the way the archive was made in its first life as a clandestine organisation. This has been and will need to be addressed in an ongoing way through dedicated research and search efforts so that where possible, all reasonable effort to find the rights holders are documented, hopefully with successful outcomes for the archive so that it can execute its responsibilities while making the material accessible for the public good and for ethical sustainability.

In conventional terms, the problem of missing information is a massive one for an archive institution given the cost of preserving the materials without the benefit of being able to put it to work for serving our Designated Communities, and/ or for the generation of revenue for sustainability. It demands the smart allocation of resources to build that metadata for future use.

CAP archive project also brought metadata problems that were documented in a critical exchange between Heidi Grunebaum and Mario Pissarra. Yet, the problem contains its own opportunities. The challenge is to produce the missing metadata Pissarra rightly argues is needed via research, but also to work creatively with its absence - notwithstanding Pissarra's critique of the original effort. The

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<sup>79</sup> Ontologies are categories in a domain showing their properties and relations.

archival fragment can sometimes be a source of power as many have attested. But that original work was always a stage in a process of knowledge building, the work of the archive.<sup>80</sup>

For the new archive a need arises to ingest the CAP collection, to describe a Submission Information Pack for it, with the rich curatorial document we now have in the publication *Uncontained*, and with all updated rights to the material documented and accounted for. The archivists will then develop an Archive Information Pack (AIP), to ensure that the works are kept to documented preservation standards, and that digital preservation masters are created, and finally to enable online workflows enabling permissions and restrictions to apply for user access.

### Examples

The humanities may have affinities for ways in which humans exercise citizenship in relation to technical mediation, digital 'intersectionalities', migrations and citizenships may be implicated in such discussions and activisms. Moreover, we envision a UWC archive community that tinkers, crafts, and conjures with the technical, asking new questions of the mediated 'cultural laws' that now dominate our public lives - databases, websites, other archives, APIs, algorithms and so on - and to 'trouble' their capacity to shape more humane public notions of truth.

Future-oriented curating can exist comfortably as digital. If a South African consortium were to adopt a shared approach, costs, risks and resources can be shared across them, and they could have interoperability increasing value for users. Such a consortium would seed an open-source software community inside and also beyond the computer science departments sympathetic to issues of digital preservation, cultural heritage or critical debate. All of this is enabled by open-source software which the university and the archive partners are encouraged to hack to their own preferences by forking on GitHub. In other words, it encourages the institution to invest in an open software community and to collaborate with other institutions and archives in consortia for scale and interoperability. This is a site of future digital curation, a mode of curating that has become ubiquitous online - the use of APIs to share or interoperate with institutionally held datasets. The capacity to engage intelligently in these practices has already become a matter of global inequality between the mostly European and high broadband Open GLAM sector and the low bandwidth global south.<sup>81</sup>

These all depend on skills that are serviceable for computer science or even marketing students, but they also offer students from across the faculties access to critical learning and debates in the global humanities that have animated the Rhodes Must Fall and subsequent movements. For a young, disadvantaged hopeful in Southern Africa, or around the world, it opens up a potentially compelling vista on humanities education at UWC.

A balance of mission elements will be a prerequisite for this work. What can be accessed on an open basis? What other rights arrangements restrict this? This is all clearly documented in a Collection Development Policy.

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<sup>80</sup> Yet the archival fragment is an element of form valorised above the full artifact in some senses. See Barbara Kirschenblatt-Gimblett, *Destination Culture: Tourism, Museums and Heritage* (Berkeley; Los Angeles; London: University of California, 1998).

<sup>81</sup> 'GLAM (Industry)', Wikipedia, 2020 <[https://en.wikipedia.org/w/index.php?title=GLAM\\_\(industry\)&oldid=997011984](https://en.wikipedia.org/w/index.php?title=GLAM_(industry)&oldid=997011984)> [accessed 20 January 2021].

### Digital curation

But the metadata problem also offers opportunities. What assistance, for instance, might web scraping and machine learning models offer in the search for owners of photographic images and film footage?

