

BY

SARAH ABLA ADINKU (MRS)

B.A. (HONS) LEGON



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DECLARATION

I declare that this dissertation is the result of my own research work, carried out in the Department of Library and Archival Studies under the supervision of MR HARRY AKUSSAH.

All references cited in this work are fully acknowledged.



SARAH ABLA ADINKU (MRS.)  
(B.A. HONS DIP LIB.)  
STUDENT



MR. HARRY AKUSSAH  
SUPERVISOR



DEDICATION

To my uncle, Mr. Micheal Kwasi Mensah,  
Former Head of Geology Department, University of Ghana.

Through whose efforts I saw myself at Legon in 1974.

"Todia, I say Ayekoo" with love and gratitude.



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SARAH ABLA ADINKU

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## ABSTRACT

The Balme library is set up to provide materials for researchers, lecturers, students and the general public. To protect and preserve these materials from being destroyed by pests, rainstorms, fire or any natural or man-made hazards there is the need to have a comprehensive management plan aimed at preventing or mitigating the effects of disasters in the library.

Potential hazards and areas prone to disasters have been identified through risk assessment, questionnaires, personal interviews and documentary sources.

The study revealed the existence of fire and flood hazards in addition to the presence of biological, chemical and mechanical deterioration. However, the inadequate measures in place indicate that there is no disaster management plan in the library.

In view of the above, a number of suggestions and recommendations were made in order to draw up a disaster management plan for the library.



## 1.0 INTRODUCTION

Disasters have contributed substantially to the destruction of lives and properties. In the light of the devastating destructions, the United Nations declared the 1990-2000 as "International Decade for Natural Disaster Reduction (IDNDR)". The declaration enjoined all member countries to develop framework that would enable the attainment of measures to mitigate the adverse effects of disasters.

Though the declaration has given impetus to a lot of activities towards disasters management globally, it was not until the year 1996 that Ghana by an Act of Parliament,<sup>1</sup> established the National Disaster Management Organisation (NADMO) to co-ordinate and manage disasters and other emergencies in the country.

This task involves the preparation of National Disaster Management Plan. It thus implies that every organisation should have a plan that could be incorporated into the National Disaster Management Plan to ensure harmony in dealing with emergency response in disasters.

The concept of disaster management though not new librarianship, is largely overshadowed by much emphasis on the general preservation of library materials. Librarians are more concerned about the treatment of slow-creeping deterioration of their materials rather than the fast-occurring events that might cause disasters.<sup>2</sup> Though seen by some libraries as very remote disasters in libraries have happened

since ancient times and have been recognised as one of the worst calamities that can affect collections built over the years. Among the well-documented library disasters are those of the Florence Flood – 1966,<sup>3</sup> the Klein Law library fire as well as the Ghana Broadcasting Corporation Film Archives Fire in 1989.<sup>4</sup> The recent Trust House Fire in 1999 is still fresh in our minds. These show that no library is forever insulated against disasters.

Information so valuable and accumulated over decades should be protected from the devastating impact of unexpected events that may occur as a result of man's negligence or natural causes.

Unfortunately, in Ghana and like many African countries such crisis are most often handled on adhoc basis. The possibility of re-occurrence of such emergencies are never really thought of. Hence, unexpected events happen without Ghanaians adequately preparing for them.

Although with the establishment of NADMO, fora are being organised to discuss issues relating to disasters and plans for their management, Librarians and Archivists are yet to be involved. The reason may appear to be the fact that, such calamities are not everyday occurrences in libraries, neither are they heard of in relation to libraries, in our part of the world.

However, recent events such as the destruction of several institutions especially school buildings and other essential services by fire, floods, and rainstorms shows that

Librarians can no longer stay aloof when disaster issues are being discussed. They need to participate and make their voices heard in all such for a.

The Balme Library like any other university Library plays a very central role in the dissemination of information in the University of Ghana. In order to discharge this role effectively, the library acquires different types of materials in paper format, leather and vellum-bound volumes photographic materials, microfilms video tapes and films. These in themselves have properties that in the presence of certain elements can cause or accelerate disasters. In addition, various forms of electrical gadgets are now being used in order to make information retrieval easy and accessible to users. The process in some cases inevitably results in the creation of potential hazards for disasters.

Though Balme Library has not yet experienced any major disasters that may require the assistance of outside agencies like the NADMO and Fire Service, minor though persistent incidents of roof leakages and the ever-presence of the use of electrical gadgets are potential hazardous situations that require a concerted effort towards the establishment of disaster management plan.

#### 1.1 THE PROBLEM

Library resources are very valuable, either for the information that they contain or the role that they play in the promotion of teaching, learning, and research work of the University and other institutions.

The process of information provision necessitates, the acquisition of paper materials, photographic materials, films and microfilms which are susceptible to all kinds of

disaster agents like fires, flood, and many others. It also demands the use of computers and other electrical gadgets in which faulty switches and improper maintenance can lead to fire outbreaks.

Lack of maintenance leads to damaged windows and thus exposing collections to the ravages of insects rodents as well as the adverse effects of rainstorm. There appears to be no effective disaster management programme in the Balme Library. An attempt made in 1994 failed to yield any concrete result.

The implications for this lack of disaster management plan when either fire or flood disaster occur can be summarised as follows:

1. There could be substantial loss of valuable collections built over the decades.
2. There could be disruption of normal functions of the library
- 3 These could be a threat to life (staff and patron)
- 4 The substantive function of the university could come to a standstill

This year, 1999, the theme for the celebration of "World Disaster Reduction Day" which normally falls on the second Wednesday in October, is "Prevention Pays" Science and Technology Saves Lives and Secure Assets"<sup>5</sup>. How apt is this theme to safeguard human live and valuable assets in our institutions?

## 1.2 PURPOSE OF THE STUDY

Disasters have had major devastating impact on libraries worldwide. This impact seems to be most frequent in countries like Britain, France and America. Hence

measures are taken to draw disaster management plans to contain the situation. However, these efforts are not forthcoming in African countries like Nigeria, Sierra Leone and Ghana which have also experienced the devastating effects of library disasters, though on a much lesser scale in terms of loss of collections and lives. In spite of all these experiences, there is apparent lack of disaster management plan in most libraries.

In view of the foregoing, it has become necessary to undertake this study to ascertain the disaster readiness of the Balme Library.

### 1.3 OBJECTIVES

The main objective of this study was to examine the various disaster control measures in place in the library that are designed to forestall any disaster occurrence. The study specifically attempts to:

1. Assess any precautionary measure in place meant to mitigate any adverse effect of potential hazards.
2. Identify potential hazards in the library.
3. Examine the implications of possible out-break of fire disaster in the library.
4. Determine the level of awareness, re-action of both staff and users.
5. Suggest procedures for drawing up a disaster management plan for the Balme Library.

#### 1.4 HYPOTHESIS

The study was based on the following hypothesis

- i There are inadequate precautionary measures against disaster occurrence in the library.
- ii Though staff are aware of disasters there is no adequate training for them to prevent, fight or mitigate their adverse consequences.

#### 1.5 SCOPE

The study focuses on the Balme Library, its role in the University of Ghana, the various departments their functions and the staff. The scope is however limited to the investigation and examination of the various precautionary measures in place against disaster occurrence in the library.

##### 1.5.1 Limitations

In view of the short period of three months within which most of the research was carried out, the researcher concentrated only on actual library attendance of users.

Ideally, since disasters concern both potential and actual users of the library, at least 50% of the total population of users which is above 10,000 should have been interviewed.

Secondly, in order to measure awareness and preparedness levels of both staff and management, it would have been appropriate, had the researcher had the opportunity of witnessing actual disaster scenarios or simulation exercises. This was not possible



because of the unpredictable nature of disasters, lack of time and the elaborate preparation especially in case of simulation exercises.

Thirdly, in the data analysis only major variables were analysed due to time constraints. The questionnaires for both staff and users are reproduced in the appendices.

## 1.6 METHODOLOGY

The methods used to collect data for this study were informal interviews, risk assessment through observation, questionnaires and documentary sources to support view-points and terminology.

Two sets of questionnaires were designed and distributed to gather information from both staff and users to determine and measure the following major variables: general information about staff and users, collection and storage; awareness of disasters; disaster preparedness; insurance, education and training. Samples of questionnaires used can be found in appendices....1 & 11.

Both questionnaires were distributed over a period of two weeks in the library, in May, 1999. In all both documentary and raw data were collected over a period of three months between April and June.

### 1.6.1 Population and Sampling

The population of the study included: the building, the collection, equipment, staff and users.

The total population of staff stood at 108 at the time of the data collection. Out of this number, 55 members of staff were sampled. The questionnaires administered were restricted to only staff at post at the time of study. Forty-five of the questionnaires were retrieved.

Users include lecturers, students and others administrators. In all, the library was supposed to cater for over 10,000 students as well as 770 registered lecturers. In order to get a good sample of users, a daily attendance statistics was taken within one week i.e. from Monday to Friday. Out of the total of 2526 users, a sample of 200 were taken and questionnaire were administered. This choice of 200 as sample was necessitated by many factors. These include time and financial constraints and lack of other logistics. Out of the 200 questionnaires administered, 182 were retrieved. In view of the time constraints, though, the researcher intended to use stratified sampling method in the distribution of the questionnaire, it was difficult to determine lecturers at the time of the questionnaire administration. Therefore, questionnaire were distributed randomly at the various services points in the library.

The inclusion of users in this study was based on the conviction that no disaster plan can be effective without analysing the opinion of users of the collection.

## 1.7 BRIEF DESCRIPTION OF CHAPTERS

The study is organised and presented into six (6) chapters.

**Chapter one:** it is the introductory chapter. It contains a brief introduction; statement of the problem, purpose of the study and objectives, hypothesis, scope and limitations, methodology, chapter descriptions and usefulness of the study.

**Chapter two:** This chapter deals with related literature on the nature of disasters and their management in libraries. It contains tables of some selected major disasters as well as other disasters. It deals with the major components involved in disaster management such as risk assessment, prevention, preparedness, response, reaction and recovery.

**Chapter three:** The third chapter gives a brief historical background of Balme Library and the Structure and Organisational set-up in the University of Ghana.

**Chapter four:** This chapter attempts to identify and as well as locate potential hazards and control measures in the library.

**Chapter five:** This chapter deals with analysis of the data collected during the research especially the questionnaires. Attempt is made in this chapter to measure the major variables such as level of awareness, reaction in disaster to disaster, level of preparedness of staff in disaster management as regards training, education, insurance and facilities in place to forestall any disaster occurrence.

**Chapter six:** It contains the conclusions and recommendations. The chapter also includes a list of requirements necessary for disaster preparedness plan as well as floor location of valuable items to be salvaged during disasters.

## 1.8 USEFULNESS OF STUDY

Since its establishment, there has been no study in the area of disaster management in the Balme Library. This study will therefore be of great value to the Balme Library. Further, it is hoped that the information generated from this study will provide the basis for work on a comprehensive disaster plan for the Library and all other libraries in the University and for that matter the country.

It is also hoped that this study will provide a vital tool for the National Disaster Management Organisation in order to ensure that plans are prepared for similar institutions in the country.

Finally, the study will add to the existing knowledge on disasters most especially where library disasters are concerned and provide the basis for further research on other libraries.

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[http://www idnдр.org/campaign/reday.htm](http://www.idnдр.org/campaign/reday.htm)



## 2.0 NATURE OF DISASTER MANAGEMENT IN LIBRARIES

Disaster management has become an accepted part of preventive preservation programme of libraries as a result of the frequency of disasters and their devastating consequences on libraries.

The term disaster has a wide range of definitions. Generally, however, the word is defined as "an unforeseen and sudden event that causes great damage, destruction and suffering."<sup>1</sup> Disasters are not restricted to the loss of life and the destruction of lifeline facilities alone. The loss of records, library materials and other information resources of a company or a nation are a major concern and can indeed be a catastrophe in libraries. Therefore, to the librarian and archivist the term covers a wide range of events. Anderson and McIntyre offer a useful definition, which describes disaster as "an unexpected event with destructive consequences to their holdings. It may be a small-scale incident or a full-blown emergency, but in either case it requires prompt action to limit damage."<sup>2</sup>

The definitions above show the unpredictable and destructive nature of disasters and such events happen so quickly and always the damage caused can be very extensive. A small event in the library or great destruction needs immediate attention to resume normal work.

