PRESERVATION AND CONSERVATION OF ARCHIVAL DOCUMENTS IN THE DIGITAL ERA: A STUDY OF THE ARCHIVE CENTRES of GUWAHATI CITY

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ABSTRACT:

Archive is a specific location or a place where the old relevant documents like records, books, files, reports etc., are preserved and conserved using variety of technologies. Preservation and conservation of archival materials has become very crucial to restore it from loss, decay, mutilation and theft and thereby increase their longevity for future use. However, it has become a great challenge to integrate the manual measures of preservation and the emerging new preservative technologies. This paper highlights the present status of the archives of Kamrup metro, the traditional and emerging approaches of preservation and conservation of archival documents, need of digital preservation of archives in this global digital information environment and their limitations.

KEYWORDS: Archive, preservation and conservation, digital preservation, digital library software.

1. **INTRODUCTION:** The primary objective of archives is to preserve the important and unique old documents like records, books, files, reports, photographs, tapes, CDs etc., and thereby increase their longevity for use in research and other fields using the two methods namely preservation and conservation. Preservation and conservation are like the two sides of a coin where preservation deals with regular maintenance and conservation deals with remedial treatment and restoration of the mutilated specimen. In the present era, we are facing new challenges in maintaining and preserving the electronic and the rare fragile materials which are of much social importance. The fragile, rare and materials, documents artifacts etc., need to be protected from deterioration and mutilation with the help of the technical knowledge of trained staff.

2. **OBJECTIVES:** The primary objective of the study is to focus on the status of the archives and their routine functions and services and to understand the problems and priorities. The specific objectives of the study are:
   2.1. To study the present state of preservation and conservation of libraries that maintains separate archive sections and that of Government archives.

2.2. To highlight the emerging approaches of preservation and conservation of archival documents.

2.3. To emphasize the necessity of digital preservation of archives in this global digital era.

2.4. To reflect the limitations of the same.

3. **SCOPE:** This study is concentrated to some of the archives of Guwahati city only. The author has selected, viz, Assam State Archive, Department of Historical and Antiquarian Studies Library (DHAS), Assam Administrative Staff College Library, District Library, Guwahati, Council of Baptist Churches in N.E India, Guwahati (CBCNEI), Doordarshan Kendra Tape Library, Guwahati, All India Radio Library, Guwahati, Assam Textile Institute Library.

Dr. Hiranya Chandra Bhuyan Memorial Reference Library (Directorate of Library Services, Assam), Archival Cell & Manuscript Section (K.K. Handique Library), Media Trust Library, Ananda Chandra Agarwala Library (Assam State Museum), Zonal Archive (Akashvani & Doordarshan), NER, Indian Council of Historical Research (ICHR), Guwahati. The author selected 14 Archives of Guwahati City of which only nine (09) responses were received from Libraries and Archives. The present study received 90% response from the Librarians/Directors/In-charges of the libraries which maintain archival cells.

4. **METHODOLOGY:** The author has collected primary information from questionnaire-based survey and personal interview of the librarians, archivists, directors of 14 Archives of Guwahati City. A short well-structured questionnaire was sent to each of these archives and was personally visited and little information was collected over telephonic interview. The data thus collected from the various selected sources has been carefully analyzed and presented in tabular form on which the information was seeked and thus conclusions were drawn.

5. **STATUS OF PRESERVATION AND CONSERVATION OF THE ARCHIVES OF GUWAHATI CITY:**

Dr. S.R. Ranganathan, the father of Library Science, in his first Law of Library Science which says that books are for use, emphasizes on the greater dissemination of library materials. The application of this law is possible only when the documents are in good and legible condition. So to meet the continuous demand of the documents it is of utmost importance to preserve and conserve the old relevant specimens. The study which has been carried out within Guwahati city constitutes the primary data for analysis and interpretation. Table 1. Shows the list of the archives which were surveyed.

