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Preservation Risk Assessment Survey of the University of Botswana Library

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Abstract

Libraries and archives are tasked with the responsibility of providing access of information to the public and stakeholders in the present and future years to come. This can be achieved through various strategies which fall in the realm of preservation management. Among others, these include adapting to risk management approaches. In that regard, towards the beginning of the year 2013 the University of Botswana Library Conservator was tasked with the responsibility to conduct a preservation risk assessment in order to address deterioration issues of collections in the university library. This article sought to report the findings on the preservation risk assessment and recommendations on the strategy for improvement. Data for the risk assessment was collected using a structured preservation assessment survey. Findings of the assessment indicated that while most challenges in preservation included shortage of finance, shortage of staff and equipment, most risks observed were due to unavailability of guidelines and policies. These risks were classified as risks influenced by operational and reputational procedures.

Keywords: Preservation, risk assessment survey, University of Botswana library

Introduction

Libraries and archives are tasked with the responsibility of providing access of information to the public and stakeholders in the present and future years to come (Segaetsho and Mnjama, 2012). This can be achieved through various strategies which fall in the realm of preservation management activities. Preservation is a pervasive function that should be present in all library and archives activities, right from acquisition through to access. It is a holistic approach that treats not only the symptoms of deterioration in materials, but it also tries to mitigate their effects. Millar and Roper (1999) discussed preservation as a primary responsibility of elongating life span of collections through the use of different cost effective managerial activities. Harvey (1994) further discussed preservation as the managerial and financial activities encompassing policy frameworks, security to collections, storage management, care and handling, pest and mould control, disaster management and environmental considerations. In order for libraries and archives to achieve these endeavours of preservation of collections, they use different strategies among which include conservation survey and preservation risk assessment surveys. Bulow (2010) asserted that from the past few decades, enormous innovative strategies in information technology have culminated into different challenges which have forced the National Archives in the UK to adapt new ways of preservation strategies. These include adapting to risk management approaches. Bulow (2009) further opined that risks managements procedures are strategic drivers for large archives.

Crouch and Wilson (1982), Moore (1983) and Suokas and Rouhiainen (1993) defined risks as the possibilities of undesirable changes occurring. They further elaborated that risk assessment would then be defined as the analysis of the magnitude of all risks affecting some entity. It is the application of available resources in a way that minimises the overall risks. Waller (2003) went on to categorise risks into three major types, namely 1) catastrophic; disastrous sudden damages like earthquakes, volcanic eruptions, etc. 2) sporadic and severe risks like burst water pipes, a truck of overloading river sand causing sudden

dust, etc, and 3) continuous/ongoing risks like incorrect temperature and relative humidity. Literature indicates that there are many different methods of carrying out preservation risk assessment. Methods used in assessment are chosen mainly depending on the aims of the assessment itself, whether it addresses conservation needs, a certain particular set of risks, or specific collection within an institution or organisation (Waller, 2003). Common methods include benchmarking and prioritising on risks, using British standard 5454 (2000) method as outlined in the standard and Waller method which uses mathematical approach of calculating magnitude of risks (Waller, 2003). Bulow (2010) views the British standard as a better method mainly for considering conditions of collections but does not attempt to identify the causes of damage.

Despite few limitations on risk assessments, the importance of carrying out preservation risk assessment has been well elaborated in literature (Waller, 2003; Bulow, 2010). Risk assessments are the paramount determinants of quantitative or qualitative value of risk related to a concrete situation and a recognised threat. It is therefore important that risk assessment strategies be anchored on in order to evaluate assumptions and uncertainties on preservation of collections.

