NATIONAL OPEN UNIVERSITY OF NIGERIA, ABUJA

DEPARTMENT OF LIBRARY AND INFORMATION SCIENCE
COURSE GUIDE

COURSE INFORMATION

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COURSE TEAM

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NATIONAL OPEN UNIVERSITY OF NIGERIA

LIS 411 LIBRARY ARCHITECTURE

Course Guide

Introduction

I want to welcome you to LIS 411; Library Architecture. This a 2 credit course that all final year (400) students are expected to offer and this will last for one semester. This course will expose students in the Department of Library and Information Science on how the architecture of a library should be in terms of building, facilities and space to provide good service delivery to users.

Course Aims

The main aim of this course is to equip students with the knowledge of library architecture so that they can know how to provide a conducive library environment required for users.

Learning Outcomes

At the end of this course, it is expected that students should be able to:

- explain the meaning, relevance and characteristics of library architecture
- know the history of library architecture from the Roman period to the present; architectural styles- modernism and post-modernism;
- discuss the components of library architecture: building, space, furniture
- design a community needs assessment;
- ascertain space needs programme and building programme;
- determine the composition of a library building committee
- assess the qualifications of an architect or a library consultant;
- elements of blueprint; the impact of electronic technologies on library facilities;
- know the elements of a 'Green' building programme and green libraries.

Working through this Course

Each student is expected to participate fully by going through the content in each Unit per module. The content of each Unit has been simplified for ease of understanding. There are also references and materials for further reading to provide additional materials for more knowledge. Each Unit has some questions (Self-Assessment Exercises - SAEs)that will assist your evaluation of the content of a unit and answers to these questions are provided at the end of a unit.

TABLE OF CONTENTS PAGE

Unit 1 Needs Assessment of Library Users

Unit 2 Space Needs

Unit 3 Formation of a Library Building Committee

Unit 4 Use of an Architect or Library Consultant

MODULE 1:　　　　　　CONCEPT OF LIBRARY ARCHITECTURE

This module introduces you to the concept of library architecture by defining library architecture and the characteristics of library architecture. The relevance of library architecture and the components of library architecture will also be discussed.

Unit 1:　　　Definition, relevance and characteristics of library architecture

Unit 2:　　　Components of library architecture

UNIT 1　Definition and Characteristics of LibraryArchitecture

Unit Structure

1.1 Introduction
1.2 Learning Outcomes
1.3   Definition of Library Architecture
　　　1.3.1　Definition of a library
　　　1.3.2　Definition of architecture
　　　1.3.3　Definition of library architecture
1.4 Relevance of Library architecture
1.5   Characteristics of library architecture
1.6   Summary
1.7Glossary
1.8   References/Further Readings
1.9   Possible Answers to Self-Assessment Exercises (SAEs)

1.1　Introduction

You are welcome to Unit 1 of this module. This Unit is on the definition of library, architecture and library architecture. This Unit will provide the background information for the understanding of the other modules for this course. This Unit will be interactive and will lay the foundation to understand the relevance of library architecture. I admonish you to pay attention and contribute so you will be able to gain all the required knowledge about the concept of library architecture. With good attention and participation, you will be able to answer all the questions correctly at the end of the Unit.

1.2 Learning Outcomes

By the end of this Unit, you will be able to:

    i.   define architecture

    ii.   define library architecture

    iii.   distinguish between architecture and library architecture

    iv.   highlight the characteristics of library architecture

1.3 Definition of Library Architecture

1.3.1 Definition of a library

At this level, you all will know what a library is and the different types of library available. However, let us define a library. A library is a collection of information resources in print or electronic format that are based on the information needs of users and are organized and disseminated to the users by professionals who are called library professionals. A modern-day library is user–centered, a place for social interaction where services are delivered using Information and Communication Technology (ICT) and are based on the information needs of users. Therefore, in a modern-day library, there are different services rendered to users through the deployment of ICT such as selective dissemination of information, information literacy, document delivery, outreach programmes and so on.

A modern-day library also has different rooms to take care of the needs of users such as rooms for discussion, learning spaces, maker spaces, collaborative spaces and different reading postures and incorporating new technologies.A modern library must have the following attributes: accessibility, inclusiveness, visibility, connectivity, flexibility, adaptability and be able to reflect people's changing interests. There are different types of libraries: school, academic (monotechnic, polytechnic, university), public, special and private.

11

Fig. 1. School Library (American School in Dubai)

https://encryptedtbn0.gstatic.com/images?q=tbn:ANd9GcTUEIKo0iwFvDB1jOAbuVMz
Q-P8LxxZIwQECJwPAYVeVkxxyWp48Wg8caF7NnXundlo0oQ&usqp=CAU

Fig. 2. Academic Library (University College London)

https://encryptedtbn0.gstatic.com/images?q=tbn:ANd9GcQmHxZDkrGb9y3c5JD0MTV
gC4-rRCypIzV-iw&usqp=CAU

Fig. 3. Post-Pandemic Public Library

https://encryptedtbn0.gstatic.com/images?q=tbn:ANd9GcR038_a0lMtMkTcDyKQJV7g4ggAo5t7Ntitzw&usqp=CAU
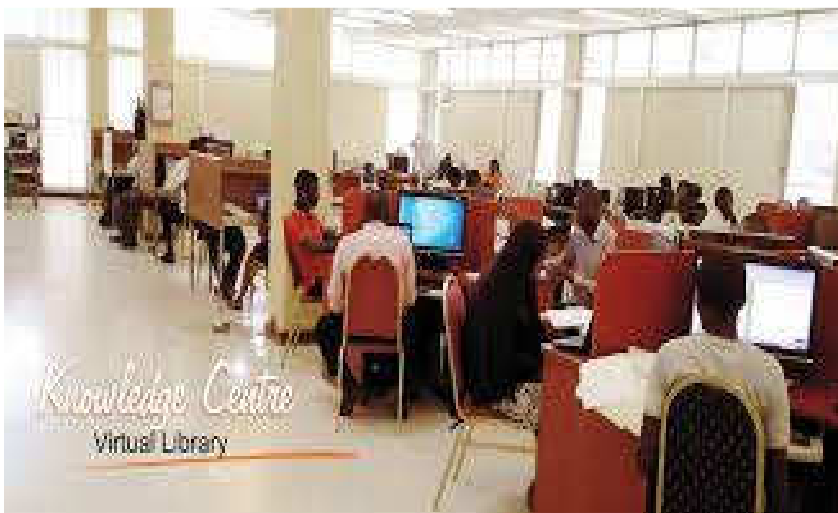
Fig. 4 Special Library (IITA Knowledge Centre, Ibadan)

https://www.google.com/url?sa=i&url=https%3A%2F%2Fwww.facebook.com%2Fknow

By going through these two links, you will be able to know what a modern library in the 21st century should be.

How public libraries were and where they are now can be viewed in this link:

Evolution of public libraries to the 21st Century

https://blog.pressreader.com/libraries-institutions/21st-century-library-evolution-timeline

This is a video to show the 15 most impressive libraries in the world

https://www.youtube.com/watch?v=brp1usbA4_4

1.3.2   Definition of architecture

Collins dictionary explained architecture as the art of planning, designing, and constructing buildings, whilePrelvujal and Rada (2020) defined architecture as a science of construction using materials, colours and so on to meet the client's desires.

1.3.3   Definition of library architecture

Library architecture can be referred to as the act of designing and building a library which is determined by the requirement of the clientele and the staff in the library. This involves making use of colours, lightings, interior designs and artworks to make the structure attractive to users and consequently lead to increased use of facilities and information resources.

> **Self-Assessment Exercise 1:   This will take you 3 minutes to answer.**
> 1. Define a library and list four types of libraries.
> 2. What are some features that a modern library should have?
> 3. Explain what you understand by library architecture.

1.4   Relevance of Library architecture

Library architecture involves conceptualizing a structure that will have good aesthetics, a functional interior to cater for the need of the staff and users. This indicates that the creation of spaces and services that will meet the current and future needs of the users and staff must be taken into consideration when a new building or an old library building for the 21st century is to be constructed. The implication for a good library architecture is to facilitate the satisfaction of the clientele's information preferences through the delivery of relevant services with good technology infrastructure. This will consequently, make the library to remain relevant to users.

A good and functional library architecture should have the requisite infrastructure that will change the building due to changes in the users' preferences. This must also include

necessary spaces that will promote learning, teaching and research to enhance meeting the objective for the establishment of the library. The library architecture is significant to support diversity, equity and inclusion of the users, so that the library will be seen as functional and efficient in meeting the information needs of the users they serve.

Duckett, Lippincott and Vedantham (2014) reported that library architectureprovides usersand library staff a place of leisure and recreation for all category of users. This is corroborated byMattern (2014) that library architecture serves as a place for social interactions for people within a community or organization. Figueroa (2015)ascertained that library architecture has an important role in the delivery of relevant services to clientele. Therefore, library architecture is a significant issue that needs to be considered when planning a new library or renovating an old one because it will determine the level of use by clientele and the type of services delivered to the clientele by library personnel.

Self-Assessment Exercise 2:   This will take you 3 minutes to answer.
1. Explain the relevance of library architecture.

1.5. Characteristics of Library Architecture

The characteristics of library architecture can be listed as follows:

i.   The building must be based on the information gap of users

ii.   Design must take into consideration all the space requirements

iii. Infrastructure and facilities must consider the present and future needs of the users.

Self-Assessment Exercise 3:   This will take you 3 minutes to answer.
1. Write on three characteristics of library architecture.

1.6   Summary

This is the end of Unit 1. I hope you were able to get the basic knowledge of a modern library and library architecture. In this Unit, library was defined and we moved on to highlighting what a modern library should have. It was explained that a modern library is

a place that allows for social interaction because there are spaces that cater for the information needs of users such as spaces for learning, reading, discussion which are mediated with ICT based on the diversified needs of the users. There were three self-assessed questions that I asked you and I hope you were able to answer them very well. At the end of the Unit, I provided answers to these questions and you can evaluate yourself. I hope you were able to score a minimum of 60%, if yes, congratulations. If not, then you need to go through the content of this Unit again to acquire the required knowledge before moving to Unit 2. In Unit 2, we shall be discussing the relevance of library architecture to different libraries.

1.7   Glossary

1. Library: is a collection of both print and electronic information materials that are catalogued, classified and disseminated to users.

2. Library architecture: This is the design and actual physical building of a library to satisfy the information gaps of clientele and library personnel.

1.8   References/Further Readings

Duckett, K, Lippincott, J, &Vedantham, A. (2014). Libraries as Enablers of Pedagogical and Curricular Change. Educause Review. Colorado: Educause. Retrieved from http://www.educause.edu/ero/article/libraries-enablers-pedagogical-and-curricular-change

Figueroa, M. (2015). Forecasting the Future of Libraries, American Libraries Magazine, Retrieved from http://americanlibrariesmagazine.org/2015/02/26/forecasting-the-future-of-libraries-2015/12thMay 2016.

Mattern, S. (2014). Library as Infrastructure, Places Journal. Retrieved from https://placesjournal.org/article/library-as-infrastructure/2ndMay 2016.
Prelvukaj, Z. and Rada, A. (2020). "Contemporary architecture of social buildings and importance of their photographic presentation" (2020). UBT International Conference. 374.https://knowledgecenter.ubt-uni.net/conference/2020/all_events/374

https://www.collinsdictionary.com/dictionary/english/architecture

1.9 Possible Answers to Self-Assessment Exercises (SAEs)

> **Self-Assessment Exercise 1:   This will take you 2 minutes to answer.**
> 1. Define a library and list four types of libraries.
> 2. What are some features that a modern library should have?
> 3. Explain what you understand by library architecture

ANSWERS to SAE1:

1.   Define a library and list four types of libraries.

A library is a collection of print and electronic information resources organized and disseminated to users by professionals called library professionals. Four types of librariesare: special, school, public, academic and private.