- New activisms come into focus in which social media have a critical part. Projects such as Documenting the Now and Save are examples of what activists elsewhere have activated in the digital space.<sup>82</sup>
- To accompany an enhanced offering of in-person guided tours of UWC campus, what might a GIS mapping and crowdsourcing project do to place |and its heritage values on digital maps, and to avail research data about heritage values on and around the UWC campus and neighbouring areas?
- Students may be trained to research, innovate ethical and smart metadata development initiatives using pedagogies, activisms, and technologies such as Open Source application programming interfaces (API's), machine learning and others.<sup>83</sup>
- Students from across the faculties may obtain a grounding in critical thought and contemporary aesthetics and ethics for new technical and information horizons. This ethical horizon is now critical given the unprecedented destabilisation of our notions of the human and the machine.

The list goes on. What role might these kinds of problems have in undergraduate and postgraduate teaching at UWC, including theory and practice of curated public display? Social media such as Facebook, Twitter and Instagram are suited to smaller microbiographies of s in the university's liberation records and can be curated on an ongoing basis. A US based archive project for activist social media content had the following recommendations about these activities:

1. Archivists should engage and work with the communities they wish to document
2. Documentation efforts must go beyond what can be collected without permission from the web and social media
3. Archivists should follow social media platforms' terms of service where they are congruent with the values of the communities they are attempting to document
4. When possible, archivists should apply traditional archival practices such as appraisal, collection development, and donor relations to social media and web materials.<sup>84</sup>

Clarity about access rights would enable other archives and search engines to aggregate material as part of global Open GLAM projects. Moreover, significant digital holdings will enable the capacity to securely share the risks of digital preservation across a consortium of UWC partner institutions such as Wits University, Robben Island and so on.

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<sup>82</sup> The Save App strives to safeguard digital evidence of human rights abuses around the world. See <https://open-archive.org/save/> and Ed Summers, 'Documenting the Now Ethics White Paper', Medium, 31 December 2020, <https://news.docnow.io/documenting-the-now-ethics-white-paper-43477929ea3e>.

<sup>83</sup> 'Metadata Games – Play. Tag. Connect.' <<https://metadatagames.org/>> [accessed 17 February 2021]. The site offers a sampling of what might be possible when curated digital content is available for online use of heritage and education content.

<sup>84</sup> Bergis Jules, Ed Summers, Vernon C. Mitchell, 'Documenting the Now. Ethical Considerations for Archiving Social Media Content Generated by Contemporary Social Movements: Challenges, Opportunities, Recommendations,' White Paper, University of California, April 2018.

## V. TEACHING

### The student and the archive

The French historian Arlette Farge proposes that ‘The archive lays things bare, and in a few crowded lines you can find not only the inaccessible but also the living’. The excitement of this encounter with these ‘scraps of lives’ directly from the past cannot be stated too strongly. ‘Their clarity and credibility are blinding’.<sup>85</sup> For students the experience is often transformative. At undergraduate level, access to more discoverable documents and images of historical events, subjects, writers, and artists would greatly enhance the teaching curriculum. This is most obvious in departments such as History, English, Social Anthropology, Geography, Women’s and Gender Studies and language studies in the Faculty of Arts & Humanities, and Political Studies in the Faculty of Economic and Management Sciences, but it could be extended beyond these disciplines and faculties.

Academic staff and the Faculty Officers and Deputy Deans responsible for Teaching and Learning already have considerable experience in turning archival material into digitally accessible coursework readings and exercises, especially through the expanding iKamva site. The constraints of 2020 threw more emphasis towards developing online learning platforms, and the capacity of photographic, film and video as well as sound archives to enliven teaching platforms is increasingly acknowledged. 2020 has however also shown the present incapacity for digital delivery of materials from the archives currently housed at UWC, namely the Mayibuye Collections, despite considerable material existing in various digital formats. The digital infrastructure and required archival workflow components simply do not yet exist in a form that enables this. We are therefore at a juncture of huge potential and current inaccessibility.

The argument for curriculum to relate to the archive is not simply to assist with illustration and exposition, but to deploy such materials to develop critical reading and viewing skills in a young generation that already has far more visual, sonic, and digital literacy than earlier cohorts. Thus, the archive offers not only to complement the curriculum, but to drive new cognitive breakthroughs.