Paul Eden and Graham Matthews (1996) offer a working definition of disaster as "any incident which threatens human safety and/or damages, or threatens to damage a library's building, collections (or item(s) therein) equipment and systems."<sup>3</sup>

The wider scope embraced by this definition denotes that damage done during disasters can affect all resources in the library, be it human resources, library materials, equipment's and computer systems. It can also be deduced that the whole literary output of nations can be destroyed. On the whole, all the definitions sum up the nature of disasters as follows:

- Disruption to normal patterns of life. Such disruptions are usually severe and may also be sudden, unexpected and widespread.
- Human effects such as loss of life, injury, hardship and adverse effects on health.
- Effects on social structure such as destruction of or damage to government systems, buildings, communications and essential services.
- Community needs such as shelter, foods, clothing, medical assistance and social care.

These events have been experienced since ancient times. The destruction by fire of the Alexandria Library in ancient time is a classic case to recall, and even of recent times the Ghana Broadcasting Corporation Film Library Fire and the Turkey Earthquake cannot be easily overlooked.

## 2.1 DISASTER TYPES

Basically, there are two categories of disasters – natural and man-made. The natural are earthquakes, heavy rains and rainstorms that are not preventable, hence man has very little or no control over their occurrence. These are viewed as “Acts of God”. Some of the natural disasters although unavoidable, their occurrence can be predicted or forecasted and thereby, taking actions that lessen the severity of their impact. On the other hand, man-made disasters are often attributed to human errors or negligence to tackle the hazards that we live with. These could be prevented through taking precautionary measures.

Harvey (1993) identifies disasters that are regarded as “Acts of God” as earthquakes, floods due to heavy rains, rainstorm and windstorm, fire due to thunder and lightning, landslides and sometimes plagues. The list of man-made disasters include plane crash, rail disasters, electrical or bushfires, floods due to pipe-bursts, dam-breaks or dam spillage’s, wars and other acts of vandalism.<sup>4</sup>

The table 1 shows some selected major disasters.

DATE	LOCATION	DISASTER TYPE	DEATHS
May 22	Central China	Earthquake	200,000
May. 31	Western India	-	60,000
Jan. 24	Central Chile	-	30,000
Feb. 29	Western Morocco	-	12,000
Dec.3	Kuri Isis	-	unknown
June,	North of Flores Is.	-	unknown
Aug 1999,	Turkey	Earthquake	45,000
Aug	Indonesia	Floods	3,700,000
May. 20	Huang He River, China	-	180
Sept 17-21	Central Romania	-	1,300
June, 9	El Salvador Guatemala	Fire	260
Aug. 19	Abidjan, Ivory Coast	Fire	425
Mar. 3	Abadan, Iran, Move	-	
	Theater	-	41
Dec. 23	Addis Ababa, Ethiopia		
	Mandi Dalewali, India		
	School		500

TABLE 1 Some Selected Major Disasters

SOURCES. Red Cross Press Release -1998; World Almanac -1997; Word Book  
Encyclopaedia - 1989, Newsweek, August,30, 1999.



## 2 CAUSES OF LIBRARY DISASTERS

Generally, both natural and man-made disasters affect libraries. Geographical location and other environmental conditions prevailing in and outside the library largely precipitate some of these. Such locations also necessitate the frequency of occurrence and gravity of impact. Alegbeleye (1993) and Obokoh (1989) separately mentioned two commonly occurring causes of library disasters to be flood and fires.<sup>5</sup> Other studies however, include vandalism, theft, earthquake, insect infestation, and the effects of light and temperature among the causes of library disasters.

England and Evans (1988) distinguish between the above causes. The critical situation brought about by external causes like fire and floods and other emergencies they called acute disasters. Among the causes of acute disasters are potential hazards such as the following:

- Fire (arson, electrical fault candles, kerosene lamps and lanterns in libraries)
- Flood – water (burst pipes, heavy rains, seeping through leaking roofs, rainstorm reaping of roofs,

On the other hand, silent deterioration of materials as a result of chemical, mechanical, biological and pollution are called slow-creeping disasters. These have received extensive coverage by librarians and archivists when treating preservation management. Libraries have suffered these acute disasters for hundreds of years, and planning for such adversities have long been considered prudent in some countries. The knowledge of those librarians who have suffered or experienced unpredicted and accidental occurrence of fire or flood or storm disasters become an asset in an emergency situation, particularly if no prior thought has been given to emergency planning.

Nevertheless, the profession's experience of emergencies or disasters demonstrates that librarians are grossly negligent when they allow themselves to become complacent and relaxed that they actually believe they can sail through an entire career without encountering a natural disaster or man-made.<sup>6</sup> Without being pessimistic, most librarians realize that minor misfortunes are common, and major disasters are always possible. "While catastrophe may visit only small percentage of libraries, pipes can burst, air conditioners can leak and windows can be left open to the rain anywhere. A library prepared for a major emergency will find itself more able to cope with these lesser but still serious problems."<sup>7</sup>

Table 2 shows some fire disasters in libraries generally depicting the causes of such fire disasters.

Table 2 shows selected causes of library disasters

DATE	INSTITUTIONS	CAUSE
47 BC	Alexandria Library **	Fire
373 AD	.	.
1966	The Jewish Theological Seminary Library. New York**	Arson fire
1971	Radcliff Infirmary Oxford, England**	Old wiring fire
1977	San Diego Aerospace Museum/Library**	Arson fire
1978	Sir Sanford Fleming Building, University of Toronto**	Fire
1987	Nigerian Institute of Policy and Strategic Studies Library. Kuru***	Electrical failure
1988	Records Office – Sierra Leone***	Arson
1990	Law Court records – Sierra Leone***	Electrical Failure
1984	Project Centre – Agricultural Development Bank*	Fire – gas lantern explosion
1996	Training School – Agricultural Development Bank*	Old electrical wiring and fittings
1999	Koforidua Secondary /Technical –Ghana*	.
1999	Suhum Secondary /Technical – Ghana*	.
1999	New Juaben Secondary School – Ghana*	.
1999	St. Louis Training College – Kumasi – Ghana*	.
1999	Plantation Development Limited Gunnyer – Wa- Ghana*	.

TABLE 2 shows Library and Institutional damage by fire disasters

SOURCE\* National Disaster Management Organization File (NADMO) (1999)

\*\*Buchanan (1988)

\*\*\*Alegbeloye (1993)

Table 3 shows Library and Institutional damage by floods and rainstorm disasters

DATE	INSTITUTIONS	CAUSES
'2	Pennsylvania Libraries/archives	Flood/water
175	Case Western Reserve University of Cleveland	Floods Water by construction
178	Stanford University Library	equipment
182/83	Regina City Hall	
186	Los Angeles Library	
187	Nigeria Federal Ministry of Education Library***	water damage through hosing
188	Nigeria Forestry Research Library***	Leaking roof
190	National Library of Nigeria***	Heavy rains
189	Record Centre-Sierra Leone***	Flooding through renovation.
15th Mar. 1999	Peki Secondary School. Administration Block/Library*	Heavy rains
15th Mar. 1999	Abusakwa State Secondary School-Ghana*	Heavy rains
15th Mar. 1999	Asesewa Senior Secondary School - Ghana*	Rainstorm
15th May. 1999	Fire Academy/Training School - Ghana*	
15th Apr. 1999	Koro Junior Secondary School - Ghana*	Rainstorm/flood
" "	Piina Snr. Sec. School-Ghana*	s
15th May. 1999	Chananchangy E P. Primary Sch.- The Library at Chereponi*	



13th May, 1999	Saboba Secondary School – Ghana*	
13th May, 1999	Savelugu Snr Secondary School-Ghana*	Rainstorm
13th March, '99	Asokore Hamdaniya Junior Secondary School.-Ghana *	*
13th March, '99	Kofondua Boys Vocational Training Center – Ghana*	*
17/27 Feb. '99	Yamfo and Susuanso Schools – Library Books*	*
April, 1999	Asamankese Secondary School*	*
January, 1999	Winneba Anglican Junior Secondary School*	*
23rd Mar. '99	Adeso Methodist Junior Secondary School*	*
15th/Mar. 1999	Anfoega Glenkor Junior Secondary School*	*
13rd June, '99	Akomandan Methodist Junior Secondary School*	*
13rd June, '99	Big Ada Methodist Junior Secondary*	*
13th June, '99	St. Louis Secondary School*	*

TABLE 3: shows Library and Institutional damage by floods and rainstorm disasters

SOURCE \*\*\* Alegbeyele, 1993 \* NADMO File, 1999.

Previously, Tables 2 and 3 show sufficient evidence that such calamities tend to disrupt essential services and therefore appropriate measures need to be put in place if wanton

struction of life, equipment and valuable collections have to be avoided. The fact that it be accepted by librarians and others responsible for safeguarding the records of heritage is that "it can happen to you." When it does, in addition to the threat of loss of information in books and other collections in a library, there are the inescapable heavy costs which are seldom fully regained from insurance policies in those instances when the collections are "protected" by insurance. Disasters can result in loss of jobs, sometimes personal injury, and even loss of life. A major calamity could require millions of dollars for the repair and restoration of the collections over and above costs for building repair and general maintenance.<sup>8</sup> Hence disaster management become a crucial task for both librarians and archivists.

#### DISASTER MANAGEMENT

Disaster management according to Carter (1991) is essentially a dynamic process encompassing the classical management functions of planning, organising, staffing, directing and controlling. It also involves many organisations which must work together to prevent, mitigate, prepare for, respond to and recover from the effects of disaster. Carter further defines disaster management as "an applied science which seeks, by the systematic observation and analysis of disasters to improve measures relating to prevention, mitigation, preparedness, emergency response and recovery."<sup>9</sup> Harvey (1991) defines reaction in his definition of disaster management. Important as this definition is, in my view it presupposes the observation of actual occurrence of disaster, its analysis and the improvement of measures. A slight modification to the above assumption is necessary in view of the fact that, the identification of potential hazards is a prerequisite to effective mitigation of adverse consequences of disasters.

n and Matthews (1996) in their definition of disaster management aptly include disaster control planning and broader issues such as risk assessment, training and response. This makes it much clearer to ascertain what to consider when embarking on the process of planning for disasters. Collaborating their findings with other surveys, n and Matthews identified four (4) essential components of disaster control planning process in libraries. These stages are prevention, preparedness, response or reaction, and recovery. As a model each of the above stages is discussed with reference to what is practiced in libraries that have disaster plans.

Harvey states that a disaster plan is an essential element of preventive preservation. It offers the best protection against devastating impact of disasters by making an attempt to minimize the likelihood of them happening. He claims it is a straightforward preservation measure to plan and implement in a library. Whereas Carter, Eden and Matthews took consideration of the safety of staff as well as the collection, Harvey on the other hand, mentions that a disaster plan does not concern itself with the general emergency procedures for handling situations that threatens the safety of the people in libraries. He mentions that, these procedures are generally developed in conjunction with other organizations, for example, the fire brigade or campus emergency services etc. The disaster plan therefore recognizes that these emergency procedures for people exist and follows up on them. It is a plan that comes after the safety of the library's staff and users have been assured, and relate more to the safety of the collection. This position is interesting as it sounds would not augur well for a library which does not have any disaster plan and may be thinking of having one. As a better

alternative, a composite plan that takes emergency procedures as well as the safety of users into consideration is more desirable to avoid fatalities during emergencies.

Chanana (1988) advocates for a written plan and says a written plan is the single most important step in preparing for disasters. First, such a written document acknowledges that disasters are possible, and that there is a commitment on the part of the organization to accept responsibility in a sensible and logical way. Second, preparation of a written plan eliminates panic, assures proper decisions, reduces the damage to the organization, and limits the cost of recovery. Third, a plan consolidates ideas and provides step by step instructions, which are clear and easy to follow for anyone to use.<sup>10</sup>

Land and Evans caution that "too much attention given to disaster-proofing of the library may be as wasteful of the library's human resources as too little is dangerous to material resources. A balance must be struck."<sup>11</sup> From another perspective Leighton (1999) agrees that it is always useful to have a disaster control plan but at the same time warns that it is difficult to plan for a specific event for no one can accurately predict the type of disaster and when it could occur. Leighton further states that a factor in a library's ability to cope should come in the form of goodwill from staff, neighbours and friends.<sup>12</sup> This, no doubt, is a good suggestion to promote some sort of cooperation between libraries.

Leighton states "don't let the magnitude of disaster recovery planning scare you or turn off the subject. It doesn't have to be done all at once. There are many options

on to you in developing your company's plan. It is better to do something rather than nothing. Don't fall into the "it can't happen to me" syndrome.<sup>13</sup> This undoubtedly is a good advice library administrators must not ignore. For, it is said, disaster has no warning and no mercy for time.

## 1 The Disaster Management Plan

A Disaster Management Plan is essentially a decision to undertake steps to prevent, mitigate and protect resources that in the custody of librarians and archivists from the adverse effects of disasters. Importantly, the plan can be divided into two (2) phases. The first phase is the planning process that entails, the risk assessment of collections, identification of hazards, set priorities, and gather facts. The second phase is the process of putting the results of the first phase into a written disaster plan or state that can be used or followed during and after disasters.