Table. 1. List of the Libraries/Archives surveyed

Sl.No	NAME OF THE LIBRARY/ARCHIVE CENTERS	YEAR OF ESTABLISHMENT
1.	Assam State Archive	1980
2.	Department of Historical and Antiquarian Studies Library(DHAS)	1928
3.	Assam Administrative Staff College Library	1961
4.	Directorate of Library Services , Guwahati	1974
5.	Council of Baptist Churches in N.E India(CBCNEI)	
6.	Doordarshan Kendra Tape Library	1985
7.	All India Radio	1948
8.	Assam Textile Institute	1920
9.	Archival Cell and Manuscript section, K.K. Handique Library	1954

5.1. **LIBRARY/ARCHIVE COLLECTION:** The most essential factor of any library is its collection. If the collection of a library or archive is efficient and satisfactory to the needs of the users, the image of the library or archive shall automatically reflect. The following Table 2 & Table 3 shows the variety of collections of the surveyed archives.

Table 2

Sl.No	Name of Library/Archive	Back Volumes	Reference Books	Manuscript	Government Records	Proceedings	Reports	Monographs
1.	Assam State Archive	400	0	75	0	363	7403	61
2.	Department of Historical and Antiquarian Studies Library(DHAS)	200	0	2800	0	0	110	0
3.	Assam Administrative Staff College Library	Data not provided	50000+	0	Data not provided	0	200+	0
4.	Directorate of Library Services , Guwahati	Data not provided	0	10	Data not provided	0	0	0
5.	Council of Baptist Churches in N.E India(CBCNEI)	40	30	17	129	132	46	12
6.	Doordarshan Kendra Tape Library	Data not provided	1691	0	0	0	0	0
7.	All India Radio	5000	9500	2000	4000	1500	3000	500
8.	Assam Textile Institute	154	2850	72	14	162	0	0

9.	Archival Cell and Manuscript section, K.K. Handique Library	Data not provided	Data not provided	4500	Data not provided	Data not provided	42351	Data not provided

Table 3:

Sl. no	Name of Library/Archive	Gazettes es	Histori cal Books	Acts	CDs/audio/video cassettes	Rare Books	Maps	Microform	Old Newspaper/ magazine
1.	Assam State Archive	1800	479	1198	0	146	1735	0	1062
2.	Department of Historical and Antiquarian Studies Library (DH AS)	200	19500	0	154	1300	20	0	1200
3.	Assam AdministrativeStaff College Library	0	0	0	83	0	0	0	12/29
4.	Directorate of Library Services ,Guwahati	0	2135	914	0	4575	0	0	756
5.	Council of Baptist Churches in N.E India(CBCN EI)	114	52	87	102	20	11	19	70
6.	Doordarshan Kendra Tape Library	0	0	0	24345	50	0	0	10 issues
7.	All India Radio	500	8000	0	40000	5000	50	0	2 issues
8.	Assam Textile Institute	0	0	0	0	0	0	0	64
9.	Archival Cell and Manuscript section, K.K. Handique Library	Data not provided	Data not provided	Data not provided	55	Data not provided	Data not provided	Data not provided	Data not provided

The above data shows non uniformity and inadequacy in collection development in all the surveyed libraries. Only All India Radio maintains a good collection.

5.2. **MANPOWER STRUCTURE:** A very crucial resource of any organization is its staff as it provides all possible aids to its users. A trained and dedicated staff is an invaluable asset of any library or archive. The following table.4 shows the manpower structure of the archives

Table. 4. Manpower Structure

Sl.No	Name of Library/Archive	Professional	Non-professional	Others
1.	Assam State Archive	10	19	10
2.	Department of Historical and Antiquarian Studies Library(DHAS)	1	1	2
3.	Assam Administrative Staff College Library	2	7	0
4.	Directorate of Library Services ,Guwahati	2	2	2
5.	Council of Baptist Churches in N.E India(CBCNEI)	0	1	3
6.	Doordarshan Kendra Tape Library	2	1	0
7.	All India Radio	2	2	0
8.	Assam Textile Institute	1	0	1
9.	Archival Cell and Manuscript section, K.K.Handique Library		2	1

The table above clearly depicts that there is a lack of proportionate and technically trained staff pattern in the libraries and archives surveyed.