2.   What are some features that a modern library should have?

A modern library should have print and electronic resources, spaces for learning,discussion, interaction and services rendered using ICT.

3.   Explain what you understand by library architecture

Library architecture is the design and actual building of a library based on the users' and staff's requirements of information.

> **Self-Assessment Exercise 2:   This will take you 3 minutes to answer.**
> 1. Explain the relevance of library architecture.

ANSWERS to SAE2:

Library architecture is important to both users and library staff. Library architecture should take into consideration the users and library staff needs as this will determine the usage of the library information resources and services and also the productivity of the library staff. A library with good architecture will attract users to the library and it will be a good workplace for the staff to carry out their responsibilities.

1.5. Characteristics of Library Architecture

> **Self-Assessment Exercise 3:   This will take you 3 minutes to answer.**
> 1. Write on three characteristics of library architecture.

ANSWERS to SAE3:

2. Write on three characteristics of library architecture.

i.   The building must be based on the information gaps of users

ii. Design must take into consideration all the space requirements

iii. Infrastructure and facilities must consider the present and future needs of the users.

UNIT 2   Components of Library Architecture

Unit Structure

2.1   Introduction
2.2   Learning Outcomes
2.3   Physical components
        2.3.1   Building
        2.3.2   Space requirement
        2.3.3   Furniture
2.4   Human components
2.4.1 Users and their needs
        2.4.2   Librarian and other staff
        2.4.3   Architect
2.5   Summary
2.6   Glossary
2.7   References/Further Readings
2.8   Possible Answers to Self-Assessment Exercises (SAEs)

2.1 Introduction

I welcome you to Unit 2. This Unit will discuss the components of library architecture. What are the constituents of library architecture will be the focus of the Unit. The components of library architecture that will be discussed are the physical and human. This Unit will provide information on what to consider when you are thinking of library architecture. I have included some questions for you to evaluate your knowledge on components of library architecture at the end of each subheading in this Unit. I am convinced that you will be able to answer almost all if not all of the questions. Let's move now.

2.2 Learning Outcomes

By the end of this Unit, you will be able to know the:

    i.   physical components of library architecture and their importance

    ii.   human components of library architecture and their relevance

2.3 Physical components

2.3.1 Building

A library building is a physically located and set apart building to be predominantly used for the storage of, and access to the library information resources and services. To plan a library building, the library personnel must investigate the information gaps of clientele and use this in designing the building. Another factor to consider for a library building is the requirements of the library personnel in terms of activities that they are involved for effective service delivery.

In the design process, the determination of a site for the library building is a very crucial thing that should be at the top of the list for library building.For the best site to be chosen, the library personnel should look at accessibility to site and issues of security.The size of the building is based on the number of clientele and for big libraries, the building will involve many floors to cater for the large number of people who use or will be using the library.

The building of new libraries is not a frequent activity that library personnel are engaged in, because it involves a lot of planning, time and availability of funds.Awala-Ale (2013) also noted that library building has changed over centuries in response to five major influences: the form in which information is recorded, the nature of library use and readership, technological development in both architecture and librarianship, the availability of funds and recognition of traditional architecture as part of the cultural heritage.

2.3.2 Space requirement

Space is required in a library to cater for all the activities that are carried out to fulfill the goal of the establishment of the library. The space for the different rooms such as for reading, collection of information resources, group discussion, meetings, staff offices, computer workstations, lounge and so on must be estimated and included for the new library building design. The availability of the required space in a library is expected to meet the objective and facilitate the delivery of high-quality services. The design should recognize the crucial importance of users, books and information technology and the complex and dynamic relationships between them.

The library should plan for spaces for learning, collaboration, recreation, interaction for users and services, document storage, library equipment and service areas and all these spaces should be flexible and easy to change based on the varying needs of users. The planning for a library building should consider the future in terms of expansion in the size of users, collection and equipment. Estimates of the space needs for these activities must be calculated by the librarian and library staff and communicated to the architect who uses it for the designing of the new library building.

2.3.3 Furniture

Furniture is an important factor in a library as this could determine the use of the library by users. The information need of the users is a strong determining factor of the type of furniture, as the users are the ultimate users of the library collections and services. Since the users have different preferences for the environment, the librarian should also provide different furniture that will be conducive to the users (Agati Furniture, 2022).

The FLP libraries were re-designed with the architect taking into consideration the various needs of the users of the three branches and using that to provide a design that met the needs of the specific community. The architect was able to give a library building

plan based on knowing user needs from conducting users' surveys and integration of digital resources and facilities (Fig. 5). Another example of furniture in a library is Fig. 6.

Fig 5. FLP Libraries

In New York University, a new design for their study carrel and the space allowed for student-athletes to individual study space to computer laboratories was introduced. This was based on the needs of the student-athletes to provide individual spaces for the students to study and achieve good academic success (Fig. 7).

Fig. 6 Furniture at College of Idaho Library, Caldwell

Fig. 7. Furniture at New York University Library

Self-Assessment Exercise 1:   This will take you 5 minutes to answer.

1. Why do you think the type of building should be considered for a library?
2. Write on the importance of space requirements for a library.
3. Why do you need to consider the type of furniture in a library?

2.4   Human Components

2.4.1   Users and their needs

The goal of a library is to provide adequate resources and conditions to satisfy the diverse information needs of users in a community. Therefore, in the planning of a library building, the architects, building designers and librarians and other stakeholders must know what the users need and take this into consideration in the design of the library building and its interior spaces.

The need of users is important for library architecture and so the current and future needs of the users be considered for the architecture of the library. For libraries to remain relevant in information service provision, the changing needs and demands must be a priority in the design for the architecture and services of a library. The determination of the needs of users is referred to as needs assessment.

Needs assessment is explained as the identification of needs, allocating resources and providing services based on what the individuals in a community require (Altschuld and Kumar, 2010). This means that the librarian needs to collect data from users about their information needs and analyze them to develop plans and services that will suit meeting the identified needs and evaluate the success of these plans and services. The assessment of users' needs is of significance in any library in the determination of the spaces, information resources and services that are required to satisfy the clientele of the library.

Libraries should learn about the needs of the members of the community it serves, including new and established members, library clientele, and non-clientele. The

analysisof thecharacteristics of a community can be determined by the library through a survey or by placing a box in a public place where the people can drop their comments. The use of a comment box must be advertised to the people by the library reflecting the reason, importance, aims and benefit to the community. The library will now harness all the comments, analyse and come up with a report to reflect the needs of the community.

The needs of the users can be sought through a survey by sending out questionnaires to the users or use of interviews and focus group discussions. The library staff must ensure that questions to be asked are tailored towards getting data from the users that will assist the library in making decisions that will favour the users, so that the library information resources and services will be used maximally. The use of more than one method for the needs identification of users is encouraged so that the result received could be more authentic.

A new library may consider liaising with organizations as partners who have already been working in communities for many years to know the needs of the people in a community.This will lessen the stress and burden involved in identifying the needs of the clientele by the library. These organizations will assist the library to identify the relevant group of people in the community who will be people that will participate in the focus group or can be interviewed.However, the use of more than one method to determine the information needs of the users is better as this will provide a more reliable result.
Do you think conducting an information needs assessment of users by library staff is a waste of time?

2.4.2 Librarian and other staff

The librarian and the other staff in the library are the ones that carry out various activities and responsibilities in the library to satisfy the information needs of clientele. They are involved in the day-to-day affairs of the library and therefore should be included in the committee for a new building or in the renovation of an old building. The library staff

should conduct a user needs assessment to know what the present and future library users need and also conduct a space needs assessment to know the space that will be required in the new building which is a reflection on the needs of users and services that are to be delivered.

2.4.3 Architect

An architect is a professional that specializes in the design of structures for housing libraries. An architect is always a part of the library building committee because he is the professional that is skillful in producing drawings and designs for the library building based on the briefing he has received from the library staff. He is expected to put all the expectations into a drawing and come up with the design to show the library staff. The architect must therefore have good listening ears to take down all that is needed for the new library building and transform it into a library design that will be shown and explained to the library team.

The selection of an architect is an important decision in planning new construction or renovation as most library buildings are intended to be permanent and their physical appearance makes a statement about the institution or community they serve. The architect who is a professional, should provide a design that is focused on the requirement of the library as briefed to him by the library personnel. This requires that the architect is conversant with new technology and library designs so as to produce a modern design for a library building. The new building must be functional and fulfill the purpose of building a new one which is to increase the use of its information resources and services by clientele.

Self-Assessment Exercise 2:   This will take you 5 minutes to answer.

1. Write on why users are a component of library architecture.
2. Explain the role of a librarian and library staff in library architecture.
3. The architect is a human component of library architecture. Why?

2.5   Summary

Unit 2 has ended and I hope you found it interesting. In this Unit, we discussed components of library architecture and we grouped this into physical and human components. We explained that physical components comprise the building, space requirement and furniture, while human components consist of the librarian and other staff and the architect. I asked you some self-assessment questions at the end of each of the sections and I hope you were able to answer the questions correctly. You can go to the end of the Unit to see the answers to the questions and assess yourself. I wish you all the best.

2.6   Glossary

1.   **Space requirements:** This is the space that is needed in the new library building.

2.7   References/Further Readings

Agati Furniture (2022). A practical guide to choosing the right furniture for your library. https://www.agati.com/wp-content/uploads/2018/01/Agati-Furniture-Book-2017.pdf

Altschuld, J. W. and Kumar, D. D. (2010.) Needs assessment: An overview. Washington, DC: SAGE Publications, Inc.

Awala-Ale, I. (2002). An appraisal of conservation of library materials in Nigeria; A seminar paper presented to the Department of Library and Information Science. Delta State University, Abraka.

2.8   Possible Answers to Self-Assessment Exercises (SAEs)

Self-Assessment Exercise 1:   This will take you 5 minutes to answer.

1. Why do you think the type of building should be considered for a library?
2. Write on the importance of space requirements for a library.
3. Why do you need to consider the type of furniture in a library?

ANSWERS to SAE1:

1. Why do you think the type of building should be considered for a library?

The type of the building should be considered by a library because the library is meant to serve users and the type of building planned to be built should be one that will be user-centered so that the building when completed will be used maximally by the users. Therefore, the planning of a library building requires a thorough understanding of the needs of the users.

2. Write on the importance of space requirements for a library.

The size of the new library building will be determined by the spaces required for the various rooms for services and activities carried out in the library. The library staff therefore must know all the different spaces required and provide an estimate for each that can be summed up as the total space requirement which will serve as the space needs that has to be catered for in the new library.

3. Why do you need to consider the type of furniture in a library?

The type of furniture in a library has to be considered based on the available space, the type of the library and the needs of the users. The kind of furniture in a school library will not be appropriate for a university library because of differences in the type of users.

Self-Assessment Exercise 2:   This will take you 5 minutes to answer.

1. Write on why users are a component of library architecture.
2. Explain the role of a librarian and library staff in library architecture.
3. The architect is a human component of library architecture. Why?

ANSWERS to SAE 2

1. Write on why users are a component of library architecture.

Users are a component of library architecture because they are the people who use the library and their needs must be investigated and used to determine the appropriate architecture for a library.

2. Explain the role of a librarian and library staff in library architecture.

The librarian and the library staff are the arrowheads of any library architecture as they are the ones that know the needs of the users and the space requirement for the delivery of effective services to users. This group of staff will ensure that the needs and the space requirement is communicated clearly to the architect who draws up the design for the library building and which is vetted by them.

3. The architect is a human component of library architecture. Why?

The architect is a human component of library architecture because he is the professional that will draw the design for the library building based on the briefing given to him by the librarian and library staff.