Broader capacities to engage in an archive-linked curriculum also provide a challenge to students to generate their own still and moving images, sound and installations for their coursework and possible subsequent archiving.<sup>86</sup> The latter would put our principle of ‘archive as method’ to good work. A radical model of disseminating archival holdings and crystallising new archival returns is ILAM’s project to engage the curiosity of the young by distributing songs on MP3 format via cellphone, and challenging creative artists to work with them, compose new tracks, and then archive these re-interpretations for future engagement.

Applications that promote the storage and redeployment of material (for example Save by OpenArchive) by students on available devices would help to develop such student projects. Preliminary training towards student personal archiving is already underway in certain undergraduate modules in History, and the postgraduate modules in Visual History and Documentary Film, but these remain isolated and somewhat disconnected initiatives to date.

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<sup>85</sup> Arlette Farge, *The Allure of the Archive* (2015), 8.

<sup>86</sup> An excellent demonstration of such archival engagement is Phokeng Setai’s digital platform called ‘About00Time’ that curates images from a banned CAP exhibition of 1986 now housed at UWC into the social media sphere to bridge past and present and generate critical discussion (see <https://www.about00time.com/contact>, also on Instagram at <https://www.instagram.com/about00time/>).

## Art and teaching



Fig 12. Tyrone Appolis mural work 1994, (Image courtesy of Iona Gilbert)?

An even more exciting set of curricular and creative possibilities are offered by the university's art collections and other artworks that will be housed in the archive. UWC has links with various city and national art institutions through diverse scholarly and teaching work but will soon be entering into a direct partnership with the Zeitz Museum of Contemporary African Art (MOCAA) to provide rigorous curatorial training for specially recruited students from across the African continent, and fully accessible to UWC students. This programme is scheduled to commence in 2022 through an Honours degree in History with specialisation in Curatorial Studies, co-ordinated through the History Department in partnership with the CHR.

Emile Maurice noted in his status report on UWC's Art Collections that the University of Cape Town, Wits, and other South African institutions use their art collections extensively in teaching. While UWC has no Department of Fine Art which would be the normal conduit for such a curriculum, our interdisciplinary platforms, and programmes, and the forthcoming Zeitz MOCAA curatorial postgraduate training partnership, must orient increased attention to UWC's artworks once they are properly housed and more accessible to researchers, students, and the broader public.

Collections such as the Community Arts Project (CAP) represent an historic view that the arts are 'both critical and indispensable for producing the worlds of the oppressed, beyond the forces of power that sought to contain their creativity.'<sup>87</sup> CAP and its art training approach through apprenticeship was not only claiming tuition in creative arts which was otherwise unavailable at the time, it was also claiming the right to express the artists' 'own emergent identities, fears, concerns, experiences and dreams in an otherwise strictured world.' The existence of the CAP collection is testament to the massive efforts to draw such creativity and history from the ghetto into visibility in the 1980s, only to be at risk of these languishing in an archival ghetto after the demise of apartheid.

<sup>87</sup> Lucy Alexander, 'On dying and being reborn: reflections on the absence of access to creative arts training in the new South Africa' in Heidi Grunebaum and Emile Maurice (eds), *Uncontained. Opening the Community Arts Project Archive* (Cape Town: Centre for Humanities Research, 2012), 40.

The opportunity now exists to de-ghettoise these tangible fragments of black artistic production in a country that has stubbornly continued to produce predominantly white artists.

We are also in a context of ongoing difficulty in gaining access to creative arts training in postapartheid South Africa through new economic and financial strictures, as attested by student protests in 2015-16. In terms of arts education therefore, the archive and its workability for curriculum development, teaching and curatorial training means that these art collections will be greatly revitalised by being put into motion. This in turn ties in with the public education and research dimensions of the archive because they are all closely interrelated and creatively oriented towards restitution.

## **Science and the archive**

There is no disciplinary limit on pedagogical and curricular engagement with a university archive such as UWC proposes. There are excellent reasons to attract the science disciplines on campus into archival projects. Most obviously, the digital archive could make good use of the skills of computer science students. Computer science projects at a higher degree level (MA and PhD) might embark on research on AI in digital heritage with widespread benefits resulting. The archive and its programmes need to relate to the cluster of scholars and projects in Astronomy at UWC. These scholars and their networks already engage in digital curating for public education in areas such as indigenous cosmologies and there is excellent potential for programme synergies.