The key elements in disaster management plans are discussed below.

## 2 Risk Assessment

Risk may be considered as the probability and consequences of unwanted events or socially events which result in hurting people or damaging property or environment. It is therefore to do with exposure to danger and more significantly to mischance. Risk assessment therefore involves estimating disaster probabilities as well as prevention and recovery costs. This indicates the various risks to which an organisation may be exposed. The procedure of risk identification and assessment is highly technical and therefore may require other experts apart from librarians.



and Matthews' study revealed that librarians' knowledge was most deficient in risk assessment. That is, they lack knowledge in matters relating to the state of their buildings, computing systems, equipment and electrical systems and consequent risk posed to people, collections, buildings and themselves.<sup>14</sup> Consequently, experts are commissioned to undertake this exercise.

### **Prevention**

Great importance is attached to the concept of prevention. The old adage that prevention is better than cure is far absolutely important in disaster planning as it is for other aspects of human life. Prevention aims at taking steps to avoid potential disasters that cause disasters and minimizing the risks that they may pose to buildings, people, facilities, collection, equipment and fittings. Harvey adds risks to staff. Regular inspection of buildings and equipment are essential in order to avoid hazards that may lead to disasters. Such inspections and potential hazards are recorded, and actions are taken to advise of any repair or changes that are needed. Fire detection and alarm systems are a major issue, likewise storage of valuable items and documents. Surveys have indicated that storing such valuable collections should be done in such a way that during disasters easy accessibility for retrieval is ensured. This requires a systematic process of preparedness.

### **Preparedness**

Man (1981) points out that, preparedness indicates thoughtful planning and actions in advance about how emergencies will be handled. This is an indication that after how carefully risks are assessed and preventive measures taken, and no

“The more diligently staff are in carrying out their responsibilities, disasters do occur.”<sup>16</sup>

Jobeye recalls Murphy's Law which states “if something can go wrong, it will”<sup>16</sup> before constant preparedness is needed. Consequently, disaster control planning is indicated for libraries. In such context, preparedness means being in the state of alertness and vigilance, so that, when a disaster does occur, the organization is not dozing off but is, indeed in a position to react responsibly, maturely and rationally.<sup>17</sup>

Guidelines for Archives and Libraries (1993) listed some key procedures that must be followed. The list of valuable items that must be salvaged, and their locations must be clearly marked and prioritized, produced and acted upon during emergencies. Disaster control officers, that is, persons responsible for drawing up the disaster preparedness plan and enforcing its use must liaise and negotiate with staff and other departments in and outside the organization to ensure effectiveness of the plan.

Another area considered is staff training. This must be targeted first at those who would be heavily involved in a disaster response, and those who may be affected during the disaster. Awareness of responsibilities and roles during an emergency; locations of assembly points, evaluation routes and any emergency equipment available should be highlighted. Simulation exercise is undertaken in readiness for disasters or any emergency situations. In addition, suppliers and supplies of emergency services and equipment, a list of salvage and recovery experts of other emergency services and equipment, such as dehumidifiers, deep freeze storage and transportation are considered.

Information flow during emergencies is a crucial area that must be handled by an experienced staff member

arrangement between staff and media is important to ensure a smooth and orderly process. This leads to response and reaction

### Reaction and Response

These two terms are used interchangeably as they in fact mean the same procedures in an emergency. While Harvey and Alegbeleye call this stage response in their separate works, Eden and Matthews call it reaction, according to them, reaction is naturally about putting the preparations which have already been made into some kind of response form. Actually, a procedure to be followed when disaster has occurred. Such procedures entail raising of alarm, assembling personnel; making the disaster site safe (evacuation of personnel), preparing a preliminary assessment of damage, briefing salvage teams, securing the disaster site; and removing, cleansing, and packing and transportation of damaged materials. In the general disaster reaction and response stage rescue of victims are considered. Alegbeleye mentions that the response team comprising staff and outside experts constitute the Disaster Recovery Team in most cases

### Recovery

As has been shown that this stage usually takes a lot longer time than originally thought. Harvey notes that the recovery stage is that of establishing and carrying out a programme to restore both the disaster site and the damaged materials to stable and safe condition.<sup>16</sup> The Disaster Recovery Team takes charge to salvage and restore



fire or water damaged materials. The long, medium, and short-term measures in the plan are reviewed and followed. Considered also, are temporary services, accommodation and storage facilities, and staff counseling insurance and finally the review of the disaster control plan. According to Alegbeleye this is better achieved through the formulation of policy guideline. This is necessary as hindsight may reveal the weaknesses in the disaster control plan.

While there has been an increase in disaster management research in Britain and America during the 1980's and 1990's, it is still a sorely neglected field in Africa.<sup>19</sup> There is thus a general paucity of studies on disaster management in Africa and for that matter Ghana. Therefore, most studies undertaken in this aspect of library management have tended to be buried under preservation management. Most often these studies have focussed largely on the slow-creeping disasters such as biological, chemical mechanical and pollution.

Although the emphasis on disaster management is quite negligible, it is worth mentioning few studies undertaken that briefly mentions or borders on natural disasters in libraries locally. Dandzo<sup>20</sup> (1981), Badu (1987)<sup>21</sup> and Oforu-Tenkorang(1987)<sup>22</sup> respectively conducted studies on preservation management in Academic Libraries such as Balme Library, University of Science and Technology Library, and Cape Coast University Library. These projects submitted to the Department and Archival Studies(DLAS), touched on natural disasters though their focuses were on slow-creeping disasters. In their conclusions, they recognized the threat of fire disasters as resulting from the lack of such facilities as fire alarms, smoke detectors and fire

extinguishers. Ofosu-Tenkorang observed the state of unpreparedness and uncertainty among the library staff as to what to do during such emergencies especially in case of a fire inferno. In the light of the above concerns, he suggested a contingency plan for the Cape Coast University Library. Other recommendations range from the provisions of adequate facilities for fighting fires, and having a good system of salvaging water-damaged materials in place to building new libraries to ease congestion in the libraries. However, there was no mention of having a disaster management plan. Such obvious lack of plan could result in chaos in the face of minor incident. The present study is an attempt to highlight on the need for a disaster management plan, and to examine the measures that are in place in the Baime Library to forestall any emergencies in the Library and to suggest measures that can be incorporated in any disaster plan of the Library.

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## CHAPTER THREE

### 3.0 BRIEF HISTORY OF THE BALME LIBRARY

The Balme Library was the Central Library of the University College of the Gold Coast, now University of Ghana. The Library was established in 1948<sup>1</sup> together with its parent institution on the premises of Achimota College. This was on the basis of the Reports of the Asquith Commission on Higher education and the Elliot Commission on Higher education in West Africa.<sup>2</sup> In 1959 the Library moved with the University College of the Gold Coast to its present building, designed to accommodate 350 readers and 250,000 books.<sup>3</sup> The library provided a number of reference works and textbooks of advanced nature. The initial 6,400 volumes provided the nucleus of essential books for the University.

The library was named after the first Principal of the University, Professor David Balme, who died on February 23, 1989, at the age of 76 in Britain.<sup>4</sup>

The library had seen a number of executive heads. The first was Miss E. Fegan, who was succeeded by Miss Walker. Mr E. Y. Amedekey who died in 1972 succeeded Mr John Dean. Mr J. K. T. Kafe acted for three years before Mr J. M. Walpole was appointed as substantive head in 1976. Walpole left in 1983 and Mr Kafe became the librarian until 1991 when he retired from the services of the University. Mr S. N. Amanquah, the deputy librarian acted from 1991 to 1993 when Mrs C. O. Ksiedu, (now Professor Ksiedu) was appointed in 1993 as the librarian for the library. She retired in 1997 and Mr S. N. Amanquah is acting as the University librarian to date.

### 3.1 AIMS AND OBJECTIVES

The University of Ghana, like all other Universities, concerns itself with the interpretation of knowledge and imparting that knowledge through teaching and research. In order to fulfil this broad objective or aim, the library follows the specific objectives below:

- To acquire all printed materials required by lecturers and students at all levels, pursue their courses, to provide adequate materials to enable research work to be carried out successfully.
- To assemble a comprehensive collection of bibliographies, abstracts, indexes, catalogues and other useful reference materials for students, research workers and library staff to ascertain what is available throughout the world in a given subject fields.
- To provide services in the form of structure in terms of personnel and departmental organisation necessary for the attainment of the determined objectives<sup>5</sup> reference, and inter lending loans.<sup>5</sup>

In recent years however, the introduction of modern technology has expanded the services to include photocopying, searches on the Internet; e-mail services and compact disk read only on memory (CD-ROM) facilities

### 3.2 STRUCTURE AND ORGANIZATION

Organisation concerns itself with the arrangement of the structure in terms of personnel and departmental organisation necessary for the attainment of the determined objectives<sup>5</sup>. Organising brings together the decision-making and operational components of institutions so that work can be accomplished most efficiently.

Institutions normally provide the necessary relationships that would ensure both vertical and horizontal co-ordination between work units. The purpose of this, in the library context, is to combine people and other resources into a manner that would help the various work units to work together to achieve the overall objectives of the library.

### 3.3 THE GOVERNING BODY OF THE LIBRARY

The Balme library is a model of Library Organisation and administration for all the University libraries in Ghana<sup>7</sup>. The library is managed by the Librarian assisted by the Library Board. The Library Board is composed of the following:

- The Vice – Chancellor or nominee (Chairman)
- The Librarian
- A Sub-Librarian (in attendance) as a secretary
- Representatives from each Faculty Board
- Two members appointed by the finance committee
- One student Representative
- Registrar (in attendance)
- Finance (in attendance)

The Library Board chaired by The Vice Chancellor therefore supervises and directs the policies of the library and any other matter that requires its attention.

### 3.4 FINANCE

The life wire that keeps every organisation in motion is money. The principal source of finance at the library is the portion of the funds (subvention) provided periodically by the Central Government through the University administration. The major expenditures are



personal emoluments, purchase, maintenance and repairs of equipment and furniture and other hardwares and library materials. Though library materials were prominent on the list previously, now it engages the least attention among the library expenditure.

### 3.5 STAFFING

The basic requirement of any organisation is the total complement of staff needed to operate the services decided upon by the governing body. It is said that, "an efficient and busy library will depend considerably on the calibre of staff that are employed"<sup>8</sup>

The size and complex nature of the library requires well trained staff adequate at all levels to operate it effectively. The pattern of staffing varies a lot according to the type of library. In an academic library, the large volume of stock to be processed, shelved and issued requires the employment of more non-professionals as against professionals.

Balme Library has three categories of staff. They are:

- Senior members (professional staff),
- Senior Staff who are mostly sub-professionals, library assistants, administrative and technical assistants who have earned promotions from their junior grades and also university graduates.
- The Junior Staff consists of junior library and bindery assistants, clerks and janitorial staff.<sup>9</sup>

Presently, the total number of staff stands at 108. This includes 13 senior members, 32 senior staff and 63 junior staff.

### 3.6 THE BUILDING

The location of a library building must allow for easy expansion either vertically or horizontally. The Library building was built into a two storey – a ground floor and a first floor with basement and attic for storage purposes. (See diagram I & II p 108-109)

The library cannot expand either horizontally or vertically because of the architectural design. On the other hand, for easy accessibility to users and off loading of library materials, it can be said to be adequate. From the first floor, through the ground floor the library opens into four courtyards.

### 3.7 DEPARTMENTS OF THE LIBRARY

The building is partitioned on library functions and services. The Ground Floor comprises, The Catalogue Hall/Reference Issue Hall with the Periodicals Hall above. Three wings flank these, each containing a reading room on either side. Behind these are the administrative offices. These are the librarian's offices; the Orders/Acquisitions Department; Cataloguing Department; the Periodicals Department; the Electronic Support Unit and the Maintenance office. On the ground floor towards the circulation desk is the Arabic library, the United Nations Depository Library, The Braille library on the East wing, and the "Z" room, the Atoms For Peace and the Inter library Loan / Document Delivery Section on the West End of the library.

On the first floor are located the Africana Library; The World Bank Library; The Rare Book Room and the CD ROM office on the East Wing. On the West Wing are the Student's Reference Library (SRL) and the Reserve Collection.

### 3.7.1 The Orders/Acquisitions Department

In order to meet the informational needs of all categories of readers, this department is charged with the responsibility of ordering and acquiring all kinds of relevant materials. These are acquired through direct purchase, donations and exchanges, from book dealers, organisations and individuals from internal and external sources. In the face of financial difficulties donations become the most common means of acquisition in the library. These materials range from books to non-book prints. They are checked on arrival and processed manually by accessioning and are later sent to the cataloguing department.