MODULE 2 HISTORY OF LIBRARY ARCHITECTURE

Unit 1:   Roman Empire

Unit 2:   Modernism and post modernism

UNIT 1 ROMAN EMPIRE

Unit Structure

1.3   Introduction
1.2 Learning Outcomes
1.3   Library Architecture in the Roman Empire
1.4 Summary
1.5   Glossary
1.6   References/Further Readings
2.7   Possible Answers to Self-Assessment Exercises (SAEs)

1.1   Introduction

I welcome you to Unit 1 of the module on the History of Library Architecture. In this Unit, we will be discussing the history of library architecture in the Roman empire. This Unit is going to be an interactive lesson so I need your cooperation to study the contents of this Unit very well so you can gain all the necessary knowledge. I will be asking you some questions on the Self-Assessment Exercises (SAE) at the end of this Unit. Go through these questions and try to answer them. I believe you should be able to score high marks. If not, please check the answers to the questions at the end of this Unit.

1.2   Learning Outcomes

By the end of this Unit, you should be able to:

i.   Highlight the history of library architecture

ii. Explain how library architecture started in the roman empire

1.3   Library architecture in the Roman Empire

The Haeinsa Monastery(Fig.8)has the Tripitaka Koreana which is the complete collection of the Buddhist doctrinal texts in the world. The Haesina is acclaimed as the largest wooden storage facility in the world and contains woodblocks that are used for printing before the era of the printing press. The woodblocks are stored on shelves.

Fig. 8. Haeinsa Monastery (802, Mount Gaya, Korea):

The BibliotecaMarciana(Fig. 9) was designed by Renaissance architect Jacopo Sansovino and is located on St. Mark's Piazza, Italy. It is one of the oldest surviving libraries in Italy and contains one of the greatest collections of classical texts in the world. In the library, books were held by long chains to the lecterns which were in rows to secure them from theft.

Fig. 9. BibliotecaMarciana(1564, Venice)

The Trinity College Library (Fig. 10) is the largest library in Ireland. Originally, there were no books in the galleries, but this was changed to accommodate the books that accumulated after the library got the permission for legal deposit.

Fig. 10. Trinity College Library (1732, Dublin)

The Radcliffe Camera (Fig.11) was the first circular library constructed in England and the architectural design and the building is centered around a dome. The library reflects the English Palladian architecture.
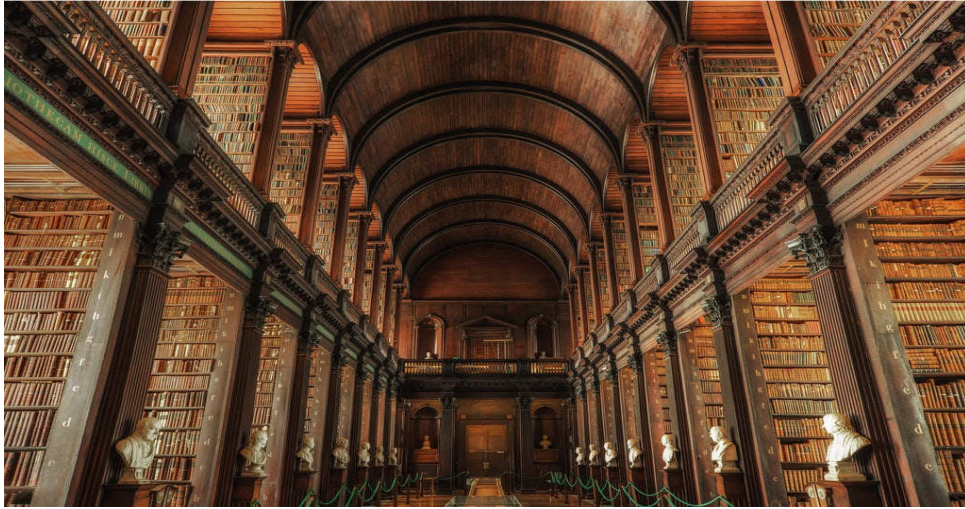
Fig. 11 Radcliffe Camera (1749, Oxford, England)

Admont Monastery Library(Figs. 12 & 13) is the second-longest monastic libraries in the world. The library was primarily used as to showcase the collections of the Monastery and the walls were painted white and the books were also bound in white leather.

Fig. 12. Amont Library in the Monastery
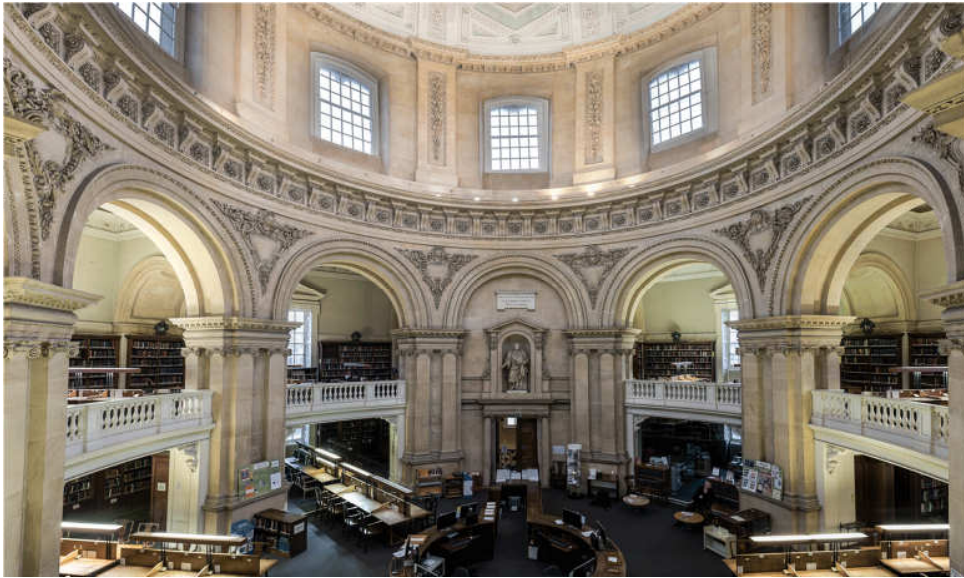
Fig. 13 Admont Library (1776, Admont, Austria)

The largest library in Paris is located in the heart of the Bibliothèque Sainte-Geneviève (Fig. 14)and was designed to resemble the Beaux-Arts train stations being built around the same time. Presently, cast iron is being used to improve on library architecture to provide better and more attractive designs.

Fig. 14Bibliothèque Sainte-Geneviève (1850, Paris)

1.4   Summary

In this Unit, we looked at libraries that were established in the Roman Empire. We also highlighted some features about them. I asked you a self-assessment question at the end of the section. I hope you were able to answer the question correctly. Please go to the end of this Unit to see the answers and grade yourself. I hope you were able to do very well.

1.5   Glossary

Libraries in Roman empire: collection of information materials in the roman empire

1.6   References/Further Readings

Libraries in the Ancient World - World History Encyclopedia. https://www.worldhistory.org/article/1428/libraries-in-the-ancie

1.7   Possible Answers to Self-Assessment Exercises (SAEs)

Self-Assessment Exercise 1:   This will take you 3 minutes to answer.

1. Write briefly on three libraries that were found in the Roman empire.

ANSWERS to SAE1:

Write briefly on three libraries that were found in the Roman empire.

1. The Trinity College Library (Fig. 10) is the largest library in Ireland. Originally, there were no books in the galleries, but presently books are now located in the gallery as the library has the legal deposit rights

2. The BibliotecaMarciana (Fig. 14)is located on St. Mark's Piazza. It is one of the oldest surviving libraries in Italy and contains one of the greatest collections of classical texts in the world. Originally, the books were secured by long iron chains to the lecterns, which stood in rows like school desks to prevent theft.

3. The Admont Monastery library (Figs. 12 & 13) is one of the longest monastic libraries in the world. The library was never used for study, but as a place to proudly display the Monastery's collection, with the walls painted in white and the books also originally bound in white leather.

UNIT 2:   **Modernism and Post Modernism**

Unit Structure

2.2   Introduction
2.2   Learning Outcomes
2.3   Development in learning spaces
    2.3.1   Information commons
    2.3.2   Learning commons
    2.3.3   Library learning spaces
2.4Summary
2.5   Glossary
2.6   References/Further Readings
2.7   Possible Answers to Self-Assessment Exercises (SAEs)

2.1   Introduction

You are welcome to Unit 2. In this Unit, we will be discussing modern libraries. This Unit will be discussing new innovation in libraries such as learning spaces. The discussion is going to be an interactive one. I will be asking you some questions on the Self-Assessment Exercises (SAE) at the end of this Unit. Go through these questions and try to answer them. I believe you should be able to score high marks. If not, please check the answers to the questions at the end of this Unit.

2.2   Learning Outcomes

By the end of this Unit, you should be able to:

i. explain the new development in learning spaces into modern libraries

ii. discuss the relevance of learning spaces in modern libraries

2.3 Development in Learning Spaces

In modern libraries, due to the information needs of users, libraries have created new spaces in the library such as information commons, learning commons and learning spaces. Learning spaces in higher education began in early 1990s with the introduction of Information and Communication Technology (ICT) which led to changes in the traditional college classroom. The ICT that were introduced include wireless connections, use of power-point presentations with web content and searching integrated into class lectures (Head, 2016). This culminated into the era of information commons, learning commons and learning spaces.The information afforded the students with trained staff, technology support and reference services.

These learning spaces afford the library to be continually seen as an intellectual and cultural place that responds to users' varied needs and emerging technologies to meet these needs. Academic libraries provide collaborative spaces that students and lecturers view as comfortable, convenient, flexible and productive in meeting learning and teaching needs. There are different phases of development in learning spaces in academic libraries:

1. Information commons
2. Learning commons
3. Library learning spaces

2.3.1 Information commons

Information commons are spaces allocated in the library to reduce the gap between physical and virtual spaces. It is a common space in academic libraries where there is an interaction with technology, obtaining information and learning for users. Information commons came to be in early 1990's to address the electronic revolution that libraries were facing (Steiner & Holley, 2009). The relevance of having an Information

commonsin a library is for information referral, expertise, and collaboration among clientele. In academic libraries, Information commons are created to meet learning needs for different users and create alliances with academic units and departments.The Information commons facilitates the provision of space for collaboration and interaction among lecturers, instructors and students.

2.3.2 Learning commons

This space began in the first decade of 2000s as service hubs for learning, research, engagement and collaboration.Students and lecturers can work in groups for discussion as there are small rooms created in the library for discussion, so students and lecturers can study individually and as a group in the library. This model also allows for meeting between lecturers and students and consequently, this enhances learning. The availability and accessibility to ICTs in the learning commons also facilitates learning as students and other library users can use these ICTs for their various information activities.

Wolfe, Naylor, &Drueke (2010) reported that one of the advantages of having learning commons is that it allows for interaction and collaboration among users to increase learning and achieve academic tasks. This leads to the importance of the role of reference librarians in learning commons as they provide instructions and technology support that will facilitate learning.The learning commons model could incorporate academic support units such as IT, writing center, distance education, English as a Second Language (ESL) and tutoring services into them, so that users can readily have access to these services within the library. The creation of information commons will increase the use of the library by users physically and virtually.

2.3.3 Library learning spaces

The main objective of creating library learning spaces is the provision of connection of students and other library users to technology, information and co-curriculum learning (Head, 2016). This co-curriculum learning is one that complements formal classroom

engagements, programmes and experiences that contribute to student learning which can be done within and outside the classroom.

The learning classrooms are generally equipped with both collaborative space and high-technology features, including video screens, round tables (fitting three teams of three students each), three laptops (one per team), wiring for video plug-ins, and data cables (Soderdahl, 2011). The premise for such classrooms is based on student learning; as students learn more when interacting with each other, the professor, and the materials in front of them than from a traditional lecture. The classroom will offer flexible uses of technology, with smallgroup displays allowing for screen sharing within student groups and for instructors to project student work ontowhiteboard walls. This technology will allow students to share digital resources, including library e-collections (Karasic, 2016).