Preservation issues in Libraries and Archives

The challenges of preservation management are increasing, spreading across the world as the major concerns in the operations of libraries and archives. Ngulube (2005), Kootshabe (2011) and Segaetsho and Mnjama (2012) observed different initiatives and challenges that cut across libraries and archives internationally, regionally and locally. They observed that libraries and archives, more particularly in Africa, are highly overwhelmed by lack of knowledgeable staff and unavailability of policies or guidelines. Ngulube (2005) further observed that there is lack of research publication on the topics of preservation and conservation, more especially in Africa. In agreement with Ngulube, Kootshabe (2011) and Sekiete (2011) also noted that there are very few studies that have been conducted on preservation of libraries and archives in Africa. Libraries and archives are also internationally challenged by inappropriateness of building materials for storages (Sung et al. 2012). Another issue that emerges from the reviewed literature is that external climate changes do have significant influences on storage conditions of libraries and archives (Jack Chen et al. 2010). The inappropriate storage conditions have been observed to be causing significantly high fluctuations on temperatures and relative humidity in libraries and archives' buildings. Furthermore, despite different newer challenges on preservation activities, the classical issues of shortage of finance, shortage of skills, knowledge and education and shortage of equipment are still a challenge in many countries worldwide.

Sekiete (2011) observed that libraries and archives in Tanzania were challenged by different issues including inappropriate acquisition and collection development measures, irrelevant building structures and maintenance, and poor preservation and conservation procedures. Similarly, the University of Botswana Library has been observing deterioration effects in most of its collections both in open shelves and the special collections areas. The Special Collection Unit, which is considerably new, has been challenged by different preservation issues (Segaetsho and Mnjama, 2012). In that regard, towards the beginning of the year 2013, the UB Library Conservator was tasked with the responsibility to conduct a preservation risk assessment survey in order to address the deterioration issues of collections in the UB Library. Therefore, this paper presents the findings and recommendations of the conducted preservation risk assessment survey held at the UB Library. The major project objectives of the preservation risk assessment survey are discussed below.

Assessment Objectives

The overall objective of the risk assessment was to determine collections' risks observed at the University of Botswana (UB) Library and make recommendations on aspects of improvement required to keep collections more stable, strong and durable for a longer period of time. The assessment activity sought to determine issues that influenced deterioration of the UB Library collections. The assessment approach was focused on the following objectives to:

- to identify all risks to collections in UB Library main campus
- to assess the frequency and magnitude of risks to collections in UB Library
- to determine the sources or causes and influences associated to the risks
- to identify the possible strategies that can be used to mitigate the risks to collections.

Assessment Questions

The risk assessment questions that were addressed are:

1. What are the collections risks at the UB-library?
2. At what levels of affection, frequency or magnitude do the risks affect collections?
3. What are the sources and influences associated to collections?
4. What are the possible strategies that can be used to mitigate or minimise risks to collections?

Scope and Limitations

This preservation risk assessment survey was limited to the University of Botswana Library main campus located in Gaborone, Botswana. The assessment was carried out over a period of six months between January and June, 2013. Owing to to the limited time and shortage of staff, the study did not include other branch libraries at Faculty of Engineering and Technology (FET), the Centre for Continuing Education (CCE) and the Okavango Research Institute (ORI). However, recommendations from the findings could be applicable to the other library branches and elsewhere.

Methodology

There are different research methods adopted by different researchers. The nature of the choice of the research methodology is dependent upon the nature of the research questions (Saunders, Lewis and Thorthhill, 2012). This preservation risk assessment was aimed at identifying major risks that could be culminating into deterioration of collections. Therefore, data collection of this assessment was conducted using a preservation risk assessment survey. The survey employed an exploratory and descriptive risk assessment anchored on Waller (2003) method. However, mathematical approach of calculating magnitude of risks by Waller (2003) was not adopted due to unavailability of some statistical data on preservation. The study was anchored on experience and structured personal observations as the data collection tool in order to determine risks, preservation practices, methods and levels of affection, frequency or magnitude of risks. A review of pertinent literature on preservation was also undertaken to guide identification of major risks to be observed in the library area. Where necessary, the survey also consulted relevant professionals for clarification on risks. Preliminary findings of the risk assessment were presented to Special Collection staff and recommendations in the findings were approved for implementation by the Special Collection Manager as the way forward for improvement. In overall, the risk assessment obtained both quantitative and qualitative information. This allowed statistical and textual gathering of detailed data with good reliability on instrumentation (Saunders, Lewis and Thorthhill, 2012). Detailed discussions on finding from the methodological steps of the risk assessment are discussed below under results and discussion section.