5.3. **FINANCIAL SOURCES:** Though library is a non-profit organization yet it is supposed to be a growing organism. However, it cannot grow and develop without sufficient funds. Moreover, to keep pace with the latest technologies, adequate fund is a big need of every library and archive. Preservation and conservation methods need various equipment and technologies. Therefore, a well-structured budget and judicious selection of the specimen is very essential to accomplish this noble service. The table 5 below shows the financial position of the surveyed archives.

Table 5. Financial Status

Sl. No	Name of Library/Archive	Annual Budget Allocated(amount in lakhs)	Financial Sources (State/Central/Donation/Others)	Fund for Digitization
1.	Assam State Archive	Data Not provided	State and Central	0
2.	DHAS	2,00000lakhs-3,00000lakhs per year	Govt. of Assam	0
3.	Assam Administrative Staff College Library	Data not found	Data not found	0
4.	Directorate of Library Services	Data not provided	Govt. of Assam	0
5.	CBCNEI	1,20000	Mission Headquarter,Tangkhul	0
6.	Doordarshan Kendra Tape Library	Data not provided	Prasar Bharati	0
7.	All India Radio	Data not provided	Directorate AIR	☐
8.	Assam Textile Institute	Data not provided	Govt of Assam	0
9.	Archival Cell and Manuscript section,KKH L	60,000	Govt of Assam	0

The above data indicates that there is dearth of financial aid for preservation and conservation of archival documents in the surveyed libraries which maintain archive centers. Most of them receive State Government aids but no extra funds are allocated.

for digitization except the All India Radio Library which gets a sound amount for digitization.

5.4 USE OF PRESERVATION AND CONSERVATION METHODS: The modern technology has developed a variety of measures to protect the physical forms of records and ensure their durability and security such as fumigation, *lamination, microfilming, binding, photocopying, enclosures, encapsulation, digitization etc*. Some of these measures can be manually undertaken while few others are expensive or time consuming. The measures which are easy to use do not require much training while there are certain methods which require special training under the supervision of a trained conservator. The table no.6 shows the use of various methods to preserve and conserve the valuable documents.

Table 6. Application of preservation methods

Sl. No	Name of Library/Archive	Fumigation	Lamination	Microfilming	Binding	Digital Photocopying machine	Enclosure folders & Boxes	Encapsulation	Digitization
1.	Assam State Archive	□	□	□	□	□	□-	-	□
2.	DHAS	□	□-	□		□-			□
3.	Assam Administrative Staff College Library	Data not found	Data not found	Data not found	Data not found	Data not found	Data not found	Data not found	Data not found
4.	Directorate of Library Services	□-	-	-	□	□-	-	-	-
5.	CBCNEI	□-		□	□-		□-		□
6.	Doordarshan Kendra Tape Library	□-	-	-	-	-	-	-	□
7.	All India Radio	□	□	□	□	□-	-	-	□
8.	AssamTextile Institute	□	□-		□	□-	-	-	-
9.	Archival Cell & Manuscript section,K.K.HL	□	□	□-		□-		□	-