A benefit for designing learning spaces in libraries is to improve the learning abilities of students and research for lecturers. However, they are not limited to an opening of up special collections with space and programming to engage students at all levels; active learning spaces (e.g., labs); content and media production spaces;makerspaces; and spaces programmed to support student success. Examples of learning spaces are group study areas, learning commons, library classrooms, and quiet reading areas.The creation of these spaces must align with the learning priorities of the parent institution. This implies that the creation of learning spaces in libraries should be based on the goals of the institution and the users' needs.

In planning for a learning space in a library, the library staff should be versatile so as to be able to modify and re-arrange the library to include spaces for meeting/ group or discussion, computer laboratory and makerspacesto facilitate different learning activities. Consequently, the expectation of such a learning space is to support the teaching and learning for students, lecturers and other library users. Head (2016) concluded that a modern learning space should have active learning classrooms,

immersive media laboratories or digital training classrooms with the latest software for users.

North Central State University's brand new library (Fig.15)is run by robots (BookBots). BookBots are programmed to retrieve any of the library's 1.5 million books in less than five minutes. This system uses one-ninth of the space needed for open stacks, freeing up valuable square footage for study rooms, learning commons, auditoriums and a Makerspace, which has 3D printers, a 3D scanner and a laser cutter.
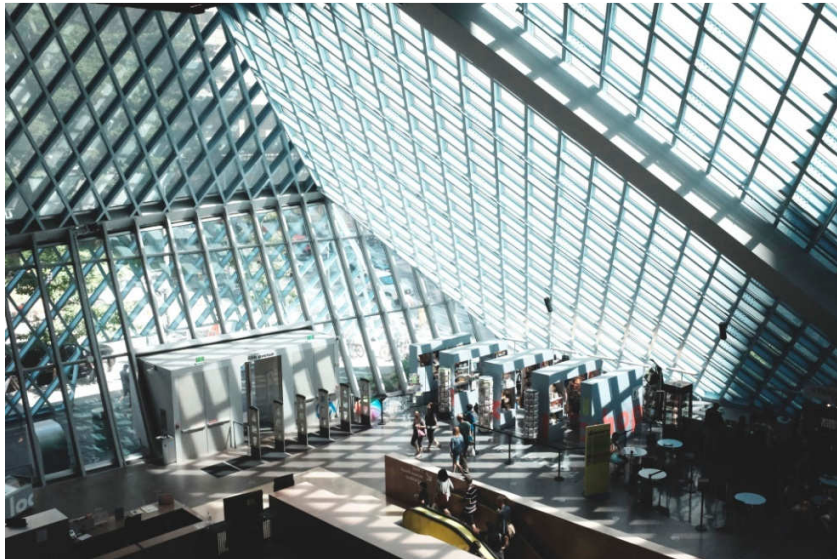
Fig. 15.James B. Hunt Jr. Library (2013, NC State University, Raleigh, North Carolina)

Self-Assessment Exercise 1:   This will take you 5 minutes to answer.

1.   Explain the relevance of learning spaces in modern libraries
2.   Distinguish between learning common and learning spaces

2.4   Summary

We have successfully come to the end of Unit 2. I hope it was amazing to you with the many pictures of modern libraries. The discussion in this Unit was on modern libraries. We explained the innovation in modern libraries with the creation of learning spaces for users. We also highlighted the major types of learning spaces as information spaces, learning commons and learning spaces. I asked you some self-assessment questions at the end of the section. My expectation is that you were able to answer most of the questions correctly.I have provided answers to these questions that will assist you in evaluation yourself at the end of the Unit. Do not give up, if you did not score high marks as the first trial. Go back and revise the content of the Unit and try the questions again. I am sure you will score higher marks this second time.

2.5   Glossary

Learning commons: This is a space in the library that can be used by any library user for group discussion, meetings to promote learning.

Learning spaces: These are spaces in the library created to accommodate academic and collaborative learning outside the classroom

2.6   References/Further Readings

Head, A. J. (2016). Planning and Designing Academic Library Spaces: Expert Perspectives of Architects, Librarians and Library Consultants. http://projectinfolit.org https://ebookfriendly.com/wp-content/uploads/2013/04/Most-stunning-modern-libraries-from-around-the-world.jpg (see 37 modern libraries)

Karasic, V. (2016). From Commons to Classrooms: The evolution of Learning Spaces in Academic Libraries. *Journal of Learning Spaces*, 5(2): 53 – 60.

Soderdahl, P. A. (2011). Library classroom renovated as an active learning classroom. *Library Hi Tech*, 29(1), 83-90. doi: 10.1108/07378831111116921

Steiner, H. M., & Holley, R. P. (2009). The past, present, and possibilities of commons in the academic library. *Reference Librarian*, 50(4), 309-332. doi: 10.1080/02763870903103645

Wolfe, J. A., Naylor, T., &Drueke, J. (2010). The role of the academic reference librarian in the learning commons. Reference & User Services Quarterly, 50(2), 108-113.

2.7   Possible Answers to Self-Assessment Exercises (SAEs)

Self-Assessment Exercise 1:   This will take you 5 minutes to answer.

1. Explain the relevance of learning spaces in modern libraries

2. Distinguish between learning common and learning spaces

ANSWERS to SAE1:

1. **Explain the relevance of learning spaces in modern libraries**

   Learning has been realized to occur not only in the classroom, but also outside the classroom. With this realization and identification of the information needs, libraries have created these spaces to allow for learning to take place between students, students and their lecturers in settings outside the classroom.The purpose of the library in doing this is to ensure that the library meets the needs of the users.

2. **Distinguish between learning common and learning spaces**

   Spaces designated as learning common can be used by any library user at any time, while those as learning spaces are used by groups of library users for learning at a specific time e.g. a group of 200 level students having a discussion meeting will use a learning space and not learning common.

MODULE 3 COMPONENTS OF LIBRARY ARCHITECTURE

Unit 1:   Library Building

Unit 2:   Library Space

Unit 3:   Library Furniture

Unit 4:   Emerging Trends in Library Design

UNIT 1:   Library Building

Unit Structure

1.1   Introduction
1.2   Learning Outcomes
1.3   Library Building
    1.3.1   Characteristics of a library building
    1.3.2   Library building plan and its benefits
    1.3.3   Planningfor a library building
1.4   Summary
1.5   Glossary
1.6   References/Further Readings
1.7   Possible Answers to Self-Assessment Exercises (SAEs)

1.1 Introduction

I welcome you to Unit 1 of this Module on components of library architecture. In this Unit, we shall be discussing library building. Our focus will be on characteristics, and planning for a library building. This Unit will be an interactive lesson so you can gain the required knowledge. I have set some questions as Self-Assessment Exercises (SAE) at the end of each main section and provided answers which you can use to assess your level of knowledge acquisition. All the best.

1.2 Learning Outcomes

By the end of the Unit, you will be able to:

 i. Know the characteristics of a library building.
 ii. Discuss how to plan a library building.

1.3 Library Building

1.3.1 Characteristics of a library building

A good library building must include some very important qualities and characteristics as reported by Metcalf (2015). He concluded that, ideally, a good library building should be:

1. **Functional**: A library building should have functional design with spaces that works well, looks good, easy to use, economical to operate and lasts well. The space must enable the library to fulfill its role and facilitate the delivery of high-quality services. The design should recognize the crucial importance of users, information resources and information technology and the complex and dynamic relationships between them. The building should be built economically so that it can be maintained with minimum staff and finance.

2. **Adaptable**: This means the creation of a flexible space in a library that can easily be changed. It is important to achieve a high degree of flexibility in the building so that the use of space can easily be changed with the minimum of disruption, merely by rearranging the furniture, shelving and equipment whenever the need arise in the future.

3. **Accessible**: The library is the heart of the institution and organization and plays a strong role in the learning, teaching and research processes within the institution and organization. It should be as accessible as possible, encouraging and inviting people to make full use of the services it provides.

4. **Varied**: with a choice of learning, research and recreational spaces and for different media. The library building should provide access to both traditional and electronic resources, and an increasing amount space is devoted to IT services. A variety of spaces can be created using different furniture, lighting and noise levels.A library should have awell-organised space which promotes contact between users and services.

5. **Conducive environment:** A librarybuilding should have a conducive environment that is suitablewith appropriate conditions for users, information resources, ICT equipment, ideal temperature, humidity, where dust and pollution levels should all be controlled. The building should be safe and securefor users and staff, collections, equipment, data and the building. Particular attention should be paid to the design of workstations and other ICT equipment. The use of colours, lightings, interior designs and the artworks play a big part in creating a particular ambience.

6. **Extendable**: The library building should be built with future in mind, possibly with 20-25 years keeping in view of rate of stock development, number of users, future use of information technology, new sections. The building should be extendable to allow for future growth with minimum changes or alterations.

1.3.2 Library Building plan and its benefits

A plan is a flexible document seasoned by specific local needs and most building plans should describe the library and user's needs, library's service area and communities, goals and objectives and the details of services. Activities, personnel, information resources and facilities desired.A plan should specify priorities, time table for achieving

goals and objectives(both short and long-range), cost projections, assignments and responsibilitiesfor implementing the plan, projections of resources, publicity campaign to accompany changes and provision for evaluation and reassessment at specific intervals.

Planning and construction of library building is one of the important organizational functions. It requires thorough understanding of needs of the users, objectives and functions of a library. The successful library building is one which clearly and directly expresses and provides the functions that are performed within it.

A plan is beneficial to the library as it allows rational justification of your budget with governing authorities helps you prioritize programmes and direct efforts to attaining objectives and motivates the staff and board. A plan also encourages coordination and accountability, gives a clear measure for success, assures enough lead time to undertake projects effectively and leads to steady growth by encouraging yearly evaluation. Therefore, a library building plan will facilitate what to do and how to do it to achieve the construction of a new library building or the renovation of an old library building.

1.3.3 Planning for a library building

Planning is the deliberate, preferred manner of preparing for library service in the future and it is the means of fulfilling future community library needs. A long-range plan, based on knowledge of the community, community expectations, resources of the community, and realistic projections of the future needs of the community will enable the library trustees and administration to perform their responsibilities better by providing efficient and progressive library service. Every library shall therefore, develop, prepare and be guided by a long-range plan. The plan must be based on the goals and objectives of the library and so all decisions should be made in view of the plan and it is suggested that a building plan should be updated annually.

The very first step in planning a new library building involves background research in order to clarify the vision that will define the building and will enable a sound and convincing business plan to be prepared. The aim of the research stage is both to become

better informed yourself but also to enable you to bend others to your will through persuasive argument. The publication of the IFLA Library Building Guidelines (Saur, 2007) reported thatdesigning and constructing a new library is an art that most library directors and professional librarians only experience once or only very occasionally in their professional lives. This is because new library buildings are not structures that erected regularly like classrooms. However, those same library professionals can gain much from colleagues and others who have been there before them and it is a crucial stage in the planning process to build on the existing body of knowledge and experience. This can be done in a number of ways.

There are some factors that should also be considered when planning a library building and this include: the selection of a suitable site that will be an independent building and make provision for future expansion; provision should be made for work place and staff; and simple architecture with proper natural lighting, ventilation and control of noise. Other factors are: planning the interior arrangement before the exterior to cater for study areas which should be closed to stack and information resources; provision of amenities such as water, toilets, fire and disaster protection; and making at one time, the entrance and exit possible

After the library has completed its community analysis, defined its long-term goals and objectives, and determined the need for additional space, a library building programme is developed. The building programme defines the specific needs of the library in both quantitative and qualitative terms. The building programme should bring together the thinking of the library board, the library director, the library staff, and the community on the purpose, scope, and function of the library building program. The building programme should also stress that the building must be flexible and able to respond to future developments.

Library functions and spaces should be able to expand and contract as needs develop or diminish and existing and future technologies should be anticipated. Computerization, miniaturization, electronics, and other factors are already in play and will continue to develop. This has implications for the building's structure; it's heating, ventilating, and air conditioning systems (HVAC); its power, lighting, electronic, and communications systems (PLEC), as well as the ergonomic needs in planning spaces and equipment.