Results and Discussions

The University of Botswana Library houses different types of collections. All these collections are not stored according to their type of media or under specific condition. The major distinction on location and condition is that the Special Collections Unit maintains lower temperatures and relative humidities whereas the other floors in the open shelves do not. Open shelves consist of 7 locational sections including learning common, circulation services, 1st floor, 2nd floor, 3rd floor, upper ground and the mezzanine floor which holds periodicals (University of Botswana, 2012). In consideration of the library setup and volume of collections, it was necessary to choose an assessment method that would appropriately address the two major sections' needs. The results of the assessment on the study objectives were as follows:

Assessment Objective One: Identification of Risks and Their Causes

The survey started by identifying a list of major risks to collections using experience, observation and

documentation. These risks were then grouped into 14 categories depending on their impact, interrelation and causes. Similar assessment method was also employed at the National Archives in the UK (Bulow, 2010).

Risk Category 1: Policies

Non-existence of policies: The Special Collection, (consisting of Legal Deposit, Archives and Preservation Sub-Units), has policies which work hand in hand with the other library open shelve policies. The assessment indicated that preservation policies were in place. In the same view with Segaetsho and Mnjama (2012), the questions that still need to be addressed are the extent to which the policies are implemented. The assessment indicated that policies were in place but the policies were not critically followed or implemented. For example, the assessment indicated that despite the fact that the policy clearly indicates that pens should not be used during access to collections, customers were using pens in the reading rooms.

Policies which do not address necessary preservation needs: An issue to bear in mind was that preservation and conservation work is a specialist professional work which is mainly established to support the establishment of access of information for the present and future (The National Archives Act 1968). Therefore, its operations are mainly in the form of projects. However, it was not clear how the library integrates the operations of librarian profession with other professions.

Risk Category 2: Managerial Work Budget

Consultation with the Special Collections manager revealed that the University of Botswana is a government– sponsored university depending mostly on funds from the government and its stakeholders. The library gets its funding from the university budget allocation to departments. The Manager revealed that Special Collections Unit gets little or sometimes nothing on allocation for preservation and conservation establishment. This was perceived as a major cause of slowdown in achieving basic needs of preservation work. Kootshabe (2011) and Selatolo (2012) similarly posited that it is important that the preservation and conservation sections be allocated budget for purchasing of equipment needed for preservation and conservation work.

Staffing: The library had a large number of staff compliment of about 160 staff, and 92 staff were already in post (University of Botswana, 2012). The Special Collections Unit has about 8 members of staff with Preservation and Conservation sub-unit consisting of only two staff, and this suggested a challenge of shortage of staff. In agreement to this challenge, Kootshabe (2011) and Segaetsho and Mnjama (2012) also observed shortage of knowledgeable staff as the major challenges faced by libraries and archives in Botswana. Serious training for staff in preservation management, conservation and book binding is necessary in order for the library to improve on its preservation work.

Risk Category 3: Environmental Conditions

Temperature and Relative Humidity (RH) has been previously monitored since 2005/2006 up to September 2009 when the then trainee conservator went for studies (Segaetsho and Mnjama, 2012). Document review of Segaetsho and Mnjama's (2012) findings indicated that by then there were reasonable fluctuations in temperature and relative humidity. During the course of the assessment, it was found that environmental monitoring, spot checks, fluctuation and data analysis were no longer done due to unavailability of instrumentation. The library does have a heating, ventilating and air conditioning (HVAC) systems. The barrier to implementation of environmental monitoring was shortage of instrumentation.

Audio visual materials: The assessment indicated that there were no specific rooms for storing and monitoring temperature and relative humidity for audio visuals. In future, cold room would be necessary in order to minimise deterioration rate of these collections.

Risk Category 4: Housekeeping

Dust: The level of dust within the library was not known. There were no measures in place to monitor the level of accumulation of dust.

Tidiness: The library cleaning is done by an outsourced company, and a person responsible for managing and organising the cleaning company is a manager in Circulation and Extension Services (C&ES). The survey has shown that there were no specific cleaning strategy in place, but the Conservator was lately tasked with drafting guidelines on housekeeping. The Conservator also organises workshops on cleaning procedures to the library staff and the outsourced cleaning company staff. The assessment indicated that there was no consistent method or data for gauging and analysing cleanliness of the library building.