### 3.7.2 The Cataloguing Department

The primary objective of the cataloguing department is to provide an efficient tool that will serve as a key to the use of the resources of the library. In order to ensure easy accessibility a number of schemes are used. The Library of Congress classification scheme is used and materials are catalogued according to the AACR2 Rules. The library maintains both the Author/Title and the subject catalogues.

The processes are done manually, however, as a result of modern technology a number of innovations have taken place. In all, there are 5 computers, the server and one printer to facilitate processing of materials. The windows and the three (3) exits to the unit have been barricaded for security reasons. This section accommodates the largest number of staff.

### 3.7.3 Periodicals Department

Previously, the periodical section was responsible for the acquisition of 5,000 titles of journals annually.

However, as a result of factors such as financial difficulties, and the introduction of new technologies, activities in this section have almost grounded to halt. Now very few titles are received mostly through gifts.

### 3.7.4 Readers' Services Department

The functions of the Reader's Services department involve identification and registration of users. The personnel perform various reference functions such as direct and indirect assistance to meet the needs of the library user. Library catalogues, which are the keys to the resources of the library, are located in this section. This section also includes the circulation desk where materials are charged and discharged in and out of the library.

Other services include the collection of bags, coats, and umbrellas, which are to be left behind as readers enter the library

### 3.7.5 The Technical Services Unit

This unit though not located in the main library block, is one of the important departments of the library. The unit provides binding, printing and photographic services to the university community and researchers all over the world. All worn books (especially) and new ones with weak bindings are restored and repaired by this section. All old newspapers and thesis of students are bind by this unit.

### 3.8 SPECIAL COLLECTIONS AND SERVICES DEPARTMENTS

Since its establishment, there has been tremendous increase in the library's resources and facilities. The initial collection rose to over 400,000 volumes and there is the introduction of computer technology which affected the increase in facilities and services. More categories of special collections had to be put in place to meet the divergent interests, of the increasing student population which now stands at 10,000.

#### 3.8.1 The Student's Reference Library (SRL)

The SRL was created in 1975<sup>9</sup> to satisfy the needs of students so that they can have easy access to books. Multiple copies of textbooks on all subjects are stored here. Each student is allowed to borrow one book from this library over the weekend. Though the whole collection is for reference purposes, a section is on permanent reserve.

Within the SRL is located the Reserve Collection. This collection comprises books, periodicals, articles and photocopies. Materials are reserved for a number of reasons on the discretion of the librarian because the book is either the only copy or is out of print and many students have to have access to it.

Requests for the reservation of books are also received from lecturers and students. Apart from the library's own materials, personal books from lecturers are kept here for consultation. Materials from this section are taken on short loan i.e. they are loaned out for few hours during the day. These are to be returned before the close of the day. In 1988<sup>10</sup>, the Balme Library became partially automated. The automation process started in this section. The University Administration donated Wang computers (PC) to the

library. The computer was used in this section to store information on materials in the reserve collection and on library users. Users are allowed direct and immediate access to the stored information through author, title, and subject searcher

### 3.8.2 The Africana Library

The Africana Library was established in 1963.<sup>11</sup> It is located on the first floor of the library building. The importance of the building up of this collection was in recognition of the place of African Studies in the curriculum of the University in 1961. Such a move was to meet the research demands of researchers both locally and internationally. Materials are specifically on Africa. They are from purchases, donations and gifts from individuals and organisations and publishing houses. Just like the SRL, the collection is for reference only

Within this section is the Rare Book Collection. This is a reference collection and is not used outside the premises of the library. Some of the materials are rare in nature and presentation. They contain wealth of wisdom over the centuries. Some of the collections date back to the 14th century. Others are valuable speeches and biographies of all Heads of States of Ghana and other African States. These materials are under strict supervision and can only be used within the library. This is against the backdrop that rare and special collections are scarce, difficult to replace and are of significant value in cultural, historical and associations or other terms. Some of these works were collected in Dutch, German, French and translated into English and kept in original works.

### **3.8.3 The United Nations Depository Library**

In 1963,<sup>12</sup> The United Nations Library was officially designated as a depository library for all publications emanating from the United Nations Systems. The library is located at the East Wing of the Ground Floor of the Balme Library. Opposite the Z 'Room Library'. The collection includes publications of specialised agencies of the United Nations. The Food and Agricultural Organisation (FAO), World Health Organisation (WHO), World Meteorological Organisation (WMO) and The United Nations Education, Scientific and Cultural Organisations (UNESCO) – The United Nations Industrial and Development Organisation (UNIDO) and many other publications. These collections are mostly research reports and are in softcover bindings. These again serve as supplements to the books in the main collection and other regular periodical titles.

### **3.8.4 The Arabic Library**

The Arabic Library was set up in 1963 with books donated mainly by Arab Countries. These books help in the teaching and study of the Arabic language in the University.

### **3.8.5 The Braille Library**

The Braille Library was donated to the Balme Library in 1989, by the Soroptimists International Club of Accra. It serves the visually handicapped students. Materials available include books in braille and other equipment used by the students to facilitate their academic works. The library is located at the south eastern end of the library in one of the alcoves meant to be as store

### 3.8.6 The World Bank Library

In 1986<sup>13</sup>, the Balme Library was officially designated as a depository library for World Bank publications. This collection is at the East wing of the Africana Library formerly a processing room for the Africana library. The collection includes technical reports, discussions and working papers, annual reports country studies and statistical reports. These publications cover topics such as general development, agriculture, economic issues, health, women and development education and the environment

### 3.8.7 CD – ROM Services

The CD – ROM Services is a new service introduced in the library in the 1990's. In May 1994 – the American Association officially initiated ROM for the Advancement of Science (AAAS) and the International African Institute. The 3 – year AAAS and CD-ROM pilot project aimed at supplementing the dwindling journal subscriptions in some African libraries in order to facilitate research. Balme library was among seven African Universities who benefited and as one of the areas selected for the project. The project is funded by Carnegie Corporation and The Ford Foundation and it is coordinated by the AAAS<sup>14</sup>. This optical disc stores information as CD – ROM databases and covers many subject areas. Though open to all students, the emphasis is on the need to aid research work of faculty members and graduate students in the university. The CD – ROM workstation is located behind the south wing of the Africana Library in the microfilm Room. There are 4 computers, and one Dos Matrix printer in this room. It is air-conditioned.

### 3.8.8 Electronic mail (e-mail) Services

In addition to the CD – ROM project, is the Electronic mail Service (E-mail). E- mail is one of the basic services of the internet services. The service encourages users to communicate with people in and outside their environments. As one of the fastest means of communication, it is done through the computer. The service is open to the general public as well as students and the members of staff. Apart from snail mail and fax, the library reaches its customers and the outside world by this means. Other universities in Ghana as well as Council for Scientific and Industrial Research (CSIR) and other points are reached by this facility. This facility is located in the Electronic Support Unit. There are 3 computers and 2 printers in this room.

### 3.8.9 Inter-Library Lending And Document Delivery: LLL/DD

The Inter-library lending and document delivery service is a new package of an old library service of inter-library loans. The service formerly done manually now allows users to browse the Internet to search for materials. Materials identified through the Internet are either down loaded through the net with the right search engines or are ordered through the snail mail for users. This service complements the library's effort in the provision of information and literature needs of the faculty members and students. It provides one of the fastest methods of obtaining current information from the world. The service is located at the west wing of the library. There are two (2) computers, a scanner and a printer in the office with an air conditioner.



### 3.9 THE COLLECTION AND STORAGE

The library since 1948 continuously acquires and stores all kinds of library materials in order to meet the objectives of the university's informational need. These acquisition processes have been affected by the current trends in information provision. The library, besides the traditional paper materials, acquires other materials such as microforms (there are microcards, microfilms and microfiche), CD-ROM, diskettes and other photographic materials. The nature and storage of these materials vary from type to form. Each of the type poses its own problem in the library and these problems can be traced to the basic materials that are used in their manufacturing. The components of the library materials are further affected by the prevailing environmental conditions in and outside the library. Hence, librarians endeavour to create the utmost conducive environment for the materials in order to promote longevity and to maximise use.

#### 3.9.1 Books

The book or paper materials constitute the largest and the basic stock of the library's collection. These are in the form of printed books, manuscripts, pamphlets, maps, drawings and periodicals. Despite the rapid rise in the popularity of information stored magnetically or electronically as digital data. Balme library continues to acquire large volumes of paper materials. As a big library, paper materials are located on almost all the floors of the building. The regular are open to users for borrowing purposes. These are located at the East stack and the mezzanine above. Other book materials are stored in the Africana, Student's Reference Library and the "Z" room.

### 3.9.2 Periodicals

Periodicals are very important items in a library's collection as these perform the role of supplementing the information in books. The information tends to be most basic and current in research work. Periodicals constitute the second largest of the library's collection. They comprise - journal, newspapers, past questions, annual reports, newsletters, bulletins and other world magazines. The most current are stored in the periodicals Hall after processing from the Periodicals Department. The bound volumes are shelved at the West Stack and Mezzanine above.

The newspapers, thesis, and back copies of some periodicals are stored in the Basement of the Library. Since periodicals are for reference only, they are used mostly in the library building.

### 3.9.3 Microforms and other non-book materials

All library materials, in whatever medium require careful handling in order to prolong their usage. Microforms (only microfilm microfiche and microcards) are of the non-paper material that are heavily represented in the library. Others in this category are diskettes, CD-ROM's compact disc drives. These are continuously being acquired to emphasise and to reflect the current technological trends in information provision. These are stored in the Microfilm Room, now the CD-ROM Services Station. The rest are stored in the basement. Because of their special nature, these storage areas are air-conditioned to protect the material from deterioration.

### 3.10 EQUIPMENT

The library in its constant effort to widen its scope of automation, presently has 22 personal computers (PC) and accessories in the library. Each of the PC is with its uninterruptible power supply (UPS). There are 2 photocopy machines in the library. Other equipment include air-conditioners and electric type writers.



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#### 4.0 POTENTIAL DISASTERS AND THEIR CONTROL MEASURES IN THE LIBRARY

The previous chapter emphasised the importance of the library and the significant role it plays in the furtherance of the objectives of the University of Ghana. In addition to the realisation of this unique role, the librarians also recognise the fact that library materials by their complex nature are susceptible to various types of hazards or disasters in the library. Some of these are external and internal. In order to prevent disasters, to reduce their impact, and to plan appropriately, it is imperative to identify such potential hazards or risks. The identification of such hazards and their risks forms the basis for good disaster preparedness planning.<sup>1</sup>

The importance of this position is not lost on librarians. Attempts are made to identify such risks and some amount of control measures are put in place to forestall any disaster whether these are from external or internal sources, or whether they are acute or slow-creeping disasters. It must however, be admitted that most of such measures tend to target slow-creeping disasters such as chemical and biological deterioration rather than the acute disasters such as sudden fires and floods. Both the acute and slow-creeping disasters are mentioned in this chapter, and though much emphasis will be put on fires and floods.

Available records and interviews of the Library's administration have shown that, the importance of protecting library materials has been one of the priorities of the library since its establishment. From the library's standpoint, the prevailing practice is to

attempt to prolong the useful life of the materials in their custody through the following

means:

- Good housekeeping which entails daily shelving, dusting of books and annual general cleaning. Temporary staff employed during the long vacation undertake this exercise
- Once in every three (3) years and when it becomes necessary, the library is fumigated against the attack of insects as well as other forms of biological deterioration
- In order to control deterioration due to chemical reaction as a result of fluctuations in temperature and humidity, air-conditioners have been installed especially in areas accommodating computers and microfilm materials. Stack areas have enough windows to ensure adequate ventilation.
- Worn-out books and mutilated materials receive care and repair through binding and total restoration processes.

Though the above basic routines are continuously observed, some amount of hazards still exist. This is because of improper maintenance of electrical equipment and the building, lack of safety facilities, and refurbishing and renovation activities which are in progress in the library. In addition to the above reasons, the effects of the harsh tropical climatic conditions as well as enemies of paper-based documents such as booklice and bookworms cannot be overlooked.

In order to identify the potential hazards, experts were invited by the researcher to undertake the exercise. These experts include officials from the National Disaster Management Organisation. The team, comprising the following experts, a Civil and

Structural Engineer, a Geologist, two Fire Service Officials and a Hydrometeorological Officer was conducted round the library by two members of staff.

The checklist recommended by Sally Buchanan for the conduct of these types of investigation was followed. She divided such assessment into two parts, the External Hazard Survey, and Internal Hazard Survey. The External Hazard Survey includes the examination of the following.

- Building
- Roof
- Drains, pipes and gutters
- Windows
- Trees
- Landscaping: planters, garden beds,
- Water hazards: irrigation, fountain, fire hydrants, natural drainage
- Fire hazards: bushes, outside fire protection and location.