Self-Assessment Exercise 1:   This will take you 5 minutes to answer.

1. Write on five characteristics a library building should have
2. Why should a library have a building plan?

1.4   Summary

We have successfully come to the end of Unit, where library building was the focus of the discussion. In this Unit, we looked at the characteristics a library building should have and the constituent of a library building plan and its benefits. Planning for a library building was described and there were some questions at the end of the Unit to test how much of the content you understood. I hope you were able to answer all or most of the questions correctly. I have included the answers to the questions at the end of the Unit, which you can use to evaluate yourself. I hope you were able to score very high marks, if not, revise the Unit again and have a second take on the questions. I am sure you will not be able to score very high marks. Congratulations.

1.5   Glossary

Library Building plan: This is a roadmap to show what needs to be done and how it will be done.

1.6   References/Further Readings

Metcalf K.D. (2015). Planning Academic and Research Library Buildings. New York, McGraw hil, 1965. p.16 4. CANTY (Donald).

1.7 Possible Answers to Self-Assessment Exercises (SAEs)

<div style="border:2px solid red;">

Self-Assessment Exercise 1:   This will take you 5 minutes to answer.

1. Write on five characteristics a library building should have
2. Why should a library have a building plan?

</div>

ANSWERS to SAE1

1. Write on five characteristics a library building should have
  i.   Functional
  ii.   Adaptable
  iii.   Conducive environment
  iv.   Accessible
  iv.   Varied

2. Why should a library have a building plan?

A library should have a building plan to show what needs to be done, how it is to be done and by who.

UNIT 2   Library Space

Unit Structure

2.1   Introduction
2.2   Learning Outcomes
2.3   Library Space
2.4   Summary
2.5   Glossary
2.6   References/Further Readings
2.7   Possible Answers to Self-Assessment Exercises (SAEs)

2.1   Introduction

This is Unit 2 and our focus is on library space.This Unit is an introduction to the components of library architecture so you can have the requisite knowledge about space as a concept that needs to be discussed.In this Unit, we will looking at the necessity for space determination, spaces needed in the library and how this can be carried out in a library. At the end of this discussion, there are some questions that I set for you to

answer. The answers to these questions are written at the end of the Unit. I wish you all the best.

2.2 Learning outcomes

By the end of the Unit, you will be able to:

1. explain the importance of space as a component of library architecture
2. discuss the types of spaces required in a library building

2.3   Library Space

A librarian must consider the space needed for the different activities such as work station, display area (Figs. 16 & 17). The space needed by tables and desks will bedetermined by the shape of the table, whether a circular or rectangular table. Rectangulartables are better for individual work as they allow one to comfortably claim an area. Graduate and doctoral students may need more space to spread their laptops and research materials.
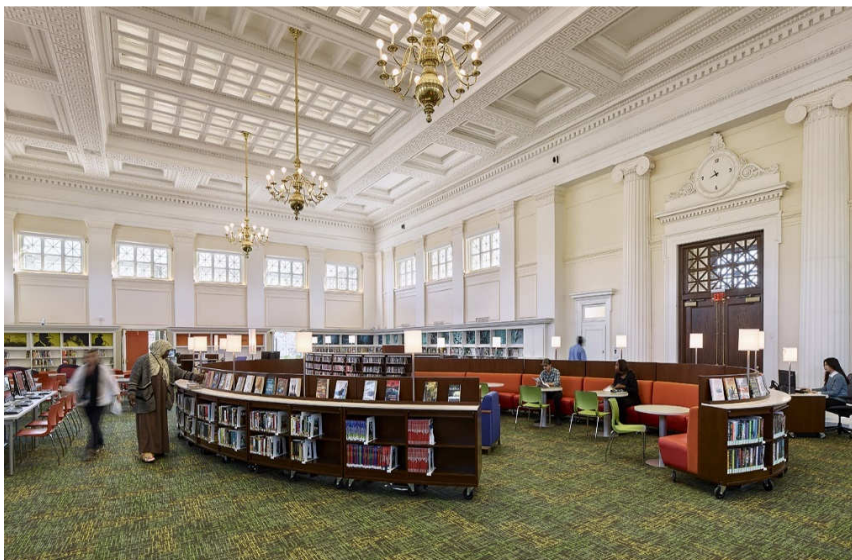
Fig.16 Public library showing spaces for display, work station, reading

Fig. 17Public Library Showing Spaces Used for Different Purposes

If there is a narrow shelf over the back of the working surface, a depth of 27 inches is recommended so the shelf doesn't interfere with overhead lighting. Any shelving must be also high enough so a laptop screen can be folded open. It is easy to believe that with the adoption of technology comes a need for modified human work spaces. Humans take a long time to evolve (study habits are no exception), and even though technology now plays a role, it does not have the capacity to fundamentally change patterns which explains why desks, chairs, and tables continue to be the optimal library installation. What technology has done, however, is create a need for power access and an increased work space due to space needed for notebook, laptop or tablet.

Self-Assessment Exercise 1:   This will take you 2 minutes to answer.

1. Explain why space is important in a library building.

2.4   Summary

This is the end of Unit 2, where we discussed the importance of space as a component of library architecture. We highlighted that space should be taken into consideration in a construction of a library building. We explained the spaces requirement and should be

reflected in a modern library. I asked you some self-assessment questions at the end of the section. I hope you did not find it difficult answering the questions correctly. I have provided answers to these questions at the end of this Unit for you to use to evaluate yourself. I hope you were able to score very high marks.

2.5   Glossary

Space requirement: this is the amount of space needed in a library to carry out all the library activities and to ensure good service delivery to library users.

2.6   References/Further Readings

ALA, (2020) Building Libraries & Library Additions: General Information. Retrieved from http://libguides.ALA.org October, 2020.

2.7   Possible Answers to Self-Assessment Exercises (SAEs)

Self-Assessment Exercise 1:   This will take you 2 minutes to answer.

1. Explain why space is important in a library building.

ANSWERS to SAE1:

1. Explain why space is important in a library building.

Space is important in a library building, because the required spaces to carry out the various activities and services in a library must be determined and this must be taken into consideration when a new library building is being designed.

UNIT 3   Library Furniture

Unit Structure

3.1   Introduction
3.2   Learning Outcomes
3.3   Library Furniture
       3.3.1 Types of Library furniture
       3.3.2 Factors to consider in choosing library furniture
3.4   Summary

3.1   Introduction

I welcome you to Unit 3. In this Unit, we are going to discuss library furniture and specifically on types of furniture and factors to consider in the selection of furniture for a library. This Unit will enlighten to you to different furniture available and how to choose the most appropriate for your library. At the end of the content for the topic, I have included some questions for you to assess the level of comprehension of library furniture. This is important for you to participate in and also have answers to the questions at the end of the Unit.

3.2   Learning Outcomes

By the end of the Unit, you will be able to:

    i. Explain the importance of furniture in a library.
    ii. Discuss the factors for consideration in selecting furniture for a library.

3.3   Library Furniture

3.3.1 Types of Library furniture

A good and modern library should acquire different furniture that is based on the needs of users (Agati Furniture, 2022).

Types of furniture in the library

    i.   Desks and Tables - Tables are adaptable and they can stand alone and often be used by students or can be pushed together, creating space for a large group of discussions. Circular tables (Fig. 18) are more appropriate for group study because they naturally create a conversational setting, while rectangular ones (Fig. 19) are preferred for individual study as they allow one to comfortably claim an area. Graduate and doctoral students may need more space while in

the library because of different research materials (journals, reference materials) and facilities such as laptops, tablets.

Fig 18. Example of Circular Tables in FLP Library

Fig. 19. Example of a Type of Table in a Reading Room
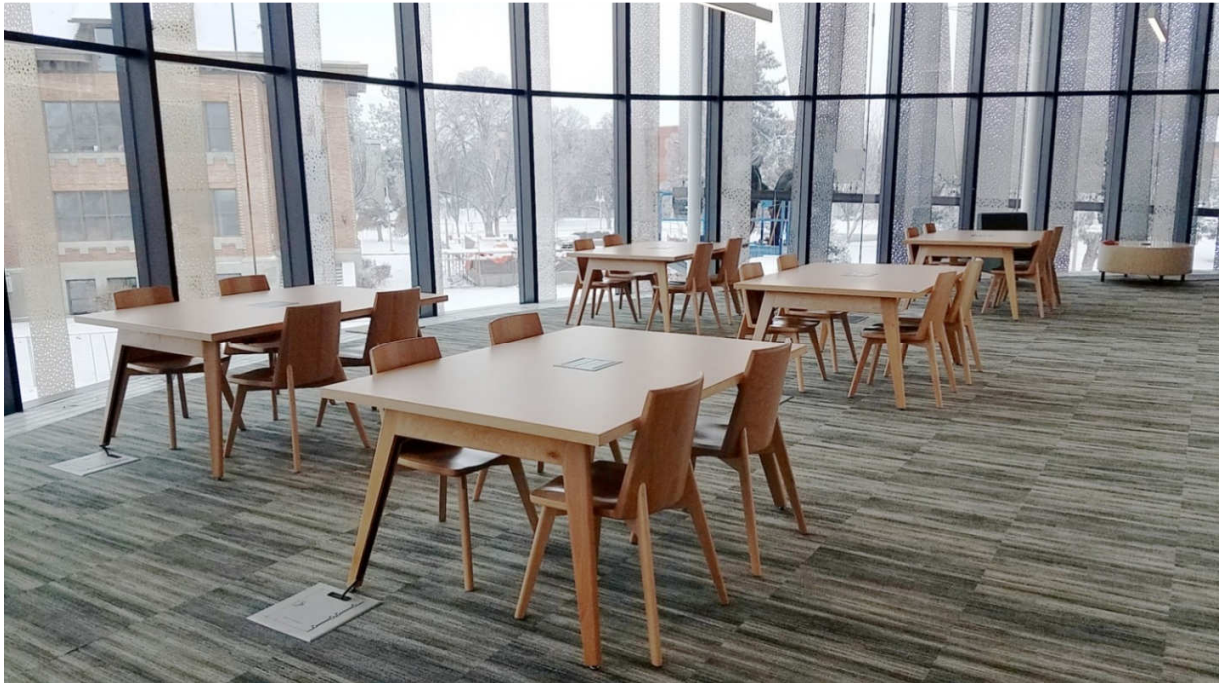
Fig. 20. Chairs and Tables at College of Idaho Library, Caldwell

ii.   **Chairs** – A librarian needs to think about how, where, and why people are sitting in the library. Upright chairs (matched with a table or desk) are usually the best solution for students who need to read, research, and study for long periods (Figs. 20 & 21). The librarian needs to sit in these chairs before buying them. Some things to observe are: do they force your back to sit at an almost 90-degree angle to your lower body? (This position encourages focus.); and can you place your feet slightly underneath the seat (knees slightly bent backwards)? These chairs need to be the most durable in the library. A chair may also need to withstand someone standing on the seat, or people repeatedly leaning back on two legs, or even one. One thing to also consider is to make sure that the chairs can seatand be comfortable to people of various sizes and shapes. The seat pan must be large enough for the patron, and the vertical front of the seat pan should not apply pressure onto the back of the legs.

Fig. 21 An Example of a Durable Library Chair

Stretchers (horizontal connectors) that connect one leg to another provide additional structural strength. The backrest must provide sufficient lumbar support, while the lower back should be well-supported to push the rest of the back upright. To check, position yourself in the corner where the seat meets the backrest; good contact will prevent the back from curling. If the chair has armrests, will they fit under the table? Users should not have to lean forward just to maintain contact with the equipment.