Risk Category 5: Pests Food in the Library

An assessment indicated that there was no strategic pest management system in place. However, pesticides have been used for some time but there was no monitoring and analysis on the effectiveness of the pesticides. Food and eating was allowed in certain places within the library. Staff members can carry food and eat in their offices even though an attempt has been made by Special Collections Unit to stop eating in offices. Similar observations were also opined by Segaetsho and Mnjama (2012). The library sometimes experiences leakages in drainage pipes and uncontrollable environmental conditions which can attract pest infestation.

Integrated Pest Management System: It was not clear who is responsible for organising fumigation and outsourcing of pesticides supplies; the pesticides in place were supplied by an outsourced specialist company. There were no guidelines of specifications on pesticides to be used but the assessment indicated presence of different pests in the building (figure 1). Dangers that can be caused by the pesticides used and their expiry dates were not known. Physical observation during the survey showed a number of pests at places with pesticides. The extent of damages caused by pesticides was not well understood and the major causes of pests were not known. Similar views were also expressed by Segaetsho and Mnjama (2012).

Figure 1: One of the pests observable in the building

Risk Category 6: Light Length of Exposure

The library is open most hours a day, but most books are closed in shelves. This minimises exposure to content text. The time on which light might contribute to deterioration is during reading time in the library and at home during loaning periods.

Strength of light: Exposure to ultraviolet (UV) can cause fading to collection (Balloffet and Hille 2005). The library should always use bulbs with less lux.

Risk Category 7: Mould Leakage

The assessment indicated that challenges that have to be monitored are due to handling by customers during loaning time and leakages in the library that might cause dump areas.

Risk Category 8: Care and Handling Shelving

The Special Collection Unit which concurs on preservation was mostly affected by poor shelving as shown in figure 2. Consultations from Special Collections staff indicated that introduction of mobile shelves/compact shelves has brought protection from fire, flooding, etc, but has also brought a challenge of

falling collection during accession. Because of frequent usage of the collections, spiral bound theses and weak binding to certain reference materials collection were highly in danger. Other sections of the library had minor challenges of shelving which can be easily addressed.

Customer handling: The library was not doing any measures to analyse deterioration done by customers. Tears, missing pages, staining and acidification due to handling by customers were not monitored. Book binding were outsourced to private companies.

Staff handling: An assessment indicated that some risks could be due to shelving process and handling during processing stages. The extent of damage was not yet understood. Staining by tea in offices could also be a threat but this needed to be investigated further.

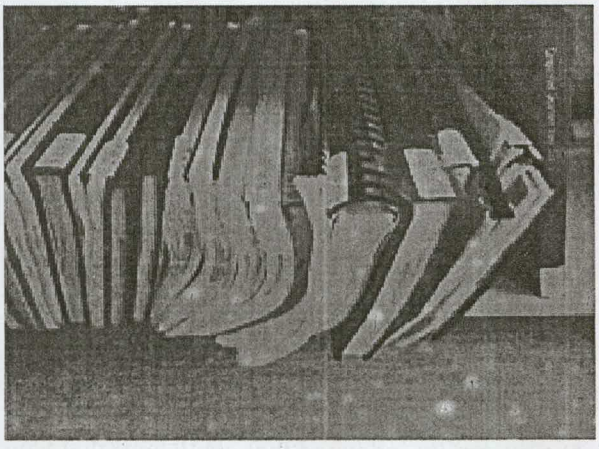

Figure 2: Some of improper shelving in Special Collections area

Risk Category 9: Manufacturing Process Lignin Presence

Special Collections Unit anchors on acquiring collections of all publications in Botswana (University of Botswana, 2012). Among others, these include a collection of newspapers. Newspapers are mainly lignin containing cellulose fibers (Balloffet and Hille, 2005). Lignin content was not tested and monitored in these collections.

Binding: An assessment indicated that some bound newspaper materials were repaired with inappropriate materials like pressure sensitive tapes (silo tapes).

Alum rosin: The assessment indicated that it was difficult to monitor all published books, journals, etc, on their paper content. However, random sampling and testing on paper content was necessary to monitor paper acidity more especial on Tshekedi collections which contain 18th and 19th century collection. The extent of deterioration on this collection was not known.