The Internal Hazard Survey covers the examination of the following areas.

- Ceilings
- Walls
- Windows
- Electrical Systems – sounds, adequate outlets, multiple plugs.
- Pipes and Plumbing – joints, valves, and drips.
- Heating, ventilation and air-conditioning systems
- Fire detection equipment
- Fire suppression systems
- Water detection equipment



- Security Alarms
- Trash, house-keeping, stack areas and shelving<sup>2</sup>

#### 4.1 THE BUILDING

The building, as mentioned in an earlier chapter, is a two-storey structure located on high ground. Since the whole university is situated on earthquake faultline, provision was made during the construction stage of the building to protect it from the hazards of earth tremors. An earth tremor recorder was installed in the basement of the library for so many years but it was removed when it was no longer functional. The external environment is safe in terms of accessibility during disasters, as there is enough space around the library. Drainpipes and gutters have been adequately provided and located in such a way as to avoid flooding. There are enough windows and corridors on all floors. The trees around are periodically pruned to avoid any external damage to the building. The landscaping according to the experts were well done opening to four courtyards. The hedges and garden plants as observed were however too overgrown and this could attract insects, reptiles and rodents into the library.

#### 4.2 FLOODS/WATER HAZARDS

No external water hazards exist due to the location of the building which is on high ground, far from any natural drainage. However, internal assessment indicates that water hazards exist. The location of the pipelines in the basement, and in some offices as well as traces of leakage from the roof onto the walls confirms this observation. Further records of water disasters reported in the library in the 1990s underscore this assertion. The following extracts from correspondence between the library

administration and the ... office and the Estate Organisation are approached to bring the thrust of the matter to the fore.

17<sup>th</sup> July 1991

\* The last heavy downpour of rain has shown that a number of places in the library leaks badly especially in the roof ... \*

10<sup>th</sup> July 1995

\* \_\_\_\_\_ The heavy down pour on the night of 3<sup>rd</sup> July, 1995 flooded the top floors of the library. Books, equipment and furniture are at risk ... The library Tower Clock – lost one face, it was blown off. Improvisation was not effective hence the rains of 3<sup>rd</sup> July, 1995 seeped through the opening to affect materials in the library\*

21<sup>st</sup> May, 1996/3<sup>rd</sup> June 1996

\*The Tower is leaking BADLY In addition to books getting soaked, there is a more serious danger of fire outbreak. Water collects in a number of lamp holders and shades before pouring down profusely. Remedial actions to be taken to save books and building. It is URGENT\*

12<sup>th</sup> June 1997

\* Yesterday's and today's rainfall have flooded the top floors of the library, books, furniture and other items are at risk....There is also the ever-present danger of fire-outbreak because of some the water sipping through electrical conduits. ...\*

3<sup>rd</sup> June, 1999-

Roof leakage at two places in the library was reported<sup>3</sup>

The correspondences show that some form of repair is undertaken this has not been effective as the problem keeps recurring every year. The situation, though not reported, in some cases, poses safety problems to both workers and readers as electrocution can occur in the situations described in the reports of 21<sup>st</sup> May, and 3<sup>rd</sup> June, 1996 and 12<sup>th</sup> June, 1997. The control measure is in each case, to report to the Development Office and the Estate Organisation to repair the damage. However, administrative bottlenecks prevent taking prompt action. In such situations, the affected parts are merely closed to public use until such time that weather conditions are favourable.

#### 4.3 FIRE HAZARDS

Generally, fire is a serious potential hazard to all librarians and library materials irrespective of where they are located. Identified causes of fire in libraries have been attributed to faulty electrical wiring, electrical short circuiting, and when heat generating appliances are left unattended for long, and flying objects from neighbouring fires. Examination of the external environment of the library did not reveal much in terms of potential fire hazards. The internal assessment however revealed that a lot of fire hazards exists as a result of two main contributing factors. These are lack of space and innovations occasioned by computerisation and the use of other modern gadgets. Important as computerisation is, it nevertheless takes up more space than the library has at its disposal.

Upon examination, it was observed that there are four fire-exits leading from the first floor through to the ground floor to the courtyards. These fire-exits are locked permanently. All fire-conduits were originally buried in the walls. By the nature of the original wiring and the quality of the concrete walls, it is impossible to break through the walls to do any new wiring, repair faulty switches, or replace worn-out electrical wires. Consequently, surface wiring was resorted to, in order to achieve the desired automation process. As a result of this situation, it was realised a potential fire hazard exists as the library is now using electrical gadgets which were not originally taken into consideration when the electrical inputs were being planned for the library. The most likely areas that devastation may be immerse in terms of lost of resources in case of fire outbreak are discussed below:

#### 4.3.1 Orders/Acquisitions Department

The office space here is very limited in terms of the volume of work and the number of the people it is currently accommodating. The office is choked with boxes of books yet to be processed. The congestion is such that there is hardly any room for movement. In all, there are six (6) personnel in this office. Electrical wirings are hanging and meters are left open as a result of improper connections which make it impossible for doors to be closed. Further inspection reveals that boxes of books have blocked the other exist completely; in addition to this hazardous situation, there is not a single fire extinguisher in the office. The two windows have been strengthened with burglar-proof to ensure the safety of the computer and other accessories.



#### 4.3.2 The General Office

This includes the librarian's office and the administrative office. Exposed electrical and telephone wires were seen. There are no fire extinguishers here either. Walls are cracked and according to the experts this could be dangerous during minor earth tremors. Windows are barricaded to safeguard the computers in the office.

#### 4.3.3 Cataloguing Department

This is one of the main processing rooms in the library. It holds the largest number of staff and other resources. The office is full of books, which is normal as the main processing room, as well as computers and other accessories. In order to ensure the safety of equipment, two (2) of the three exit doors from the main stacks and the corridors have been strengthened with burglar proof. The windows have been barricaded. Air-conditioners mounted on pillars on the corridors can be seen. These according to the team could cause fire, during minor earth tremor. There are no precautionary measures against fire in this department as indicated by the absence of extinguishers.

#### 4.3.4 The Electronic Support Unit – Office and Annex

Smoke traces were seen on parts of the ceiling, which are an indication of the existence of fire hazards. There are computers in this office and a lot of connections were made. There is no fire extinguisher in this office either.

The Annex is another section of the unit, which also deals with the configuration of computers in and outside the library. The main server is located here in addition to

computers. Fortunately, this section has the only functional fire extinguisher in the library.

#### 4.3.5 The Basement

The basement is one of the main storage areas for most libraries and the Balme Library is no exception. This area is a multi-purpose storage area for the library. Upon examination it was discovered that several items which have propensity to ignite during a fire outbreak are stored here, apparently for lack of storage space. Old newspapers from as far back as the 1940's; microfilms, theses and back copies of periodicals are stored here. Besides these, the main pipelines are located in the same room as well as the machines for the central air-conditioner. Another room in basement houses the main electrical transformer and electricity distributor, as well as some chemicals meant for the photocopying machine. The experts expressed grave concern about this situation and said that, it is a volatile condition that must be tackled with all seriousness. There are no fire extinguishers.

#### 4.3.6 PRECAUTIONARY MEASURES

At the end of this assessment, it was realised that the fire potentials far exceed that of all other potential hazards that exists in the library. In all, there are seven (7) fire extinguishers in the whole library and out of these, only one is functional. The rest are either empty or are very outmoded.

Similar exercise undertaken by The Earthquake Hazard Mitigation Unit of the Faculty of Science, Dept. of Geology in Legon, confirms the situation in the library. This exercise

which was undertaken in 1989 included the Balme Library and all essential premises on campus. The findings though ten (10) years old are still relevant in this direction. The findings were

"There is in most places a lack of fire-fighting equipment even simple and inexpensive equipment such as buckets with sand are seldom provided. Where fire extinguishers exists. They are often the wrong type and are not maintained and therefore become a hazard in themselves or at best useless. Secondly, there is the absence of First Aid equipment and a lack of understanding of the elementary rules and safety, fire fighting and first aid. Thirdly, emergency exits are completely blocked."<sup>4</sup>

#### 4.4. VANDALISM

Vandalism is most often the result of human problems such as theft; improper handling of materials either during processing use or demonstrations; mutilation and photocopying of materials in the Balme Library. It is difficult to establish the number of materials or books, which are either mutilated, or mal handled during the year. The sheer number of volumes of materials that are sent for repair at the Technical Services of the library as a result of wear and tear is a clear indication of the existence of the problem. In addition, the library itself becomes the target for attacks from both students and workers during demonstrations. Threats are received from both angles.

Another problem is that of risk of lack of space and inadequate number of books. Large numbers of students who rush to secure seating space for themselves and others thereby causing stampede, in some cases breaking doors and throwing registration



records into disarray. Such pressures are also extended to the retrieval of items from the shelves. In some instances whole stack of materials get strewn on the floor thus, damaging and shortening the life span of books.

Control measures against vandalism include strict enforcement of library rules and regulations and the installation of safety gadgets to ensure security of materials and equipment.

#### 4.4.1 Some library rules and regulations against vandalism

- Smoking is forbidden in all parts of the library
- Firearms and other offensive weapons are not allowed in the library.
- No seat shall be reserved by or for any reader.
- Any book recalled should be returned in 72 hours or fines shall be imposed after 3 days.
- Library staff shall inspect any items being taken out of the library.
- All readers must enter and leave the library through the Main Gate facing the University Square where they are searched by a security man.
- Readers may not enter staff offices except by express invitation by a staff.
- All borrowed books should be returned by the last day of the semester.
- Failure to return all books by the end of the academic year may result in examination results being withheld till books are returned
- Others are: rustication for 21 days

Dismissals

Suspension from university plus payment of any overdue fines

With the installation of computers, photocopiers, air-conditioners and other valuable equipment in the offices, it became necessary to provide adequate security. Therefore burglar-proofing was provided for the Administration block, which comprises the main office, librarian's offices, the Electronic Support Units, and the Photocopying room. Other areas are The Acquisitions, Cataloguing Department, and the Periodicals the Librarian's Office as well as the East and West Alcoves which house the Braille Library and the Inter-library and Document Delivery Office

#### 4.5 BIOLOGICAL DETERIORATION

Books are made of materials whose composition consists of substances, which encourage mould formation under certain conditions such as fluctuations in temperature and humidity. The substances also attract insects, such as bookworms, booklice, termites on one hand, rodents and reptiles on the other hand. From observation, it could be said that the general weather conditions in the tropics necessitate the formation and growth of fungi and mould that can be very devastating. A team of experts from the French Embassy on visit to the Balme Library observed the various forms of deterioration of the Rare African Reserve Collection. As a result of this concern a joint seminar was held in Ghana on the 22<sup>nd</sup>-24<sup>th</sup> of November 1993 on "Conservation of Rare Collection in the Balme Library". At the end of this seminar the following conclusions were drawn:

- Much of our priceless cultural heritage of publications is in great danger of destruction due to a near or total absence of conservation culture.
- There is general lack of awareness of conservation issues at both the professional and non-professional levels.



- There is crippling lack of resources, equipment and know-how for effective conservation
- There is urgent need to put in place a policy for addressing the above problems in the near future.
- The recommendations of the Seminar should be presented to the government for a policy to be put in place to address the problem.<sup>5</sup>
- The seminar yielded the necessary co-operation in two (2) directions:
  - Training of personnel for conservation
  - Provision of some equipment and restoration of some rare materials.

It also led to the formation of Disaster Preparedness Committee. The committee however ceased functioning after the first meeting.

Other conditions are that there are waterlog or pools of water permanently coming from the underground tank in the forecourt of the library. The hedges are overgrown and readers in the stacks leave food wrappers in the library. These conditions create a favourable environment for the proliferation of snakes, rats and mice. Unfortunately, these abound in the library.

#### 4.5.1 Control Measures

First and foremost, attempts are made to remove conditions that favour the growth of fungi by constant dusting, controlling temperature and humidity by the provision and installation of air-conditioners and ensuring proper ventilation through the provision of adequate number of windows.

Traps are also set in specific corners to trap rodents such as mice and lizards.

#### 4.6. CHEMICAL DETERIORATION

Chemical deterioration increases in materials in many ways. The agents that cause these reactions are many. Some are organic materials from the raw materials in the paper and others are the acidic agents that are deposited during the manufacture of paper. In addition to these, other gases from the atmosphere and light effects in their natural or artificial state, are potent causes of deterioration in library materials. They leave adverse effects that are very difficult to reverse, especially when such effects are due to excess exposure to light. The effects continue even after the light sources are removed and materials are put into dark storage. Long exposure to light activates chemical reactions leading to fading and bleaching making paper turn yellow or dark; causing the print media to fade or change colour; and altering the legibility and the appearance of documents, photographs, art works, and bindings. Some of these effects can be seen in the library, though not on a large-scale.