In modern library, there are different types of chairs to cater for the varying needs of users and such could include lounge chairs.The lounge chairs (Fig. 22) are appropriate for casual conversation typically had by library users, or stays of less than 30 minutes.
A lounge chair should not be used for upright active work applications where you would expect to find students typing up a paper as this will reduce concentration and the ability to work.

Fig. 22. An Example of Lounge Chair

    iii.   **Stools**– Stools should be provided in the library as they can be used by both the library staff and users (Fig. 23).Some library users often enjoy sitting on short stools while browsing among stacks, particularly when resources are on the lower shelves. In a school library, lightweight stools can be easily moved particularly by children and shifted to where the user needs to sit, while tall stools are ideal as a quick place to perch while locating library resources. High stools are also readily found in a media room for video interviews.

Fig. 23. An Example of a Stool

    iv. **Study carrels and nooks**- Carrels are the suitable choice for users who need privacy and seclusion for research especially postgraduate students and lecturers. Presently, a carrel design will consider that a laptop (or tablet) will almost always be present along with study materials with built-in wire management. The panel facing the user should at least be at eye level, while a shelf can provide a place to temporarily store research material.

A study nook rotates the carrel 90 degrees, creating a side entry so the back of the patron no longer faces out into the library. This offers more privacy (especially from laptop/tablet screens), and a sanctuary-like environment makes personally dedicated study more effective. Nooks also tend to offer more portability than a traditional study carrel, enabling librarians and management to more easily reconfigure study areas in response to future

change. The walls/partitions offered by carrel designs can also break up a large, open space to create a sense of comfort within the library.

3.3.2 Factors to consider in choosing library furniture

Acquisition of furniture for a library may occur every 5-10 years or even 15 years in some cases, depending on the number of users, state of the present ones and availability of funds. Libraries are filled with furniture that is designed, built, and chosen with patrons' enjoyment in mind so that the users' who want to use the physical library can be comfortable. Knowing that your furniture acquisition is going to last you nearly a decade, it is worthwhile to become familiar with the elements responsible for creating a durable, comfortable, and productive piece. Library users will use the library when the environment is conducive, so the librarian must know what their users need in terms of why they use the library, characteristics that distinguishes them form one another and what they value when they visit the library. The librarian needs to consider some factors in selecting furniture for a library. Some of these factors are:

    i.   **Durability -** How durable and/or reusable the furniture item is an important factor to consider when considering library furniture. A library in any setting or establishment is bound to be open and in use quite a lot more than most average other departments of any organisation. It is recommended to make sure to search for options that promise long-lasting use and impressive durability. Search for items that are solidly built to lasting. Library furniture must be sufficiently rugged to survive the significant wear and tear that is obtainable in a constantly-used public space. There are two different ways to think about durability:

        a.   Functional: Will the furniture remain functional throughout its intended lifespan? In other words, if a chair leg breaks off after year one, it is no longer functional. Functional durability really focuses on the workmanship of the furniture.

b. Aesthetic: This considers how the furniture endures in its environment. While a chair may keep all four legs for the next ten years providing a place for somebody to sit, the question is how does that chair look after its usage over time? The furniture with higher functional and aesthetic durability tends to cost more as it requires higher grade materials and design, but it also means fewer replacements over time.

ii. **Flexibility**- How flexible, adaptable and portable the furniture item is. In this present information age, it is important for a library to contemplate users' characteristics. Students and other academics will have vastly different preferences when it comes to how they like to work or how they can best study and learn. Furniture that supports different body types and different preferred postures/is able to change to suit the user's preference is always the best option in any library. This way, your library supports and caters to many different work and learning styles. An example of such would be not only including standing tables and workstations, but also lounge style seating.

iii. **Environments** - How the furniture item contributes to a balanced environment. As with most environments, balance in a design is vital for the library. This is especially true when it comes to natural and artificial lighting. Natural light is the most preferable source of light, as it can boost productivity, but artificial light will be needed to ensure that the area is properly illuminated, thereby avoiding eye strain during evening hours and on rainy days.

iv. **Technological Support**-How does the furniture support technology concerns. One of the most frequent complaints in the library, especially one that accommodates students with laptops, is the shortage of power outlets. Today, many desks come with wire management systems and grommet holes to make charging a laptop a much simpler process. Another concern with technology is simply ensuring that you have the proper desks and equipment to support and

store various forms of technology available in the library. Some lounge seating options also feature built-in power outlets to help address this problem.

v.   **Furniture Aesthetics** - Library furniture needs to look attractive and blend with the surroundings. Library furniture is expected to be built to last a decade or more, therefore, selecting a timeless design instead of a trendy one is safer. Creating a welcoming environment should be your main guide in selecting library furniture designs. This is especially important for students who hunt for that perfect spot to focus. A librarian should pay attention to the most prominent visual element of your furniture, such as table legs and chair backs. For example, table legs that are more substantial will convey an impression of quality.

vi.   **Furniture Technology** - Technology changes faster than how library furniture wears out. Change is certain, and the best furniture is able to absorb adaptations to technology if it is to fulfill a 10+ year lifespan. Cell phone holders can be built into study carrels that are now too small to use because screens on devices are getting progressively larger. A librarian should consider computer and Smartphone charging cable configurations that seem to change almost yearly.

On the other hand, enhancements such as built-in power outlets and USB ports facilitate the use of computers, smart phones, and tablets. A good rule of thumb here is to have one or two power outlets per person or one outlet and two USB outlets. Well-designed furniture considers the user types and includes an adequate amount of outlets. Power intended for public use should be very discoverable, that is near desktops or logical plug-in locations.

Self-Assessment Exercise 1:   This will take you 5 minutes to answer.

1. Highlight five types of furniture needed in a library.
2. Write on the factors you will use in the selection of furniture for a library.

3.4   Summary

We have come to the end of Unit 3 where we discussed library furniture. The types of furniture required and the factors that you can use to select furniture for the library wereexplained. It was emphasized that the needs of the users and the activities and functions carried out by library staff are the determinants for the type of furniture selected in a library. There were three self-assessed questions that I asked you and I hope you were able to answer them very well. At the end of the Unit, I provided answers to these questions and you can evaluate yourself. I hope you were able to score a minimum of 60%; if yes, congratulations. If not, then you need to go through the content of this Unit again to acquire the required knowledge before moving to Unit 2. In Unit 2, we shall be discussing the relevance of library architecture to different libraries.

3.5   Glossary

Library furniture: This is the physical materials needed in the library such as chairs, tables, shelves etc

3.6   References/Further Readings

Agati Furniture (2022). A practical guide to choosing the right furniture for your library. https://www.agati.com/wp-content/uploads/2018/01/Agati-Furniture-Book-2017.pdf

3.7   Possible Answers to Self-Assessment Exercises (SAEs)

Self-Assessment Exercise 1:   This will take you 5 minutes to answer.

1. Highlight five types of furniture needed in a library.

2. Write on the factors you will use in the selection of furniture for a library.

ANSWERS to SAE1:

1. Highlight five types of furniture needed in a library.
    1. Tables
    2. Chairs
    3. Shelves
    4. Study carrels
    5. Stools

2. **Write on the factors you will use in the selection of furniture for a library.**
    1. Durability

    2. Flexibility

    3. Environment

    4. Furniture aesthetics

    5. Technological support

UNIT 4:   Emerging Trends in Library Design

Unit Structure

4.1   Introduction
4.2   Learning Outcomes
4.3   Emerging trends in library design
    4.3.1   The concept of Blueprint and its relevance
    4.3.2   Library service blueprint
    4.3.3   Purpose and procedure of service blueprint
4.4   Technology Services in Libraries
4.5   Diagrams of designs for modern library
4.6   Summary
4.7   Glossary
4.8   References/Further Readings
4.9   Possible Answers to Self-Assessment Exercises (SAEs)

4.1   Introduction

I welcome you to Unit 4. We will be focusing on emerging trends in library design. In this Unit, we are going to explain the concept, relevance and elements of the Blueprint. To understand Blueprint and how it can be used, we will describe the procedure of Blueprint. We shall also be looking at how the deployment of technology for library services and some pictures of modern library design will be included. At the end of each

subheading, I have asked you some questions for the Self-Assessment Exercises (SAE) you will see at the end of each main section. Attempt these questions to assess your level of knowledge. At the end of this Unit, I provided the answers to the questions. Go through for a better understanding of the content of this Unit. I wish you all the best.

4.2 Learning Outcomes

By the end of the Unit, you will be able to:

i. Explain the elements and relevance of Blueprint for a library.
ii. Describe the procedure for a blueprint.
iii. Describe how technology can be deployed for library services

4.3 Emerging Trends in Library Design

4.3.1 The concept of Blueprint and its relevance

Libraries are embracing new technology services related to data and digital scholarship. Tools and strategies adapted from service design and design research such as service blueprinting, can help libraries assess, improve, and innovate services involving new and emerging technologies. When delivering a service to a customer, you may find it difficult to pinpoint just where things could be improved or where things are going wrong. Who is the real face of the company to the customer? When does the service start and stop, according to the customer? Being able to intervene at the right moment in the service process and provide a concrete answer to these questions could make the difference between running a growing, innovative service organization and running one into the ground.

The service blueprint is a technique originally used for service design, but has also found applications in diagnosing problems with operational efficiency. Service Blueprint visually maps out the steps in a service process, making it easier to design a new process or to document and improve an existing one. Service blueprinting produces a detailed and comprehensive view of the operation of a service. The service blueprint has become one of the most widely used tools to manage service operations, service design and service, such as in the library and information profession. Library services and operations are sets

of a complex, multi-layered process that involves lots of people and technologies that work together. As one tool in the design toolbox, service blueprinting can be applied to create services that benefit library users and staff alike.

4.3.2 Library service blueprint

Library service blueprinting is a method for understanding how a new or existing service integrates into the complexity of an interconnected library service ecosystem. A service blueprint provides a visual flow of a service operation and it is to assess the operation and delivery of service and generates new ideas for improving the service. The scope of a blueprint typically includes three main service areas: user-facing interactions, behind-the-scenes staff actions, and the technology systems that support the service. The technique of service blueprinting was developed through the tradition of service design (Shostack, 1984; Marquez and Downey, 2015).

Within libraries, service design generally and service blueprinting particularly is recognized as a useful practice for planning, assessing, and improving technology services. When implementing a new collaborative library space, for example, Deitering and Filar-Williams (2018) noted that blueprinting is the most useful tool in the planning stages. A service can be understood generally to include any interaction that a user undertakes to access information or fulfill a task. In essence, everything within a library has the potential to operate in service to user goals (Marquez and Downey, 2016). Therefore the Blueprint is an adaptable, useful tool for a full range of library services.

4.3.3 Purpose and procedure of Service Blueprint
Purpose of Service Blueprint to the library system
The library Service Blueprint can be used to map the actual experience of a service in the library, the immediate innovation and evolution to be implemented short/middle term (to be) and the long-term strategy of the evolution of the service (Ideal). It can assist the library system to achieve the followings:

i.   identify process problem areas and growth opportunities

ii   Find new or existing information products and services

iii. Recognise the business structure of a startup or established service area of the library

iv. Align end-to-end perspectives on a service experience

v.   Understand all the moving parts of a service

vi. Align the library team around a common understanding of the library goals and visually share knowledge with other stakeholders in the library and information provision

vii. Ensure that the pieces of the user's experience fit together and envision customer flow and architecture of the service experience

viii. Visualise an abstract concept and make them into a tangible format

ix.   It encourages and promotes knowledge management

The library service blueprint will quickly point out assumptions and unknown about a service process across all service units, including discovering any confusion or misinterpretations within the process steps. This information can drive exploratory and validation research with users along with necessary technical and business research to later define opportunities, strategies and solutions in the cause of information provision.

Benefits of Library Service Blueprinting

1.   It provides an overview so librarians can relate "what I do" to the library service viewed as an integrated whole, thus reinforcing a patron-oriented focus among librarians.

2.   It identifies fail points, that is, weak links in the chain of service activities, which points can be the target of continuous quality improvement.