## VI. RESEARCH

### Growing research



*Fig 13. Henry de Leeuw, 'Self-Portrait,' undated. CAP collection, UWC.*

Acts of research in the archive are fundamental to the quest for a deeper understanding of the past (however recent or remote) and its traces, all of which speaks to present and futures. Without the dynamic expansiveness of archival research, academics, curators and creative practitioners tend to keep circling round the same circuit of existing information or historiography that grows ever more narrow, restrictive and intellectually parochial. The archive blows these circuits open and generates new inquiry, also prompting an interrogation of existing categories and classifications of knowledge.

For a university archive, this is not only healthy in terms of academic curiosity for faculty and students, it also institutes the potential for conceptual and methodological breakthroughs that are the cornerstone of original scholarship. Such breakthroughs and creative outputs draw scholarly and public attention, attracting funding, collaborative partnerships and often the best quality of postgraduate students to the university. Their engagement with archives and wider debates in the humanities in turn deepen the relevance and sustainability of the archive.

We note that Mayibuye Collections has a long record of drawing international scholars to research its holdings, most apparent in relation to Historical Papers, which has resulted in numerous dissertations, articles and other publications. Its film and video collections have likewise drawn many researchers and filmmakers into its archive. More recently, with the rise of interdisciplinary Visual Studies and the growth of research in photography, the photograph collection has come under increasing scrutiny and this scholarly attention is likely to grow. Integral to this is the longstanding research and postgraduate module project on Visual History at UWC and since 2016, the DST/NRF

SARChI Chair in Visual History & Theory based at the CHR which promotes ongoing work with photographs and draws on the Mayibuye Collections amongst other archives. The audio and sound collections of Mayibuye have likewise attracted the attention of researchers and artists, among them the composer Neo Muyanga whose exploration of struggle songs and their origins and connections highlights the creative potential of the archive.

Our Interim Report already outlined some of the constraints facing the Mayibuye Collections and other UWC archives in terms of preservation and access. But we must reiterate the need to overcome a situation where a great deal of digitisation has been accomplished, but with little that is currently discoverable. This impacts very directly and detrimentally on research engagement, that will remain confined to a comparative trickle of well-informed visitors able to consult the archives in person, as opposed to a flood of online users easily able to access records. The pandemic situation in 2020 in which researchers depended heavily on virtual access represents a huge opportunity lost. The way forward is to address the question of digital infrastructure in the archive in close correspondence with the university's proposed institutional advances in the matter of digital capacity (see Section IV).

Potential expansion of research use also stands on the most appropriate resolution of rights questions. In particular, the photograph and film and video collections need commercial agreements so that access is promoted on a solid footing. This is especially important in view of the accession of the Rashid Lombard collection. If different fee structures are implemented for different collections then the ploughing back of funds into the archive for certain purposes needs to be carefully considered and become part of governance and administration.

### Art and research

Probably the most neglected area of the university's legacy holdings, the art collections housed at the university need to be pulled into a series of wider research activities. The issue needs urgent attention and the UWC Art Committee should be reconstituted as a priority. The art collections include Albie Sachs's collection of Mozambican artworks, the CAP/AMAC collection, as well as UWC's own art collection. Well-known artists in the latter include Cecil Skotnes, Pippa Skotnes, Peter Clark, Penny Siopis, Andrew Verster, William Kentridge, Ezrom Legae, Tito Zungu, Judith Mason, Willie Bester, Tyrone Appollis, Walter Battiss, Karel Nel, Lucky Sibiyi and Sue Williamson. Several relatively unknown artists are also part of the collections, especially the CAP collection centred on community arts training.

Following a number of interim measures, the conservation needs of the collections have been secured, and further documentation should be sourced that relates to the works in question. However, there is no doubt that ground-breaking art historical research could be undertaken here and conditions need to be created that favour this development. An important feature to be emphasised is the unique relationship between collections represented by the CAP holdings and the university, in that both were historically outside the mainstream. Most of the artists who produced these works did not have access to the resources of the South African fine art establishment and art education more generally. The minority who did have such privileged access worked strongly to support those who did not, through organisations like CAP. As a poorly resourced Historically Black University (HBU), UWC in its turn had no Department of Fine Art. However, its record of apartheid critique and strands of radical education made it in a sense a sympathetic space for black arts and artists. UWC needs to take up its responsibility to make something more of these collections and benefit from the critical intellectual benefits of doing so.