The table no.6 highlights the use of various preservative and conservative methods and technologies used in the surveyed libraries and archives.
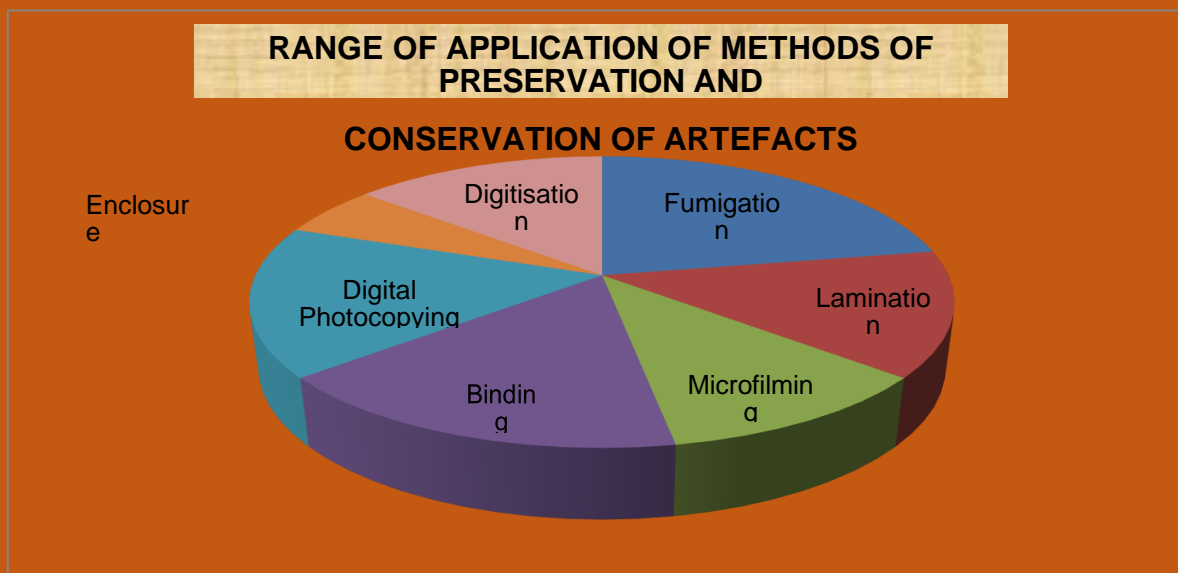

Figure 1: RANGE OF APPLICATION OF METHODS OF PRESERVATION AND CONSERVATION OF ARTEFACTS

The above figure shows the range of use of methods of preservation and conservation of valuable documents. The fig states that only 14% of the archive centers have been digitized while most of the archives use the traditional methods only.

6. EMERGING TECHNOLOGIES OF ARCHIVAL PRESERVATION:

With the change in society, the way of archiving also has changed from traditional to digital era. Application of information technology to Library and Information Science has provided wider opportunities in archiving and accessing knowledge in the digitized form besides conservation and preservation of the traditional knowledge. The author in this article has discussed mainly three emerging methods of preservation and conservation of archival documents

6.1. **ENCLOSURES:** The traditional method of storing manuscripts poses certain problems. Therefore, special types of devices called Enclosures are used to keep records. Enclosures are acid-free paper folders, boxes or plastic sleeves. They are specially used to store records and protect them from damage. Enclosures provide better physical protection, helps to absorb harmful gaseous emissions, keep the records free of noxious chemicals or products. Materials stored in enclosures can be easily stored and removed without any damage. Archives are required to make use of the highest quality of enclosures. According to table no.6 only Assam State Archive and CBCNEI uses this method to preserve manuscripts; old reports, rare books etc.Fig.2 & 3 are the images of enclosure folders and boxes for preservation of rare documents.

Fig.2: Enclosure Folder

Fig.3: Enclosure Boxes

6.2. **ENCAPSULATION:** Encapsulation is type of commercial 'pockets'. This method of preservation is mainly used to preserve fragile or brittle materials and thereby

helps to reduce the chance of mutilation while handling of items. Unlike lamination, encapsulation can be easily reversed by cutting off the edge seal and holding the polyester sheets together and then removes the item. The edges are sealed by the use of a small polyester wielding machine. Heat and ultrasonic sealing technique may also be used for encapsulation. However, one has to purchase these technologies and at the same time should also be trained for their maintenance.

Fig.4: **The process of encapsulation**

(a) Tools   **(b) Polyester Encapsulation**

Fig.5: Tools used for Encapsulation: White cotton gloves, polyester encapsulation film, double-sided encapsulating tape, weights, bone folders and scissors.

1.1. **DIGITIZATION:** In the present era, libraries and archives have drifted their collections from print version to technological alternatives in the form of e-book, films, film-strips, microfilms, microfiches, optical discs, sound recordings, magnetic media, and so on. To supersede print version, a relatively new concept, digitization has been introduced to preserve the useful items for future. Digital libraries have the potential to store large information, simply because digital information requires very little physical space to contain it. The building and maintenance cost of a digital library is much less than a traditional library.