3.   Line of interaction between library patrons and librarians illuminates the patron's role and demonstrates where the patron experiences quality, thus contributing to informed library service design.

4. Line of visibility promotes a conscious decision on what patrons should see and which patrons will be in contact with librarians, thus facilitating rational service design.

5. Line of internal interaction clarifies interfaces across departmental lines, with their inherent interdependencies, thus strengthening continuous quality improvement.

6. It stimulates strategic discussions by illuminating the elements and connections that constitute the service. Those who participate in strategic sessions tend to exaggerate the significance of their own special function and perspective unless a common ground for an integrated view of the service is provided.

7. It provides a basis for identifying and assessing the cost, revenue, and capital invested in each element of the library service.

8. It constitutes a rational basis for both external and internal library marketing. For example, the service map makes it easier for an advertising agency or an in-house promotion team to overview a service and select essential messages for communication.

9. It facilitates a top-down, bottom-up approach to quality improvement. It enables library managers to identify, channel, and support quality improvement efforts of essential librarians working on both frontline and support teams. Librarians' work team can create service maps and thus more clearly apply and communicate their experience and suggestions for improvements.

Self-Assessment Exercise 1:   This will take you 3 minutes to answer.

1. What is the library service blueprint?

2. Briefly explain the benefits of a library service blueprint.

4.4 Technology Services in Libraries

Service blueprinting is particularly useful in integrating technology into services in libraries. With the advent of personal computers and the web, information is easily

accessed through search engines and databases, then processed and explored using computer software. In an effort to keep up to date with patrons' information-seeking needs, libraries are increasingly adopting technology. Consequently, early adoption of and support for new technology services have become key to libraries' missions.

The New Media Consortium periodically publishes the Horizon Report: Library Edition, a publication that forecasts near-term trends and technology developments in libraries, outlines related challenges and suggests ideas for solutions (Adams Becker et al., 2017). The Library Information Technology Association (LITA) Guide series focuses on technology implementation and management in libraries (Silveira, 2018). Publications like these showcase the value placed by libraries on staying up to date with new technologies and technology trends. Such new technologies are often offered as services in library public spaces.

Public computing, self-checkout machines, digital signage, and technology equipment checkout (e.g. iPads, laptops, audio/video equipment) are ubiquitous (Bertot, 2009). Some libraries also support more specialized services such as makerspaces (sometimes called hack labs) with computers, 3D printers, and audio/video capture and editing tools (Willett, 2016); large display walls for data visualization, data analysis, presentations, events, and teaching (Brosz, Rashleigh and Boyer, 2015); and augmented or virtual reality equipment (van Arnhem, Elliott and Rose, 2018).

Accompanying these new technology services is a new set of challenges for both library users and library employees. First, there are implications for user privacy. Networked technologies such as cloud-based services and library websites may track users or otherwise collect user data without authorisation (Kritikos and Zimmer, 2017) and physical technologies such as RFID technology, laptops, scanners, and self-checkout machines pose challenges regarding data and network security, workstation security, and intellectual property (Ferguson, Thornley and Gibb, 2015).

During 2015-2016, the Intellectual Freedom Committee of the American Library Association (ALA) produced guidelines documents (ALA, 2016b) and privacy checklists (ALA, 2016a) to support patron privacy in libraries, including in the areas of E-book Lending and Digital Content Vendors; Data Exchange Between Networked Devices and Services; Public Access Computers and Networks; Library Websites, OPACs, and Discovery Services; and Library Management Systems. These guidelines and checklists provide actionable advice to libraries implementing new technologies, covering topics such as privacy policies, access control, and data collection. Second, new technologies in the library require specialized training for both users and library employees. In order for a new technology service to be successful, both library employees and library users need to understand the purpose and benefits of the technology, and they must know how to use the service (Moorefield-Lang, 2015).

In addition to training, new policies and rules must be implemented and communicated to patrons. Lastly, new technologies must be integrated into existing library services (Marquez, Downey and Clement, 2015). Service blueprinting can be used when implementing new technology services to highlight the broader context of interconnected services and to investigate how new services complement or contrast with existing ones.

Self-Assessment Exercise 2:   This will take you 3 minutes to answer.

1. Why do you think technology should be adopted in the provision of library services?

2. List some technology that can be used in a modern library.

4.5 Modern Library Design

In the past, library design was centered on the collection. Concrete edifices that were unwelcoming, unattractive, and totally inflexible for the future needs of the community, who used them, frequently were the result. In recent years this has begun to change. Library design focuses increasingly on clients' and users' experiences in the library, the creation of flexible spaces for current and future use and providing a welcoming and exciting environment.

Fig. 24. Example of a Lodern Library

Architecturally Bound: 20 of the World's Most Stunning Libraries

1. **Calgary Central Library in Canada**: The Calgary library (Fig. 25) recently celebrated its first anniversary as one of the most architecturally stunning libraries in the world. In the fall of 2019, Hunters Point Community Library opened in Queens in an effort to bring style to the East River shoreline. The design was based on using inspiration from the province's arch-shaped Chinook cloud formations. The structure includes interlocking hexagonal patterns,

allowing every side of the building to hold equal importance and look as though it could serve as the library's front. The modern design, which arches over a light rail line, is also filled inside with western red cedar, allowing the flowing forms to merge nature with modern design.

Fig. 25. Calgary Central library in Canada

2. **Hunters Point Community Library in Queens, New York:** The concrete structure sitting on the shore of the East River in Queens, New York is painted aluminum marking the new library look sparkle. The library (Fig. 26) allow visitors to view the city as they move up a series of bookshelf-flanked stairs and the main Manhattan view, perpendicular to the internal movement of the library, give the small space a dramatic experience. The book-lined switchback stairs include small reading rooms full of bamboo touches and a rooftop café.

Fig.26. Hunters Point Community Library in Queens, New York

3. **The Library of Alexandria, Egypt**: This library (Fig. 27) is located on the shores of the Mediterranean Sea in Egypt and a sum of $220 million was used to rebuild an ancient library into a modern one. The building was opened in 2002 and has 11 stores, four underground and is meant to mimic the lighthouse of Alexandria. The cylindrical design and Egyptian hieroglyphics of the building are based on Egyptian culture.

Fig. 27. Library of Alexandria, Egypt

4. **Kanazawa Umimirai Library, Kanazawa City, Japan**: This is 60,000 square-foot box library (Fig. 28) that was designed in 2011. The building's exterior skin includes a wall grid of 6,000 blocks of glass, breaking through the concrete shell in a geometric pattern, meant to evoke the soft light of the forest when inside the library.

Fig. 28.Kanazawa Umimirai Library, Kanazawa City, Japan

5. **Library of Birmingham, United Kingdom:** This was opened in 2013 with four rectangular spaces stacked on each other in a staggered pattern to create terraces. It is the largest public library in Europe (Fig. 29) and the site nestles between a theater from the 1960s and a 1930s building. A filigree pattern of metal rings and a nod to the jewelry quarter atop gold, silver, and glass façades are used to tie it to the area.

Fig. 29. Library of Birmingham, United Kingdom

6. **National Library of the Czech Republic:** The library (Fig. 30) is on a site first established as a boarding school for monks in the 13th Century and later transformed into what it is in the late 1700s. The old-world design of the building, along with murals aplenty, gives a true historical nod to Prague.

Fig. 30. National Library in Prague, Czech Republic

7. **Public Library in Stuttgart, Germany:** This is a library (Fig. 31) that is cube-shaped and includes a five-story gallery hall in the center of the building, surrounded by a shell of books. The core of the library follows the design of the

ancient pantheon, but the exterior pairs grey fair-faced concrete framing with a mixture of frosted glass bricks that make up a second façade. That central room includes illumination from a glass roof.

Fig. 31. Public Library in Stuttgart, Germany

8. **Vasconcelos Library, Mexico City, Mexico:** It is a 400,000-square-foot downtown Mexico City library (Fig. 32) a spectacle, especially on the inside and has transparent walls, mismatched floors, and hive-like bookshelves. It is designed with steel, concrete, and glass structure within a botanical garden and then created giant spaces within stacked full of books. The library was opened in 2006 and made the space transformed a barren landscape into something far more.

Fig 32. Vasconcelos Library, Mexico City, Mexico

9.   **Tianjin Binhai Library, Tianjin, China:** It was opened in 2017 as a five-story library (Fig. 33) with an iris-looking sphere serving as the focal point of the center of the auditorium, which can be seen from the outside. The library has plenty more modern flair with all-white designs and terraced shelving.

Fig. 33. Tianjin Binhai Library in China

9. **The Vennesla Library and Culture House:** This combines together a library and community center in Norway (Fig. 34) and is an extension of the main city square with a transparent façade highlighted by 27 prefabricated glue-laminated timber ribs. The offset construction curves the 2011 building for a unique interior feel. The ribs change throughout the space, growing smaller as you move from the large main entrance, appearing to fold down toward the main street.

Fig. 34. VenneslaLibrary and Culture House, Norway

10. **The National Library of China, Beijing:** This library (Fig. 35) was opened in 1912 as a four-tiered study hall inside and remains spectacular, even more than a century years later. The building's design mimics archaeological layers as the floors move up. On the top floor, under a roof designed to look as though it is floating, the rectangular building tops out and then opens to the exterior garden. When visitors arrive into the entrance from the main steps, they have a view into the entire library.

Fig. 35. National Library of China, Beijing, China

11. **Admont Abbey Library, Austria**: This is one of the largest monastic libraries (Fig. 36) in the world and was built in 1776 with Baroque architecture playing heavily throughout. The gold and white colour schemegets accented by 48 windows for natural light and murals aplenty on the ceiling. The designer used a great hall design with seven distinctive domed cupolas, creating seven distinct works of art.

Fig. 36 Admont Abbey Library, Austria

12. **TU Delft Library in the Netherlands**: This library (Fig. 37) was opened in 1997 and had a great lawn, tilted upward, near a Brutalist concrete auditorium to tuck under the lawn, while a cone pushed up from the library through the lawn, joining the two on the TU Delft International campus. With glass facades

bringing in natural light from around, the cone's base offers a central focus inside, while defining the interior design, all accented by walls of books and a deep-blue hue covering the walls.

Fig. 37. TU Delft Library in Delft Netherlands

13. **Spijkenisse Public Library Foundation, Netherlands**: This is known as the Book Mountain (Fig. 38), located in the town's market square and was opened in 2012 by stacking into a pyramid shape, wrapping bookshelves, the shelving was made from recycled flowerpots up throughout the space. A café sits at the top and the transparent glass allows the mountain of books to remain visible from the outside.

Fig. 38. Spijkenisse Public Library Foundation, Spijkenisse, **Netherlands**

14. **Seattle Public Library, Washington**: The Seattle Public Library (Fig. 39) opened in 2004 and it is an 11-storey glass and steel building, located on a hill that allows for entry on multiple floors, juts into the Seattle skyline in a unique fashion. The 10th-floor reading room includes views of Elliott Bay and downtown Seattle, while the façade offers a transparent look both in and out of the downtown structure.

Fig. 39. Seattle Public Library, Seattle, Washington

15. **The Philology Library, Berlin, Germany:** The library (Fig. 40) design includes an aerodynamic water-drop-shaped enclosure to maximize floor area and allow

for landscaped courtyards on the outside. It was opened in 2005 and it is a four-story library for the Free University of Berlin and includes an external shell clad in opaque aluminum and transparent glazing, while a steel frame is painted yellow and a translucent glass-fiber inner membrane helps spread natural light and "glow" with ambient light.

Fig. 40. The Philology Library, Berlin, Germany

16. **Cottbus Technical University Library, Cottbus, Germany:** It has a nearly 20-foot-diameter colorful spiral staircase twirling through the university library, allows for unique vantage points throughout the 2004 library (Fig. 41), but also a chance for visitors to stop and chat. The amoeba-like plan spreads into an artificial hill to create an accidental shape that promotes unique flow and movement. The glazed exterior stands out from the nearby buildings and has unique vantage points from all sides. This feeling continues inside where rooms differ in size and orientation and colors play throughout to keep visitors guessing.