We mention this because the kind of art practices represented in the UWC collections ‘speak to the politics of the human condition.’<sup>88</sup> Much of the art was produced under conditions of precarity where improvisation and risk made it possible to overcome a number of constraints, demonstrating how ‘art exceeds the situation.’ Moreover, as Fleetwood argues for art produced in US prisons, ‘established art institutions do not reflect the vast amount of art practices in any given era’. To consider art by marginalised people as existing outside of art discourses or institutions is to ‘rehearse the violent erasures’ of apartheid. Such art exists in relation to ‘economies, power structures governing resources and access, and discourses that legitimate certain works as art and others as craft, material object, historical artifact, or trash.’<sup>89</sup> The designation of much of the CAP collection as political art, township art, community art means that it has been adversely affected by the strong split between politics and aesthetics in South Africa, where these categories have been downplayed and denigrated after apartheid with the rise of new galleries and reintegration of South African art into the international art market. This has also come with the re-valorisation of the individual artist of talent and the devaluing of more collective artistic initiatives, what the artist and designer the late Jon Berndt called the ‘non-egoic’ labour of community art practice.

There are precedents for activating such art collections and shifting the terms of these debates. An important initiative was the exhibition and publication project *Uncontained* which brought artworks from the Community Arts Project (CAP) into public awareness in 2012. As the catalogue authors stated, it re-activated ‘the archive from its neglect by mainstream cultural history’.<sup>90</sup> This exemplary initiative proceeded through a series of small incremental steps beginning with the making of an inventory of the entire CAP collection, with each artwork photographed. The curators prepared an exhibition focused on the printmaking aspects in the collection, at the same time as various authors were approached to comment on groups of prints for a book that was launched with the exhibition at Bellville Arts Centre. The resounding success of the Bellville exhibition then resulted in an invitation to exhibit at the South African National Gallery. This tangible evidence of UWC’s commitment to engaging with its art collections resulted in further donations of material relating to CAP, notably the Jon Berndt poster collection. This in turn has resulted in a further publication entitled *Design for Change* (forthcoming).

A few further points need emphasis to explain the potency and pertinence of this CAP exhibition, which exemplifies the links between public aesthetics, the university and its archives. As stated, the CAP archive itself invokes an era in which artists responded to a crisis of the human condition resulting from apartheid. The project benefited in this case from UWC’s commitment to its public role in highlighting the relationship between the visual arts, aesthetics, politics and society. Plus, the RIM curator and de facto custodian of these collections, Hamilton Baduza, was himself a member of CAP and thus there was a direct connection with its institutional history through the custodian located at UWC. These points of convergence are quite unique and highlight both the place of art in South African society and the archive’s capacity to unsettle existing hierarchies. It also reminds us of the advantage we have at UWC in that we are all already connected—through the original foundational moment of the Mayibuye Collections.

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<sup>88</sup> Nicole R. Fleetwood, *Marking Time. Art in the Age of Mass Incarceration* (Cambridge MA: Harvard University Press, 2020).

<sup>89</sup> Fleetwood, *Marking Time*.

<sup>90</sup> Heidi Grunebaum and Emile Maurice (eds), *Uncontained. Opening the Community Arts Project archive* (Cape Town: Centre for Humanities Research, 2012), 14.

### Digital and data-driven research

Scientific data curation tends to be shaped by the needs of scientists working in collaborative laboratories, data that is primarily quantitative. By contrast, data-driven Humanities research is a relatively new idea. We have the opportunity to embark on data-driven methods for answering humanistic research questions, demonstrating and facilitating sound practices in data collection and management and identifying appropriate places to deposit and access data from completed projects. The January 2021 Capitol Hill episode that is generating new forms of activist archiving points to the fundamental importance of trust and authenticity once again when it comes to digital archives and digital forensics.