Fluctuations in temperature and humidity also cause various degrees of chemical reaction in the materials, depending on the type of material in question

As a control measure, the building was constructed in such a way as to shut off direct sunlight from affecting the library materials. Apart from this, fluorescent tubes with special covers were fixed to cut off the excessive effect of the light on the materials. Some of those special covering for the light fixtures are broken down due to wear and tear.

Other measures include constant dusting and cleaning to prevent atmospheric gas pollutants from affecting the materials.

Substitution preservation is also used in the library in situations that demand total restoration. For example, newspaper information is transferred on to microfilm to prolong the use of the information

In order to regulate the temperature and humidity air-conditioners have been installed though not at all storage areas.



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## CHAPTER FIVE

### 5.0 ANALYSIS OF DATA

As mentioned in chapter one, the methodology applied in the collection of data comprised, risk assessment through direct observation, informal interviews, questionnaires and documentary sources

Two separate questionnaires were administered to users and staff. The data collected was to determine the following main variables, awareness of disasters, reaction to disasters, disaster preparedness, and their opinions about training and education. Both categories of respondents were asked to give suggestions and comments. Some of these views were coded and analysed. Others were reproduced directly. Samples of questionnaires used can be found in the appendices I & II.

### 5.1 GENERAL INFORMATION

The respondents were both users and library staff. Users comprised lecturers, students and administrative staff. The library staff were made up of senior members, senior staff and junior staff.

In all, 200 questionnaires were administered to those who visit the library. To determine those who visit the library, readers' statistics was taken over a period of one week. A total number of 2526 users attended the library within this period. An average of 505 at a day's attendance. Based on this, the 200 questionnaires were distributed in the library and 182 were retrieved representing 91% response rate.

Users	Response - Freq.	Percentage%
Lecturers	18	10
Students	156	86
Administrative staff	8	4
<b>Total</b>	<b>182</b>	<b>100</b>

Table 1: Category of Users who responded to the Questionnaires.

With regard to staff, 55 questionnaires were administered and 45 retrieved representing 82% response rate.

Users	Response	Percentage%
Senior Members	6	14
Senior Staff	20	44
Junior Staff	19	42
<b>Total</b>	<b>45</b>	<b>100</b>

Table 2: Category of Staff who responded to the Questionnaires

## 5.2 AWARENESS OF DISASTERS

In an effort to determine the awareness of users and staff, questions focussed on whether they have heard about disasters and if they think disasters are likely to occur in the library

In all 82% of users have heard about disasters and this percentage also think that disasters are likely to occur in the library. The reasons given for this, are that, disasters are unpredictable and since the library continues to use old and faulty electrical switches the likelihood of disaster occurrence cannot be over-ruled.

However 17% responded no, and these respondents are of the view that disasters are not likely to occur in the Balme Library. Their reasons are:

- The design and construction of the building are superb, and since there are always people around any incipient disaster would be noticed and foiled.
- For so many years no disaster has occurred.
- Disasters hardly occur in Ghana
- Things are in order so disasters would not occur.

These comments are reproduced here to show how superficial or lightly people take such emergencies. It is true that Balm Library is one of the oldest and strongest building on the University Campus now as said by some of the respondents but disasters can take any form and strike anytime and affect anything anywhere. It was also evident from the risk assessment that fire hazards exist in the library. The result revealed the presence of faulty switches, congested offices with exposed electrical

wires, multipurpose basement which housed the main electrical distributor stored with chemical, old journals is a sure recipe for fire disasters. The presence of these in the internal environment shows that, the probability of disasters cannot be totally ruled out, though the external environment may appear safe to the casual observer. Simply, the Balme Library has been fortunate so far. Disasters are unexpected events, which happen so suddenly that people are normally caught unprepared. The unexpected can happen in the night when the library is closed. So for some users to mention that there are people always around and any incipient disasters would be noticed and foiled, is an unfortunate answer which probably depicts how lightly disasters issues are treated by many people until such time that they have had the experience.

It is also interesting to note that 30% of the readers use the library daily, while 16% visit it weekly, with 39% visiting it occasionally. This is necessary because at any point in time especially during the working hours, there is a sizeable number of readers in the library. In times of emergency rescue teams would have a fair idea of users that may be trapped in the library.

Table 3 shows the total number of staff who responded to the questions on the awareness of disasters and the likelihood of their occurrence in the library. In all 82% answered "yes" and 14% said "no" while 4% could not respond probably due to indecision.



Response	Disaster Experienced in the Library		Disaster Awareness Likelihood of Occurrence	
	Freq.	Percentage(%)	Freq.	Percentage (%)
Yes	9	20	37	82
No	34	76	6	14
No response	2	4	2	4
Total	45	100	45	100

Table 3 Staff responses to Disaster Experienced and the awareness of Disasters and likelihood of occurrence

As shown in the table 3 above, 20% of the staff has experienced disasters in the library between the period 1989 – 1998 whereas 76% have never experienced disasters of any kind in the library. Those who responded in the affirmative attributed the disasters to roof leakage in some sections of the library. Some mentioned the Reference Issue Hall, the basement and the Periodicals Hall as well as the Science Periodicals Hall. This confirms the risk assessment which results show the existence of water hazards in the library. However, for those who responded in the negative, it can also be deduced that they did so, because, they were not at post at the time of the incidents or were not observant or did not recognise such situations as disasters.

The expressed opinions and the high percentage of awareness levels on the part of both categories of respondents appear to suggest that any effort on the part of

management to introduce precautionary measures against mitigating the effects of disasters will be wholly supported

### 5.3 COLLECTION AND STORAGE

In disaster management, awareness of the disasters and type of materials in the library is important. Therefore, staff was asked questions to ascertain if they knew the type of materials in the collection as well as the equipment in the library. 98% of the staff were able to mention all the materials and the equipment accurately.

Though all library materials react to environmental conditions, which may lead to various forms of deterioration as mentioned in chapter four, the storage environment plays a very significant role in their preservation, particularly in the case of non-print materials like microforms. Specific questions were therefore directed at knowing the conditions in the storage area. Fifty seven percent (57%) of staff mentioned the basement and the CD-ROM Room. Seventy five percent (75%) responded that they are air-conditioned. It can be deduced that as far as non-print materials are concerned, they are kept under good storage environmental conditions.

Additionally Computer diskettes have backups outside the library so that in case of fire outbreak for example, documents would not be totally lost.

Other materials such as books, manuscripts, maps are stored relatively well except that most of them are packed or shelved tightly probably due to lack of space. The implication is that such materials especially maps are or can be affected by mould formation which could lead to biological deterioration and could cause health hazards to users as well as staff.

Preparedness includes knowing the location of vital equipment and how to use them during the emergency period. Users were asked if they knew the location of fire extinguishers in the library. As many as 66% responded "no". This shows that most users are probably not observant.

However 99% of the staff know the location of the fire extinguishers. Unfortunately, 67% of them do not know how to operate the fire extinguishers. If as many as 67% of the staff do not know how to use the fire-extinguishers as well as 66% of the users who do not know the location the fire-extinguishers even though they exist in the library, it gives an indication of unpreparedness on the part of both staff and users. Obviously in emergencies the possibility of chaos cannot be easily dismissed.

#### 5.4 DISASTER PREPAREDNESS PLAN

Disaster preparedness plan is a vital tool that guides operations of any emergency situation. Such a plan if available, should be known to all members of staff. In view of this, staff were specifically asked if they knew of such a plan in the library.

Response	Measures to Salvage Water-Damaged Materials		Adequacy of Disaster Measure		Awareness of Disaster Plan in the Library	
	Freq.	Percentage(%)	Freq. (%)	Percentage	Freq.	Percentage(%)
Yes	7	16	9	20	14	31
No	34	77	29	65	29	65
No Response	4	7	7	12	2	4
Total	45	100	45	100	45	100

Table 4. Staff response to (a) Measures to salvage water-damaged materials (b)

Adequacy of disaster measures (c) Awareness of Disaster Plan



The respondents were asked to state what measures that were in place instead of the disaster preparedness plan. Among the measures mentioned were the availability of fire extinguishers, fire alarms, disaster committees and no measures. From the answers, it can be deduced that the majority of staff probably do not know what is available in terms of a disaster preparedness plan. This is because fire alarms are not in the library neither does the library have any disaster committee in place and the majority of the fire extinguishers are not functional.

The above situation has several implications for the library and the University at large should a disaster strike. It means that during such emergencies about 500 users in addition to staff would either be trapped or injured depending on the type of disaster and magnitude of damage. And from the analyses, it shows that there is no disaster plan in the library, it can therefore be tentatively concluded that there would be loss of life and consequently productivity would be adversely affected. Generally, it is likely that the academic work would be curtailed for some time. So if Balme library has been fortunate so far there is no guarantee against the probability of disasters not happening.

Having mentioned the measures, staff were asked if the measures to their estimation were adequate. 65% responded in the negative, 20% in the affirmative 15% did not respond. Knowing that collections are equally affected during such emergencies and the risk assessment show evidence in the records of water hazards staffs were asked if there were any measures in place to salvage water damaged materials, 77% responded "no" and 16% responded "yes", 7% did not respond.

The seventy-seven response rate shows clearly that there is no measure to salvage water damage materials. This is quite surprising because the perennial nature of the

roof leakage is enough proof that some form of measure should be in place to salvage materials immediately and after such emergencies occur. It can then be deduced that during or after disasters the library would probably lose several of its collection. The collection not immediately salvaged may be damaged by mould and fungi infestation. Mould infestation though slow in formation can have very devastating effects on the materials. Information can be lost easily through the feathering of the ink and discolouration. Others such as photographic materials may stick to each other and the process of separation can lead to loss of information.

## 5.5 INSURANCE

Insurance is an expensive capital investment but a welcome one in the face of catastrophic events. Insurance requirements are critical considerations in disaster preparedness. From the data collected it was observed that most staff are not aware of any insurance policy covering staff, collection, the building or the equipment. However, 41% of the staff mentioned that equipment alone were insured. This position was confirmed in an interview with the Chief Administrative Assistant of the Balme Library.

Needless to say this position is very grave considering the fact that generally, in civil protection during disasters, safety of people is paramount. It goes without saying that, Harvey cautioned that in most disaster preparedness plan in the library, it is normally assumed that the state or the parent institution has taken care of the general safety of the people. The University of Ghana as the parent institution, could liaise with the relevant agency to institute an insurance scheme that covers all workers against injuries and losses. Lack of insurance coverage has implications for the library and University respectively. When people are injured or dead in such emergencies there may not be

any compensation for them. Further, should the collection be affected by fire for example, collections would be totally lost. In case of those materials that may be replaceable, there would be no insurance claim to acquire any new stock. In Disaster Management, the principal objective is to achieve that level of safety that will reduce the potential loss of assets and occupants to an acceptable minimum. In the risk assessment, fire risks seem to be most probable disaster that can occur in the library. Most probably that may explain why the insurance coverage for equipment alone Merchant (1994) says it is unusual for all aspect of fire safety to be considered as a total system because of the division of control over aspects of fire safety.

For example, Marchant explains that "insurance companies are concerned with protection systems that will reduce the degree of fire damage that could be suffered by the objects involved; whereas various agencies of governments are concerned with the provision of fire-safety systems that will maintain an acceptable level of safety for the human occupants of a building during a fire situation".<sup>1</sup> Perhaps, this is the policy of the University administration that may explain the insurance coverage for only equipment; and the provision of few fire extinguishers, which are not functional.

## 5.6 REACTION

All staff and users must know how to operate fire alarms and be aware of any other alarm's procedures. It is important to know what to do in such emergencies. This knowledge it is believed may impact positively on the reaction and behaviour of people such situations. Hence, users were asked to indicate what they would do in such situations. Though this question may have been relevant to both users and staff, it was only users who were asked to answer this question.



Response	Do You know what to do during fire disasters	
	Freq.	Percentage(%)
Yes	8	4
No	67	37
Jump, Raise Alarm, Run	102	56
No Response	5	3
<b>Total</b>	<b>182</b>	<b>100</b>

Table 5: Users responses to "Do you know what to do during fire disasters -?".

The responses show that 4% of the users said "yes" and 37% said "no" to the question "Suppose you are in the library, and there is a fire disaster do you know what you are supposed to do?" Others as many as 102 representing 56% responded in the affirmative but tried to explain what they would do by saying, they would either run, jump or raise alarm by shouting, "fire, fire". Only one respondent mentioned that he/she would call the Ghana National Fire Service. 3% of user did not respond probably due to uncertainty. The pattern of responses may probably be because majority of the users either do not know what to do or have not been taught what to do in such situations. The pattern also probably indicates a situation of unpreparedness, which could lead to disastrous consequences.