Risk Category 10: Particulates and Air Pollution Sooth, Particulate Dust, etc.

Sooth due to external burning was not perceived as a major threat since there had not been fire in the past especially nearer to the library building. The assessment indicated that this could be a threat in open shelves collections since the books are loaned to the outside environment. The impact of air pollution and particulates can significantly be dangerous to collections (Balloffet and Hille, 2005).

Risk Category 11: Reprographics Related Risks Photocopying

Open shelves materials were not restricted to photocopying. During photocopying process, literature indicates that damages expected are mostly to binding and tearing of collections (Harvey, 1994). The extent of damage caused by photocopying was not well understood in this assessment. Special Collections materials were always under monitoring, therefore the Special Collections' Conservator was of the view that this should be at a minimal rate if at all it does occur.

Scanning: A new project on digitisation has started. Challenges on damaging binding, unbinding, tears, etc, were not yet understood. It needs further investigations.

Risk Category 12: Access and Security

The UB library had a security system in place to help in maintaining order in the reading rooms in the Special Collections and the entire library sections. The security has been well familiar with rules and regulation required by library in general. The assessment indicated that the library building has window locks, alarmed doors and security guards. Security systems have the responsibility to check the

building on daily basis after closure times. However, collections check has not been done in order to identify missing collections.

Risk Category 13: The Building Materials, Fabrics, etc.

The library building was a purpose built building meeting most of the specification required for preservation (Segaetsho and Mnjama, 2012). The building was mainly made of metal/steel, concrete and plastic contacting materials. The materials used for construction should be generally durable and strong (Balloffet and Hille, 2005). There was no evidence of threat observed on gaseous emissions. However, the extent of gas emission needed to be interrogated.

Maintenance: Assessment of the building indicated that the building was generally still in good condition but few cracks were observable on certain parts of the building structure. The assessment also indicated that there was no critical survey on the building conditions done on frequent bases. This study concurs with Henderson (2013) who posited that it is advisable to have selected personnel responsible for building survey.

Risk Category 14: Disastrous Risks

Catastrophic (floods, earthquakes, volcano, etc): The library building had emergency exit but their functionality was not well monitored. Sprinklers were installed as a fire suppression system and the detection system was regularly maintained and tested once in a year. Pressure water fire extinguishers were also available on all floors and in most offices.

Sporadic and severe risks: External threats or risks to bear in mind were sporadic risks. These were risks like overnight bust of pipes which can result into rapid increase in relative humidity causing mould (Swartzburg, 1995). The Special Collections staff opined that pipe busting and leakages frequently observed suggested that it could be likely that in the future this might damage collections in archival storage rooms.

Assessment Objective Two: What Levels of Affection, Frequency or Magnitude do the Risks affect Collections?

The risk assessment survey also anchored on understanding the levels of affection and frequency or magnitude at which the risks could occur. In order to ascertain on this, the assessment adopted a similar method to Waller's (2003) in order to get a clear picture on the frequency on the possibilities of risks occurring. The method involved classifying risk on their consistencies, sporadic and severity as shown in table 1. The table 1 was then used to allocate numbers on every category of the identified risks.

Table 1: Ranging of frequency of occurrence versus severity of risk

	Constant	Sporadic	Rare
Catastrophic	1	2	3
Severe	4	5	6
Continuous/ongoing risk	7	8	9

1 = Risk classified as constant and catastrophic

2 = Risk classified as sporadic and catastrophic risk

3 = Risk classified as rare but catastrophic risk

4 = Risk classified as constant but severe risk

5 = Risk classified as severe and sporadic risk

6 = Risk classified as rare and severe risk

7 = Risk classified as constant and continuous risk

8 = Risk classified as sporadic and continuous risk

9 = Risk classified as rare and continuous risk

During the assessment survey it was noted that the library had nothing in place to monitor and analyse the level of risks. The assessment showed that it is difficult or rather premature to prioritise risks according to their levels of impact to collections. Prioritising risks would have required an intense analysis of deterioration in the collections themselves, then classifying deterioration according to their causes and later identifying the risks associated with those collections. Therefore, summative results were presented depending on issues of location, influences associated to risks, and ranging of frequency of occurrence versus severity of risk. The results showed that ranging of frequency of occurrence versus severity of risk; the risks were mainly continuous/ongoing and constant (see table 2). This suggested that the risks could be minimised through setting specific conditions and monitoring of risks. The results also showed that for those risks which were continuous and constant major influences of the risks were operational and reputational influences. It was also evident that the risks were most likely to affect both sections of the library. The assessment also noted that some risks were severe or catastrophic but very rare. In such cases, disaster management is the appropriate method for addressing those risks (Bulow 2010).