‘Tiny data’ is at the core of traditional and contemporary humanistic inquiry, reflecting critical engagements with texts, images, sound, and performance. Tiny data challenges the discourse of scale as a defining feature of research. As small data, it is variable. It also implies the incomplete and the insufficient, a provocation to further data collection, data curation and data wrangling (fitting into programmes and needs).

Another issue of relevance here is data visualisation: to facilitate the collection of high-quality digital data during an archival visit, how does archival preparedness help to identify the specific data points necessary to answer specific research questions?

It is recommended that archivists and librarians step up to the challenges that have sat with us for a long time and that will also be coming our way soon. Oral histories of ex-political prisoners and of exiles for example remain largely out of reach for all but a few visiting scholars, and more public access would generate further questions and research in relation to these categories and historical experiences. In the near future UWC also needs to liaise with its own in-house activist archives initiatives that include the collaborative and ongoing Revolutionary Papers project that links research, teaching and diverse publics (see proposal at

<http://www.chrflagship.uwc.ac.za/call-for-papers-revolutionary-papers-counter-institutions-politics-and-culture-in-periodicals-of-the-global-south-workshop/>).

### Publication in hard copy

The ground-breaking monograph by art historian Chika Okeke on Nigerian modernisms was made possible by his access to small archives and correspondence of s associated with art movements in Ibadan in the 1950s and 1960s.<sup>91</sup> The relationship between archival research, interviews and prize-winning academic publication (on African art in this case) is obvious. However, this is not the only form of publication that might bring attention to collections held at UWC. Aside from scholarly work, it is extremely viable to publish curated parts or thematic sections of actual collections. Many models exist. For photographic collections, one excellent template is the British Café Royal series that produces small, self-contained volumes of curated photographers’ work. These address issues of social life, urban change, protest events, minority communities, jazz, labour and more (<https://www.caferoyalbooks.com/>). Closer to home, the ‘Carnets de la Création’ series by French publisher Éditions de l’Oeil generated multiple booklets showcasing selections from the archives of numerous Mozambican photographers. We have active precedents already for filmic work on artists in Cape Town, notably the prize-winning short documentary film *The Art of Healing* by Mozambican photographer and UWC student Rui Assubuji. Such forms of dissemination might be in hard copy

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<sup>91</sup> Chika Okeke-Ugulu, *Postcolonial Modernism: Art and Decolonization in Twentieth-Century Nigeria* (Durham NC: Duke University Press, 2015).

and digital format, and both would give UWC and its archives a higher public profile in the city and internationally.

## VII. RECOMMENDATIONS AND NEXT STEPS

### Summary of Recommendations

	RECOMMENDATION	KEYWORDS
I	Put collections under full archival control and develop coherent collection management policies.	policy, capacity
II	Reconstitute the Art Committee	governance, policy
III	Review and enhance technical systems and human resource capacity.	capacity
IV	Improve the UWC archive's interoperability with other archives - a contribution towards common approaches, systems and processes in a national infrastructure for accessible and sustainable digital archives and heritage.	partners, interoperability
V	Adopt the OAIS Reference Model for the UWC archival system including UWC/CHR, DRAMS and Mayibuye.	plan, capacity, interoperability
VI	Seek Certification as a Trusted Digital Archival Repository	plan, capacity
VII	Develop a UWC Long-Term Preservation Plan, Collection Management Policy and Human Resource plan for UWC archives.	governance, plan, preservation
VIII	Actively seek mutual partnerships with other institutions	partners
IX	In defining its primary audience, formally adopt something along the lines of "the UWC Community and the southern African Public" as the Designated Community for UWC archives (OAIS reference model).	governance, community
X	Support the implementation of an OAIS infrastructure including the Archivematica and AToM digital archive system at UWC.	capacity
XI	Support the development of an OAIS Audit and Trusted Certification for UWC archives - an 'ethical infrastructure' in service of this priority community.	governance, capacity

XII	As part of a Collections Development Plan, develop a curatorial policy guideline regarding public access to UWC archives.	policy
XIII	Place UWC research, teaching and public mission support as core issue for access	policy
XIV	Encourage dialogues and partnerships across the faculties	policy, capacity
XV	Fast track the discoverability of existing digital research materials at Mayibuye	plan
XVI	Offer select paper book publications such as art and photographic catalogues and monographs.	plan, capacity