Further, users were asked to indicate how they would feel if the library should close down as a result of any disaster. The responses are shown in table 6 below.

Response	Close down of library	
	Freq.	Percentage(%)
Disappointed	146	80
Not very Disappointed	25	14
Indifferent	7	4
No Response	5	2
<b>Total</b>	<b>182</b>	<b>100</b>

Table 6: Reaction of users due to disaster.

The 80% disappointed response rate indicate that respondents recognise that the library is the main source of information for academic pursuits. Obviously, when users were asked how soon they would expect the library to resume work after disaster occurrence, 41% suggest "in a week". Though resumption or recovery after disaster depends to a large extent on the magnitude of damage caused, this answer could be expected due to the fact that the library plays an important role in the university.

## 5.7 TRAINING AND EDUCATION

In disaster management, training and education is the number one priority. This raises the awareness level of all staff and users regarding everyday safety and security issues and the steps that could be taken to reduce the occurrence of any disaster. It is also to prepare both the rescue team and others to know what to do in the event of a disaster. This is expected to enhance the response capacity of both staff and users



Training should give all staff a clear idea of what they can expect to find in various disaster scenarios, such as fires and floods or earthquakes, and make them fully aware of their roles and responsibilities, as well as those of their colleagues. It should provide opportunities for staff at all levels to practice particular activities, such as the removal of items from a disaster area with minimal damage, and to familiarise themselves with materials and equipment. This will enable individuals to react more quickly in an emergency and help to give them greater confidence in their ability to cope.<sup>2</sup>

Users were therefore asked if they would recommend training for themselves. In response to the question, 92% of users answered "yes" while 5% said "no" and 3% did not respond. 69% suggested that users be trained in the use of first aid and fire extinguishers as well as fire drills. With regards to staff, 90% of them agreed that training is important.

Response	Training	
	Freq.	Percentage
Yes	209	92
No	11	5
No Response	7	3
<b>Total</b>	<b>227</b>	<b>100</b>

Table 7: Responses of users and staff on training.

Table 7 shows the responses of both users and staff put together. 92% responded in the affirmative that it is necessary to have disaster training for both users and staff,

while 5% responded "no", 3% did not respond. Though both respondents support training, a further question aimed at determining the number of staff who have undergone any training in any aspect of disaster management revealed that 87% of staff have not had any form of training in any aspect of disaster management either by having fire drills during simulation exercises or the use of the fire-extinguishers. This also buttresses the fact that the library is unprepared for disaster occurrence or any form of emergency.

Users were asked to suggest or make comments

Suggestions/comments	Freq.	Percentage Response %
Provision of Fire Alarms	23	13
Maintenance of Electrical Installations	12	7
Identification of Potential Hazards	6	4
Education and Training	45	25
Disaster Preparedness Plan	13	7
No Response	83	46
<b>Total</b>	<b>182</b>	<b>100</b>

Table 8: Comments by users

Some suggestions fall outside the coded answers. However, since they are relevant to the library operation they are presented as follows:

- The library is too over-crowded so there could be a stampede when there is a fire outbreak. Therefore, bigger and more modern library is needed.
- All broken furniture and "out of use" books should be removed since these constitute a possible fire hazard.
- Telephone booths should be provided at the entrance of the library.
- Overgrown hedges should be pruned to prevent snakes from entering the library

Comments	Freq.	Percentage (%)
More awareness should be created	2	5
Education and training	17	33
Provision of fire exits	6	13
Protective and precautionary measure to ensure staff safety and materials	4	9
No response	18	40
<b>Total</b>	<b>45</b>	<b>100</b>

Table 9 shows the comments of staff

The comments and suggestions of both users and staff point to the fact that libraries and information centers need to take more practical measures to prevent or minimize



the risk of hazards and be prepared to react quickly and effectively should a disaster occur.

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## CHAPTER SIX

### 6.0 CONCLUSIONS AND RECOMMENDATIONS

#### 6.1 CONCLUSIONS

The purpose of the research was to investigate and identify potential hazards and the measures that are in place to forestall any possible disaster occurrence in the Balme Library. This is in cognizance of the fact that disasters are unpredictable, they strike anywhere and libraries are not exempted from their devastating consequences.

In analysing the data collected for the study many observations were made and based up on these conclusion were drawn.

First, it has been observed from the risk assessment that fire and water hazards exist in the library.

Secondly, the deductions made from the analyses of the data on the questionnaires indicated that users and staff are aware of disasters in libraries. The level of awareness is high on both sides.

Thirdly, there is no concrete effort aimed at having adequate measures in place that could lessen the effect of disasters. There are few fire extinguishers but these are not functional. Emergency exits are permanently closed and windows barricaded to safe guard equipment. These can become impediments during emergencies.

The analysis of the questionnaires on staff revealed that quite a number of library staff do not know how to use the available fire extinguishers and they have not had any training in any aspect of disaster management.

The study also revealed that there is no disaster committee, programme to salvage water damaged materials, smoke detectors, fire alarms to sound early warning, and procedures to follow in case of emergency in the library

From the observations made and the absence of the essential facilities and procedures necessary for effective disaster management in the library, it can be concluded that there is no preparedness plan for the library against any emergencies that may occur in the library

It was also clear from the study that though users are aware of disasters they hardly know what to do in case of such unexpected situations. Though there are few fire – extinguishers in the library most of them are not aware of them neither their locations.

The conclusion that can be drawn from this, is that, in case of an emergency there could be possible lost of life as a result of panic, ignorance and stampede

Having a comprehensive documented disaster plan is a top management responsibility that should form an integral part of all library management practices especially in the area of preservation management.

It was also obvious that water or roof leakage has been a problem in the library close to a decade now, unfortunately measures are not in place to salvage water damaged materials should there be serious emergency in the library. Water disaster is a single event that can happen as a result of so many factors. Some of these are fire outbreaks



which may necessitate the use of water hose and sprinklers to quench the fire, and earthquakes which can result in burst-pipes in stack areas that could lead to flooding resulting in damages to library materials. Earthquakes also have the potential of triggering fires in libraries

There is apparent lack of training for the staff. Disaster training is an essential requirement for any emergency plan. Although this was lacking, at least staff could have been trained in the use of simple fire extinguishers. This could have been, needless to say, a welcome attempt to mitigate the adverse impact of any of the potential hazards identified in the library. It is actually not enough to be aware of the likelihood of disaster occurrence and not doing anything about it.

## 6.2 RECOMMENDATIONS

During the risk assessment tour of the library the team recommended that during working hours, all barricaded windows and exits should be opened, so that, in case of any emergency staff can escape easily and rescue teams could have access to operate effectively. Much havoc is caused when accessibility to disaster areas is blocked either as a result of human traffic or the presence of heavy burglar proof.

The basement should be immediately put in order. All chemicals should be removed from the powerhouse and stored in a much safer place. The access way to the powerhouse should also be cleared so that, in case of fire outbreak, the fire-fighting team can easily reach the main power distributor.

All offices should have the appropriate fire extinguishers and these should be serviced regularly. Buckets of sand should be provided in all the offices to help support the

existing fire extinguisher for fire fighting. The fire exits in the library should be well marked and the keys put into the glass cases located near the exits. Since there are no fire alarms neither are there smoke detectors, an identifiable or a common procedure should be initiated to raise alarm during emergencies. These should be incorporated in the orientation programme for all new users of the library.

All staff should be trained and shown how to operate simple fire-facilities during emergencies. The training should be done in conjunction with the Ghana National Fire Service. Periodic simulation exercises as well as fire drills could be undertaken to assess the readiness of the library to tackle unexpected emergencies. This should be a continuous process to ensure that new staffs that are employed are immediately given this training.

Further, it is recommended that the library administration should bring to the notice of the library board the importance of having a disaster preparedness plan. If the policy is formulated and approved, then the library administration can constitute the committee that would see to it that a disaster control plan is put in place for the library. Again the aspect of training should be a number one priority. The plan should outline risk, some of which have been identified in this research, safety procedures, staff responsibilities reaction and recovery strategies are important. Nevertheless unless staff receive appropriate training in these areas, the plan would never be functional.

It is further recommended that the library should establish healthy relationships with appropriate agencies like the National Disaster Management Organisation and the Fire Service so that, they could help in the drawing up of such a plan for the library. This relationship is necessary so that in time of emergencies, these agencies who may be

the members of the rescue team would know the floor plan of the library and the priority areas to access and the type of materials to be salvaged. It is also to help the team to know the kind of equipment and materials to use in such situations.

### 6.3 SOME SUGGESTED PROCEDURES TO BE CONSIDERED IN DRAWING UP OF DISASTER MANAGEMENT PLAN FOR THE BALME LIBRARY.

One of the objectives of this study is to suggest procedures that could be considered in the drawing up of disaster management plan for the Balme library. Such procedures are as follows:

1. constitute a committee and appoint a leader
2. Assign responsibilities and roles
3. Assess potential and actual hazards and kinds of damage and scale of damage.
4. Inventory/collation of data on possible damage materials.
5. Responsibility for liaising with media and the Public
6. Provision and control of equipment

Generally, in drawing up the plan the procedures are grouped under three (3) phases and all four (4) components are considered in these phases



### 6.3.1 Phase I Pre-Disaster Stage

These normally consists of risk assessment, prevention and preparedness

- Identify all risks posed by the building itself, as well as fittings contained in the building.
- Identify authorised and unauthorised access to the building
- Fire and water hazards have been identified in the library in this study
- Building and all fittings must be regularly inspected and maintained.
- Leakeages should be prevented, water pipes and electrical wiring should be well positioned
- Faulty switches must be properly repaired or replaced immediately
- There should be effective fire and water detectors and alarm systems as well as fire suppression systems
- Valuable materials should be stored preferably on the top floor or off the basement floor

#### 6.3.1.1 Preparedness stage

It is based on the premise that not all disasters can be prevented and it involves planning and preparing to deal with disasters should they arise. This phase involves constituting a team for response, rescue of people and recovery of valuable collections in the library. The team is normally referred to as the Disaster Reaction Team.

List all members of the team, their addresses and telephone numbers. This should be clearly posted in the library

Identify and list all essential ministries, organisations, libraries and services. Include their names, addresses and telephone numbers. Assign responsibility and roles. These should be well documented.

Example of ministries, organisation, libraries and services are suggested below:

<b>NAME OF MINISTRY/DEPARTMENT</b>	<b>-</b>	<b>RESPONSIBILITIES/ROLES</b>
1 Ghana National Fire Service	-	to help put out fire and help rescue those who are trapped in the building.
2 Ghana Police Service/Legon		to provide security to prevent looting
3 Ghana Water Company Ltd.		to provide water for the Fire Service
4 Electricity Corporation Ghana		to service faulty electrical installation appliances and to help determine cause disaster.
5. MOH/Legon Hospital Ambulance		to convey the injured and the dead.
6 NADMO/MOH		to ensure rescue team movement and first aid administration.
7. Ministry of Works & Housing/Development office, Estate Organisation, Legon.		Reconstruction of structures.

8. Plumber to repair drainage systems and leakage
9. Insurance to help assess damage and pay compensation
10. Legal Department in case of legal cases

Identify similar agencies for co-operate activities in and outside the immediate environment. Some suggested libraries are as follow:

<b>Name</b>	<b>Location</b>
School of Administration Library	Legon
Institute of African Studies Library	Legon
Faculty of Law Library	Legon
The Population and Social Science Library	Legon
Faculty of Agriculture Library	Legon
Medical School Library	Korle Bu
The University of Cape Coast Library	Cape Coast
The University of Science and Technology Library	Kumasi
The Central Reference and Research Library	Council for Scientific and Industrial Research (CSIR), Accra.



Another aspect of preparedness plan is the availability of disaster supplies and equipment. The following are suggested equipment, supplies and sources of supplies that can be considered:

Though some of these items may seem common place things, it is necessary to document them so that, they are not forgotten

For each item the source and Telephone number must be documented.