The risks were also classified into their likelihood of existence, whether the risks were more likely to happen in the Open Shelves area (upper ground, 1st floor, 2nd floor, 3rd floor, Circulation desk/ learning commons or periodicals) or in Special Collections area. No distinctive disparities on locational influences were observed.

Assessment Objective Three: Sources or Causes and Influences Associated to the Risks

Four major deterioration influences were identified and classified as (1) financial influence, (2) managerial/operational influences (e.g), (. poor management 3) reputational influences (e.g. poor customer service), and (4) legal obligations (e.g. cop rights) (Bulow, 2010). Waller (2003) posited that in many cases deterioration effects which are due to reputational behaviour are more likely to be reduced at less costs. Analysis in this assessment also indicated that most of influences associated to risks were mainly due to operational and reputational influence as shown below in figure 1. The assessment showed that 43.5% of risks were influenced by poor operation of the University Library whiles 34.8% of the risks were mainly influenced by the reputation of the library. Only 13% of the risks might be occurring due to influence of financial obligations. Financial obligations were mainly perceived to be influencing deterioration mostly under environmental conditions, building and managerial aspects. These are due to the fact that it is highly expensive to instal heating, ventilating and air conditioning (HVAC) systems for monitoring temperature and relative humidity. Similar observations of challenges of finances have been also observed in other libraries and archives locally, regionally and internationally (Kootshabe, 2011; Sekiete, 2011; and Selatolo, 2012). This was observed as the major barrier on preservation efforts even though it has less influence on many risks. Similarly, hiring and training staff on specialist courses in preservation and conservation is expensive. This should be classified as long-term preservation needs which require commitment and funding. Ngulube (2005) also opined that most of preservation work in libraries and archives suffers from lack of commitment and funding.

Table 2: Preservation Risk at UB-library Main Campus

Categories of Risk	Associated Causes	Ranging of Frequency of Occurrence versus Severity of Risk	Location of the Collection to be More Likely Affected by the Risk	Influence Associated with the Risk
1. Policies	Inexistence of policies	-	Open shelves Special collection	Operation Reputation Legal Obligations
	Irrelevance of policies	-		
2. Managerial risk	Budget	-	Open shelves Special collection	Financial Legal Obligations
	Staffing	-		
3.Environmental Risks	Temperature	7	Special collection	Financial
	Relative humidity	7		
4. Housekeeping Risks	Dust	4	Open shelves Special collection	Operation Reputation
	tidiness	7		
5. Pests	Food	4	Open shelves (learning commons) Special collection	Operation
	External	4, 5, 7		
	Environment	7		
6. Light	Time of exposure	7	Open shelves	Operation
	Strength of light	7		
7. Mould	Pipe leakage	5	Open shelves Special collection	Operation Reputation
	Environmental	4		
8. Care and Handling	Shelving	4	Open shelve Special collection	Operation Reputation
	Customers (tears, acidity)	5		
	Staff	7		
9. Manufacturing process	Lignin, acidity	7	Open shelves Special collection	Reputation
	Binding	7, 8		
10. Particulates and Air Pollution	Material emission	7	Open shelves	Operation Reputation
	External gases	6		
11. Reprographics related risk	Photocopying	7	Open shelves	Operation Reputation
	Scanning	7		
12. Access and Security	Theft	6	Open shelves	Operation Reputation
13. Building	Material/fabrics	3	Open shelves Special collection	Operation Financial
	Maintenance	3		
14. Disastrous	Earth quake	3	Open shelves Special Collection	-
	Fire	3		