## Next Steps

	ACTION	STAKE HOLDER	RESOURCES	SPACE	EST TIME FRAME
Policy, Legal, Governance					
	Officially adopt White Paper recommendations	VC, Planning			3 months
	Adopt UWC Long Term Preservation Strategy covering all including DRAMS	Council, Senate	Documented evidence for certification		12 months
	Develop agreement with RIM around Mayibuye governance and management	UWC, RIM			6 months
	Convene an Archival Governing Body or Committee with relevant stakeholders to monitor transition from White Paper to archive building, and initiate drafting of Collections Development Policy	UWC			6 months
	Workshop/ Conference - Collection Dev Policy	UWC, partners			Milestone
	Adopt UWC Collection Development Policy	Council, Senate	Documented evidence		Milestone
	Communicate with stakeholders - including donors (for Trust/ Certification)	VC, Archives, Faculty	Archivist, Faculty		
Technical					
	Integrate Mayibuye and UWC Research Collections - OAIS System				
	Establish UWC OAIS technical task team - Scope, cost and implement Archivemata and AToM implementation specification with Artefactual or other provider. Include multi-year training component.	CHR, DRAMS, MA	ICS preservation expert, new staffing, hardware, software, UX design		12 months
	Develop OAIS for DRAMS with interoperability	DRAMS, UWC			
	Integrate spatial workflows	DRAMS, CHR, Mayibuye	Staff		12 months
Preservation Pilot Projects					
	Rashid Lombard Collection Ingest Project - Submission Information Pack	CHR	Archivist, Grant	Storage	36 months
	Articulate research, teaching and curatorial programme	CHR, Faculty	Grant	Lecture, Exhibition, performance	
	CAP Collection - Ingest Project - SIP	CHR, Faculty	Grant	Storage	
	Integrate Mozambique portal	History			
	Create a skills development plan for digital preservation - Archives, faculty, administrative staff	UWC, partners	HR, budget allocation		
	Pilot Curriculum Workshop - Archivists, graduate students, faculty.	Faculty, staff	Grant		

## Success Indicators

After the period indicated in the table header, this is what a snapshot of UWC archives might show:

	AFTER 2 YEARS	AFTER 5 YEARS
Teaching	Teaching faculty show growing uptake of archival content for curriculum. Growing curriculum materials metadata enrichment programme	70 % uptake of archive content in undergrad humanities teaching
Research	Growing graduate access to archive materials Growing faculty submissions to the archive Ongoing training of archivists and faculty, in metadata development and ingest	Critical mass Critical mass Large grants for metadata development, and enrichment
Public Education	Concluded first exhibition programmes - Lombard Collection, other collections Archive and heritage tour becomes part of student orientation at UWC Established programming plan aligned w existing intake and phase Pilot crowdsourced heritage mapping project - UWC and surrounds gym	Vibrant programme of exhibitions, online participation, and print publications Archive launches Alumni benefits for UWC Growing online catalogue UWC launches online heritage map portal, engaging present students and alumni
Policy, legal, governance	UWC has adopted Preservation Plan, Policy, and OAIS	UWC has an adequately staffed archival system
	<b>Collections and staff are in a refurbished building</b> , and an integrated archive management system is emerging. UWC Archive Committee/ Governance body, appoints members Prepare for certification/ audit - training and pilots	Further skills audit and action Conduct first successful OAIS audit/ Certification
Technical	Implemented Archivematica and AToM Training for faculty, students - Data and software carpentries Concluded due diligence on collection upkeep - outstanding issues, inventory, provenance	First OAIS Technical review UWC has a cohort of digital humanists and archivists
Administration	Designed integrated OAIS archival workflow UWC has secured startup support for transitional phase Appointed additional archive, administrative/ technical staff - especially for preservation IT	Grants - preservation, training, technical infrastructure, staff, special projects
Stakeholders	Conclude new agreement with RIM Agreement with E UWC Research	Achieved OAIS interoperability with RIM Digital preservation is integrated with iKamva, E Research and other infrastructures New building hosts integrated workflow Achieved consortium agreement - UWC, SA and international partners - for risk sharing, training and other collaborations