	ITEM	SOURCES	TELEPHONE
1	Plastic crates: or Cardboard boxes	Poly Group of Companies/Ghana	
2	Plastic crash bags	Rubber Product Ltd.	
3	Unprinted newsprint	Graphic Corporation	
4	Paper towels	Royal Paper Company Ltd.	
5	Wax paper	-	
6	Rubber gloves	Reiss & Co. (GH) Ltd. – 775359/775484	
7	Protective masks	Elephant Fire	
8	Portable Fans	Melcom/Lava	
9	Brooms	Local market	
10	Torch/handlight	Melcom/Lava	
11	Fungicides (eg. thymol)	Mina Chemicals	224265
12	Portable generator	Reiss & Co.	
13	Water Hoses	Signals & Controllers Ltd.	221658
14	Library Trucks	Other Libraries	
15	Freezer space	Allied Cold stores Ltd	

- |     |  |   |  |
|-----|--|---|--|
| 16  | Refrigerator trucks  | - |  |
| 17  | Pails, sponges, mops, buckets  | - | Local markets  |
| 18  | Record Keeping material<br>(pencils, note books, pen)                | - | Library Store  |
| 20  | Utility knives for cutting<br>freezer wrap & patching tape           | - | Local dealers  |
| 21. | Patching tape for cardboard boxes                                    | - | -  |
| 22. | Tool kits including wrenching bar for<br>prying apart jammed shelves | - | Estate Organisation, Legon   |
| 23. | Extension Cords/scissors   | - | Melcom/Lava  |
| 24. | Plastic film   | - | *  |
| 25  | Paper towels   | - |  |
| 26. | Communication systems  | - | installation of intercoms and<br>telephone booths in the Library   |
| 27. | Fire extinguishers   | - | these should be purchased taking<br>into consideration the different<br>types of fires that are likely to<br>take place in the library |

Every floor and office should have the appropriate fire extinguisher in place

### 6.3.2. Phase 2 The Disaster or Emergency Stage

This involves the response and reaction stage where all the preparations made in the planning stage are reactivated. Specific steps should be taken when disaster strikes.

#### Suggested steps

- Call the disaster reaction team eg. the Ghana national fire service ; NADMO, or Campus Security
- Open all emergency exits in the library
- Ring the bell continuously
- Use appropriate fire extinguisher if necessary
- Remove the card catalogues from the issue hall
- Contact all identified libraries for assistance
- After the safety of all persons in the library have been ensured , the library materials should be evacuated as soon as possible .
- Wear protective clothing for this exercise (this is to ensure that the team members are against health hazards .

#### 6.3.3 EMERGENCY RESPONSE PRIORITY RECOVERY PLAN FOR VITAL COLLECTIONS IN THE LIBRARY

It is recommended that in case of emergencies the floor plan of the library should be followed by rescue and emergencies workers in order to retrieve the most important items in the library.

KEY TO DIAGRAMS I & II page.117

FIRST FLOOR

PRIORITY A



RED

LOCATION / COLLECTION

African rare book room



YELLOW

World Bank Library

YELLOW

CD - ROM Workstation

PRIORITY C



GREEN

Student Reference Reserve

GREEN

Student Reference Library

PRIORITY D



BLUE

Periodicals Hall

GROUND FLOOR

PRIORITY A

LOCATION / COLLECTION



RED

The Catalogue Cabinet- Issue Hall

The Electronics Support Units

PINK

ILL/DD Office

PINK

Cataloging Department

Orders / Acquisitions Department

General Office and Library Office

**PRIORITY C**



GREEN

UN Library

GREEN

Arabic library

GREEN

East Stock

**PRIORITY D**



BLUE

Reader's services / Reference Hall

BLUE

West Stock

BLUE

Library Science & Bibliography

**6.3.4.Phase 3 The Post-Disaster Stage**

This involves the process of recovery, reconstruction and rehabilitation. The aim of the stage is to ensure normal working condition and to ensure service as soon as possible. Rapid recovery measure such as evacuation of the collection within 48 hours.

after the disaster has occurred. This is to ensure that materials are not affected by mould and fungi infestation. Alegbeleye recommended that water damaged materials should be rehabilitated through the following methods: air-drying; dehumidification, freezer drying, vacuum and vacuum freezer drying. It therefore suggested that some of these methods could be employed in the recovery process depending on the scale and type of damage caused.

Generally the following steps are taken:

- Sort and transfer items to designated locations identified in the disaster preparedness plan
- Take inventory of catalogues of collections, hardware and furniture
- If water damage occurred, air-drying or other methods may be considered. This could be done in the library or another location
- Clean the library. Use the staff or other agencies depending on the scale of damage.
- Replace hardware and furniture
- Re-arrange the library appropriately
- Prepare insurance claim (if this facility exists)
- Plan to restore the collection
- Notify users of the resumption of service
- Thank all participants

Finally, for the plan to be effective it is necessary to reduce some essential aspects into simple do's and don'ts that should be a constant reminder to ensure the safety of people and collections. Examples of such reminders are suggested below

In case of fire,

- Leave the building immediately
- Do not try to fight the fire unless it is limited to a small area
- Never open a door that feels hot. If the handle is very hot it means the fire is fierce on the other side. Try another escape route or wait and shout for help.
- Crawl on the floor when going through a smoky area
- Do not run if your clothes catch fire.
- Roll on the floor to smother the flames
- Do not return to the building for any reason after you have escaped
- Call the National Fire Service if you think people are still trapped in the building

In conclusion, it is hoped that the recommendations and suggestions made in this study will be useful and valuable not only to Balme Library but to all academic libraries on campus as well as those outside Accra



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Appendix I

QUESTIONNAIRE FOR LIBRARY USERS

I am a student of University of Ghana, Legon, pursuing a course leading to the award of the Degree of Masters of Arts in Library Studies. As part of the requirements, I am conducting a research on the topic "Disaster Management in the Balme Library, University of Ghana"

This questionnaire is designed to find out the measures that are in place in handling emergencies as a result of either an outbreak of fire or floods (water damages or disaster of any kind)

I would therefore be grateful if you could please complete this questionnaire for me

All answers will be treated confidentially, and would be used strictly for academic purposes only.

Thank you for your co-operation

INSTRUCTIONS. Please tick the most appropriate answers or fill in answers on blank spaces where applicable

GENERAL INFORMATION

1. Students

- |      |     |     |     |
|------|-----|-----|-----|
| i.   | 100 | iv. | 400 |
| ii.  | 200 | v.  | 500 |
| iii. | 300 | vi. | 600 |

2. Position in the University

- i. Teaching Assistant
- ii. Lecturer
- iii. Senior Lecturer
- iv. Professor
- v. Research Fellow
- vi. Others

3. Do you use the Balme Library?

- i. Yes
- ii. No

4. How often do you visit the Library?

- i. daily
- ii. weekly
- iii. fortnightly
- iv. monthly
- v. occasionally

AWARENESS

5. Have you ever heard about disasters?

- i. Yes
- ii. No
- iii. Others

6. Which disaster type did you hear about?

- i. Fires
- ii. Floods (water)
- iii. Others

8. Do you think disasters are likely to occur in the library?

- i. Yes
- ii. No

9. Why do you think so?

.....

.....

10. Have you seen fire alarms in the Library?

- i. Yes      ii. No

11. Have you seen any fire extinguishers in the Library?

- i. Yes      ii. No

12. If yes, please state where

13. Have you noticed any leakage in the Library?

- i. Yes      ii. No

14. If yes, please state which section

### REACTION

15. How would you react if the library should close down due to a disaster?

- i. Disappointed  
ii. Not very disappointed  
iii. Indifferent



16. If the Library should close down due to disaster, how soon would you expect the Library service to resume?

- i. In a day
- ii. In a week
- iii. A fortnight
- iv. In a month
- v. Others

17. Suppose you are in the Library, and there is a fire disaster, do you know what you are supposed to do?

- i. Yes
- ii. No
- iii. If yes, explain

#### TRAINING AND EDUCATION

18. Would you recommend training in disaster management for the Library users?

- i. Yes
- ii. No

19 Which of the following would you recommend and why?

- i. First Aid
- ii. Fire Drills
- iii. Rescue Operations
- iv. All

20. Do you have any further comments or suggestions to make?

.....

.....

.....

.....

Appendix II

QUESTIONNAIRE FOR LIBRARY STAFF

I am a student of University of Ghana, Legon, pursuing a course leading to the award of the Degree of Masters of Arts in Library Studies. As part of the requirements, I am conducting a research on the topic "Disaster Management in the Balme Library, University of Ghana".

This questionnaire is designed to find out the measures that are in place in handling emergencies as a result of either an outbreak of fire or floods (water damages or disaster of any kind).

I would therefore be grateful if you could please complete this questionnaire for me.

All answers will be treated confidentially, and would be used strictly for academic purposes only.

Thank you for your co-operation.

INSTRUCTIONS. Please tick the most appropriate answers or fill in answers on blank spaces where applicable.



GENERAL INFORMATION

- 1 Position in Library
- 2 How long have you been in the Library?
  - Less one
  - 1 – 10
  - 11 – 20
  - 21 – 31
  - 31 and above

COLLECTION & STORAGE

- 3 Which of these do you have in the Library?
  - i. Books
  - ii. Periodicals
  - iii. Manuscripts
  - iv. Microfilms
  - v. Audio-visuals
  - vi. Rare Books
  - vii. Others specify ...

4. Which of the following equipment do you have in the Library and how many?

- i. Typewriters
- ii. Photocopiers
- iii. Microfilm readers
- iv. Computers
- v. Metal Cabinets
- vi. Air conditioners
- vii. All

5. What type of shelves do you have?

- i. Metal
- ii. Wood
- iii. Other

6. Where do you keep the non-print materials?

- i. Basement
- ii. Attic
- iii. Other places

7. Is the room that houses the non-print materials air-conditioned?

- i. Yes
- ii. No

#### AWARENESS

8. Do you think disasters do occur in libraries?

- i. Yes
- ii. No

9. Which of these do you think is likely to occur in the Library?

- a. i. Fire (arson)
- ii. Fire (faulty electrical)
- b. i. Flood (rainfall leakages)
- ii. Flood (faulty pipe)
- c. i. None of the above

10. Have you ever experienced disaster in the Library?

- i. Yes
- ii. No

11. If yes, state which type and what happened?

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12. In which year was this?

#### DISASTER PREPAREDNESS

13. Do you have a disaster plan in the Library?

- i. Yes
- ii. No

14. If yes, state the form

- i. Written
- ii. Non-written



15. If no, state measures that are in the Library to forestall any disaster

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16. Do you think the measures are adequate?

- i. Yes      ii. No

17. If no, state what should be done

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18. Do you think a disaster plan is necessary?

- i. Yes      ii. No

19. If no why?

.....

20. Do you have fire or smoke detectors?

- i. Yes      ii. No

21. Do you have fire alarms?

- i. Yes      ii. No

22. Do you have fire extinguishers?

- i. Yes      ii. No

23. How often are these serviced?

- i. Fortnightly
- ii. Monthly
- iii. Biannually
- iv. Annually
- v. Not at all

24. Do you know where fire extinguishers are located in the Library?

- i. Yes
- ii. No

25. Do you know how to use the fire extinguishers?

- i. Yes
- ii. No

26. Do you experience power outages/blackouts?

- i. Yes
- ii. No

27. If yes, during power outages what do you do?

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28. Do you experience leakages when it rains?

- i. Yes
- ii. No

29. Do you have any measure in place to salvage water-damaged materials?

- i. Yes
- ii. No

30. Which of the following sprinklers do you have in the Library?

- i. Water
- ii. Foam
- iii. None of the above
- iv. Both

31. Do you have sand buckets?

- i. Yes                      ii. No

### INSURANCE

32. Do you have any insurance policy for the following:

- i. The whole library
- ii. Staff only
- iii. Staff & equipment
- iv. Collection
- v. Building
- vi. none

### TRAINING

33. Do you think it is necessary to train staff in aspects of disaster management?

- i. Yes                      ii. No

34. Which of the following would you suggest and why?

(tick as many as applicable)

- i. First Aid
- ii. Fire Drills
- iii. Restoration of library materials
- iv. Rescue operations
- v. All



35. Have you undergone any of the above training?

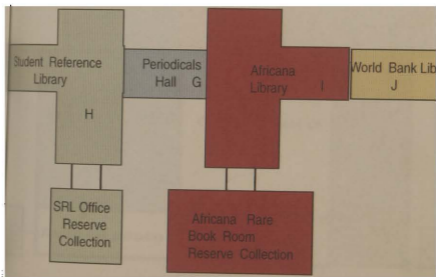
- i. Yes       ii. No

36. Do you have any further comments, suggestions/problems to make?

DIAGRAM 1

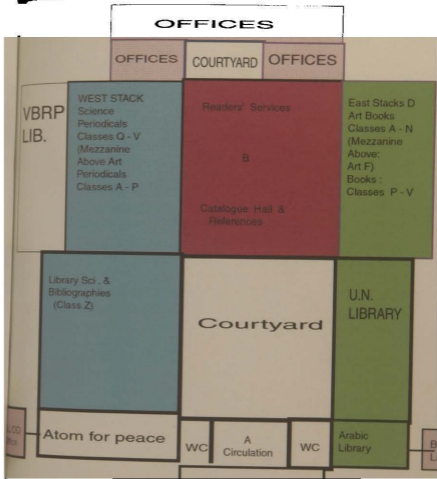
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