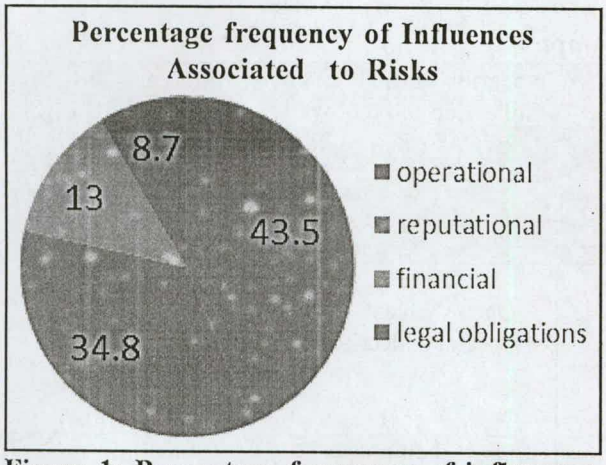

Figure 1: Percentage frequency of influences associated to risks

Assessment Objective Four: Summary of Recommendations on Improvement

In order to address the objectives of this assessment a summary on recommendations for improvement was strategised into a table format below (table 3).

Table 3: Summary of recommendations on improvement

Identified Risks	Aspects of Improvement/Strategy
Policy Development	The draft policies on preservation and conservation need to be edited and approved as soon as possible. Supportive guidelines and procedures should be made available as a single approved handbook manual available both in print and in electronic forms.
Pests Risks	Database on pests, clearly showing their frequency, date, type and prescribed remedy on them (Pest monitoring and analysis)
Housekeeping Risks	Produce housekeeping guidelines (have a cleaning strategy) Create database reports that clearly outline sources of dust, location, level of accumulation and prescribed methods for improvement
Environmental Risks	Produce database on temperature and relative humidity, monitor and analysis results yearly Installation of Heat, Ventilation and Air-conditioning System (HVAC). This is a long term investment which requires huge amount of finance. Purchase of cold room to store Audio visual materials
Managerial Risks	**Budget:** Library should have budget for preservation work and initiate a programme to look for funding **Staffing:** educate staff on preservation work and Request for specialist staff
Light	Reduce light exposure as much as possible Monitor lux and type of bulbs used
Care and Handling Risks	**Shelving:** conduct research on appropriate shelving method for mobile shelves (Re-shelving) **Customer handling**: initiate a research and make a programme on user- education **Staff handling**: user-educate staff on preservation
Mould	Monitor mould and perform frequent inspections
Manufacturing process risks	monitor and have specifications to guide binding process have database on materials sent to binding their causes of deterioration, times sent to binding, frequency of binding, etc.
Particulates and Air Pollution Risks	Monitor and analyse air pollution and particulates in the library
Reprographics Related Risks	Provide user-education programs on proper methods of photocopying, scanning, etc.
Access and Security Risks	Provide service/maintenance to CCTV cameras Perform monthly check on CCTV to identify any hidden collections theft
The Building	**Fabrics:** have gas emission monitoring programme **Maintenance:** have selected personnel responsible for building survey
Disastrous Risks	Complete draft disaster preparedness and implement it. Have a personnel to do continuous monitoring of fire extinguishers, exit doors, etc. Collaboration with the entire university fire preparedness

Conclusion

First point of call in preservation management is the establishment of a clear preservation and conservation policy. In appreciation of the fact that this section is newly established in UB Library, the library has to have a target (e.g. 5 years) on which by then it should be in a position of monitoring, gauging and analysing the discussed risks. The preservation risk assessment indicate that most of the work does not necessarily need larger financial input for preservation implementations, for examples, risks of housekeeping, care and handling, reprographics and pests monitoring mainly require setting up guidelines and implementing policies. These have been classified as risks influenced by operational and reputational procedures. However, few types of equipment might be necessary to carry out database generation in order to monitor and analyse their extent. It is very important that the library work with other departments and associations to initiate research titles and build interest to academic staff to research on issues of concern in the library. The assessment recommends a strategy for improvement that should be used by the library preservation and conservation sub-unit. The prescribed strategies have not been prioritised into their agency, it is in the hands of the manager and staff in preservation and conservation sub-units to discuss what to address first.

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