Table.7: Status of Digitization of the Nine Libraries and archives

Sl.no	Name of Library/Archive	Software Used	Total Records	Total records Digitized	Status of digitization
1.	Assam State Archive	N.A	6 lakhs	47107	Scanning is on process
2.	DHAS	IGNCA	23800	2800	Scanning is on process
3.	Assam Administrative Staff College Library	N.A	50000	N.A	Not yet
4.	Directorate of Library Services	N.A	36566	N.A	Under process

5.	CBCNEI	GSDL	1298	1088	Scanning is on process
6.	Doordarshan Kendra Tape Library	ARCLIB	22845	780	Partially
7	All India Radio	NETIA	40000	25000	Partially
8.	Assam Textile Institute	N.A	3316	N.A	On process
9.	Archival Cell and Manuscript section, K.K.H.L	N.A	4500	1496	In CD form

The above table highlights the status digitization of the nine libraries and archive centers wherein it may be seen that only six (6) archive centers have started the process of digitizing their documents. Four libraries have installed digital library software and are under process. In this context, the author in this article has tried to highlight the steps of digitization, hardware and software requirements.

1.1.1. INFRASTRUCTURE: For creating a digital library we may use the following hardware and software:

1.1.1.1Hardware: a) Scanner- (Book Scanner of superior quality)

  b) Computer

  c) Storage device-i) CPU

  ii) USB external hard disk device (preferably 1TB or more)

6.3.1.2. Software: Right information, at the right time, and to the right person is only possible, if one chooses right technologies. In current digital era, open source software provides a solution for archiving digital documents for long-term preservation and access

6.3.1.3.Steps of digitization: Digitization is especially done to preserve rare documents that are out of print and rare and valuable resources like manuscripts, pictures and paintings, reports etc. Manuscripts are digitized by scanning an item and saving it to a digital format. The process of digitization includes the following steps:

a) **Scanning:** Scanning is the process of transforming the selected resources into electronic format (image form). It is quite expensive and time consuming for the organizations to digitize their holdings again and again. Moreover, original documents may get damaged from the handling and exposure to bright light required for digitization. Keeping in view the above point, 'scan once' (of the original documents) and create a master document for future use may be the best solution.

b) **Editing**: It includes the corrections of the document text and layout to avoid mistakes.

c) **Encryption:** This step enables the owner to restrict reproduction of the contents and thereby provides security of the library.

d) **Storage:** After editing the images and texts the backup of the scanned documents is to be taken in the USB external hard disk device (preferably 1TB) and also create PDF files of the

same.

e)   **Digitization Policy:** The library committee has to select suitable digital library software for the creation of a Digital library and also appoint proportionate and technically trained staff for the same.

f)   **Software selection:** Suitable and user friendly digital library software should be selected and installed as well. A well-structured digital library will provide greater benefit in remote access of the rare and valuable documents. It will also minimize the problem of space for physical storage of documents.

2   **SUGGESTIONS:** From the study the author have come to the following conclusion and forwards few suggestions for upliftment of the libraries and archival centers of Guwahati city.

2.1.   It is the need of the hour for all types of organizations to spread the awareness, education, training policies and the treatment options available for preservation and conservation of archives.

2.2.   The dearth of archives within the libraries needs to be resolved. It has become very crucial to preserve the rare documents which are found to be useful for the future.

7.3 The proper skill development and training of preservation is a pre-requisite of every organization. The field survey has revealed that majority of staff lacks proper training and knowledge of preservation and conservation. Moreover, they also lack knowledge about emerging technologies and as such reluctant to implement them.

7.4. Proper policy is required to improve the conditions of the existing archives. As such the authorities should take steps to formulate policies and programmes for conservation and preservation of archives.

3.   **CONCLUSION:** The study reveals that the libraries and archival centers of Guwahati city are yet to develop a lot in the field of preservation and conservation of documents for future use. Majority of the libraries are reluctant to use the emerging technologies of preservation and conservation of the artifacts as such they are in a very pathetic condition. Every library needs to maintain an archive section and serious attention is to be paid to preserve the rare collections and thereby protect them from loss and deterioration.

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