Fig. 41. Cottbus Technical University Library, Cottbus, Germany

17. **Bishan Library, Singapore:** This library (Fig. 42) was opened in 2006 with the design of a tree house. With cubicles of glass punched out from the main exterior, the structure uses skylights, colored glass, and trellises to invite daylight and change light throughout the space, just as a tree's branches and leaves would filter light in a tree house. The cantilevering of interior spaces not only provides a unique view from the outside but offers a playful interior design.

Fig. 42. Bishan Public Library, Singapore

18. **The Sir Duncan Rice Library, Aberdeen, Scotland:** Thishaseight stories worth of vertical-styled stripes, consisting of insulated and clear glass to optimize lighting performance. The University of Aberdeen library (Fig. 43) was opened in 2011, wrapping around a central atrium that rises the entirety of the structure. The new library includes Scottish stone at the base and an interior of shifting spaces.

Fig. 43. Sir Duncan Rice Library, Aberdeen, Scotland

19. **Helsinki Central Library**: The iceberg-like design of the 2018 Helsinki Central Library (Fig. 44) offers an undulating roof in concert with the neighboring Finlandia Hall. Under the roof, the reading rooms and bookshelves sit on the top floor, with lower levels curving with the building and flowing to the outdoor plaza. Using a timber-heavy design, the architecture of the new library offers a fresh take for citizens, while the robotics used to sort and retrieve books gives a modern take on library design.

Fig. 44. Helsinki Central Library, Helsiniki, Finland

4.6 Summary

We have come to the end of Unit 4. In this Unit, we discussed emerging trends in library designs. We mentioned that libraries should have blueprints that will guide them on how to plan and build the library architecture. We also discussed how technology could be deployed for library services and listed some pictures of modern libraries in the world. I hope you found it interesting with the different library buildings. I asked you some self-assessment questions at the end of each of the sections. I hope you were able to answer the questions correctly. Please go to the end of this Unit to see the answers and grade yourself. I wish you all the best.

4.7 Glossary

Library service blueprint: It is a road map that shows what services are rendered in a library, how to evaluate such services and generate new ideas for providing other services.

4.8   References/Further Readings

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https://ebookfriendly.com/wp-content/uploads/2013/04/Most-stunning-modern-libraries-from-around-the-world.jpg

Learn more about *Designing Libraries for the 21st Century* in this Introduction from the editors, licensed under CC BY-NC 4.0. at https://acrl.ala.org/acrlinsider/designing-libraries-for-the-21st-century/

https://lpaa.com/wp-content/uploads/2018/10/Media-Center.jpg

YouTube Video

Bookshelf/Library Tour /School library design ideas-2017
https://www.youtube.com/watch?v=nSInDPkRA6s

4.9 Possible Answers to Self-Assessment Exercises (SAEs)

> **Self-Assessment Exercise 1: This will take you 3 minutes to answer.**
>
> 1. What is the library service blueprint?
>
> 2. Briefly explain the benefits of a library service blueprint.

ANSWERS to SAE1:
1. What is the library service blueprint?

A library service blueprint is a guide showing how and what the services of a library are, the assessment of these services and what new services can be introduced into the library

2. Briefly explain the benefits of a library service blueprint

i.   reveals the kind of services provided

ii.   assesses the services to identify the weakness or strengths

iii.   shows the interaction between users and library personnel in terms of service delivery

iv.   discussions evolve based on the library service blueprint

v.   leads to improvement in services rendered or new services to render

> **Self-Assessment Exercise 2: This will take you 3 minutes to answer.**
>
> 1. Why do you think technology should be adopted in the provision of library services?
>
> 2. List some technology that can be used in a modern library.

ANSWERS to SAE2:

1. Why do you think technology should be adopted in the provision of library services?

i.   improved services to users

ii   fast and efficient services to users

iii.   increase in services to users

2. List some technology that can be used in a modern library.

i.   RFID technology

ii.   Robotics

iii   Artificial intelligence

Module 4   Designing Library Architecture

Unit 1:   Needs Assessment of Library Users

Unit 2:   Space Needs of Libraries

Unit 3:   Formation of a Library Building Committee

Unit 4:   Use of an Architect or Library Consultant

UNIT 1:   Needs Assessment of Library Users

Unit Structure

1.1 Introduction

I welcome you to Unit 1 of this module which will discuss the assessment of users' needs. This Unit will expose you to the relevance of the needs assessment of users and how one can conduct a needs assessment to determine the kind of library architecture that will be most appropriate for the library users. I have included some questions to help you evaluate how much you were able to comprehend from this Unit. I wish you all the best.

1.2 Learning Outcomes

By the end of the Unit, you will be able to:

   i. Explain the significance of assessing the needs of library users.

   ii. Discuss how to conduct a needs assessment for library users.

1.3 Needs Assessment of Library Users

1.3.1 Concept and relevance of needs assessment of users

Libraries are established to meet the information needs of users in a community which could comprise children, students, youths, teachers, professionals, artisans, elderly, adults, unemployed, retired and so on. It becomes necessary for the library staff to know what these various users require, so they can provide the infrastructure, resources and services that will be tailored toward satisfying their varied needs. The process of determining what the information needs of the users are is referred to as needs assessment.

1.3.2 Developing and conducting a needs assessment

The needs assessment of users is very important and so library staff must ensure that it is carried out with every form of diligence and commitment. This is so because if it is not done well, the genuine information needs of the users will not be known and this will consequently affect the type of resources (physical, material and human) and services that will be provided. The provision of the resources and services may not be what is required by the users and this may lead to low utilization of resources and services and may amount to a waste of scarce and limited funds.

Altschuld and Kumar (2010) highlighted six steps to follow while developing and conducting a need assessment programme and are: asking questions; knowing your data collection tools; developing the plan; implementing the plan and collecting data; data analysis: and action plan.

    i. **Step 1:** Asking questions -Needs assessments can be utilized for large projects, such as understanding the whole institution the library serves, all the way down to the kinds of technical skills the patron possesses. This process always starts with asking preliminary questions: what kind of information do you want to find out, and what information would be useful for getting to know your primary

institution as you build library services, resources, and programmes? Some other questions that you may ask include: what is the current population and demographic, racial and ethnic representation makeup of the institution; how do your patrons like to receive library and information services? Others include what should the library purchase for the users. All these questions will have implications for the services, collection, programmes and resources the library provides to the community.

ii.   **Step 2: Knowing your data collection tools**– The Librarian needs to know how to collect the data and this will determine the data collection tool to do. This could be raw data obtained from your institution, a survey using a questionnaire, observation, interviews, focus group discussion Etc.

iii. **Step 3: Developing the plan**: In developing a needs assessment plan, the Librarian must think about the users so that the data collection tools are implemented with the appropriate target audiences; otherwise the information gathered may not be useful and the action plans developed around the need may not fill the gap.

iv.   **Step 4: Implement the plan and collect data**: This is done after identifying the kind of information that is needed in order to answer the identified questions and the target audience who would be able to answer those questions.

v.   **Step 5: Data analysis** – The data collected must be checked to ensure it has been able to collect the necessary data. Some of the questions that can assist in the evaluation of the collected data are: what are the common themes that run through all of the data collected; what shows up the most and the least and what is missing? Others are: what are the implications of the information that you found; were your questions answered in full or do you need any additional questions; and what does this tell you about the data that has been collected?

vi.   **Step 6: Action plan** – This involves what you want to do with the data collected, analysed data and its interpretation to build an action plan that can be used to

know the needs of the users and build your library towards fulfilling their information needs and effective service delivery.

Self-Assessment Exercise 1:   This will take you 5 minutes to answer.

1. Write on why you think it is important to assess the needs of library users.
2. Discuss briefly how you will conduct a needs assessment plan for a specified type of library.

1.4   Summary

Unit 1 has ended and I hope you were able to grasp the focus of the Unit. Let me remind you about what was discussed. We looked at what needs assessment is and the relevance to library users. We explained that the needs assessment of library users is significant to determine their information needs, interests and more about the library users to know the appropriate information resources and services to provide. We also discussed how to conduct a needs assessment plan. At the end of the Unit, two questions were asked and I hope you were able to answer the questions. You can go to the end of the Unit to see the answers to those questions and then evaluate yourself. I hope you were able to pass with high scores; if not, please go over the Unit again and then answer the questions again. You should be able to score very high score at the second attempt. Congratulations for your effort.

1.5 Glossary
1.   **Needs assessment:** This is the investigation of the information needs of library users.

1.6   References/Further Readings

Altschuld, J. W. and Kumar, D. D. (2010).   Needs assessment: An overview. Washington, DC: SAGE Publications, Inc.

Witkin, B. R. and Altschuld, J. W. (1995). Planning and conducting needs assessments: A practical guide. Thousand Oaks, CA: SAGE Publications, Inc.

1.7   Possible Answers to Self-Assessment Exercises (SAEs)

Self-Assessment Exercise 1:   This will take you 5 minutes to answer.

1. Write on why you think it is important to assess the needs of library users.
2. Discuss briefly how you will conduct a needs assessment plan for a specified type
   of library.

ANSWERS to SAE1:

1.   Write on why you think it is important to assess the needs of library users.

It is important to assess the needs of the library needs to know the information needs of the users and decide on the appropriate type of information resources and services to provide for the users.

2.   Discuss briefly how you will conduct a needs assessment plan for a specified type of library.

A needs assessment plan for an **academic library** will include the following:

1. Asking questions: The librarians should ask questions from the library users about their demographic, racial and ethnic information, information needs and interests of students, lecturers and non-teaching staff.

2. Knowing your data collection tools: The level of literacy will determine which data collection tool to use. Since the library users will have some level of literacy, the Librarian can use a questionnaire, interviews, and focus group discussions.

3. Developing the plan: The questions to be asked should be simple, logical and easy to answer and the Librarian then organizes the questions that will provide the required information that can indicate what the needs of the library users are.

4. Implement the plan and collect data: With the use of at least two data collection tools (questionnaire and interview), the Librarian decides how to administer the selected data collection tools to the users. Since it is an academic institution, the questionnaire and interview schedule can be done virtually.

5. Data analysis: The Librarian evaluates the data collected and then processes using the appropriate statistical analysis to generate results.

6. Action plan: The results from the analysed data is interpreted and the information is used to know the information needs of the library users and this will determine the kind of information resources and services to provide.

UNIT 2:   Space Needs in Libraries

Unit Structure

2.1 Introduction

You are welcome to Unit 2 to discuss space needs in libraries. In this Unit, we will be looking at the importance of knowing the space needs, its benefit to a space needs assessment in a library and how to conduct a space needs assessment programme. The Unit will also be interactive and I have some questions listed in the Self-Assessment Exercises (SAE) for you to answer at the end of each main section. Best of luck to you.

2.2 Learning Outcomes

By the end of the Unit, you will be able to:

   i. Know what space needs means and its relevance in a library.

   ii. highlight the benefits of library space needs assessment

   iii. ascertain how to conduct a space needs assessment programme for a library

2.3   Space Needs

2.3.1 Space needs and its relevance

The space needed by the library is an important feature that requires concern when considering library architecture. The Librarian must consider the users in terms of space requirements, such that users can change a space within the library as quickly as possible when its necessary based on the needs of the users. This means that the design of the library space must be flexible to cater for users' academic needs and technological needs and such important changes in areas such as layout, movement of shelves, tables, chairs and other furnishings and equipment such as ICT facilities. A space must be defined by the users' needs and must be able to support all student's learning needs such as for collaboration (discussion), individual study, point-of-need services and for sessions taught by faculty for students.

2.3.2 Relevance and benefits of Library Space Needs Assessment

Library space needs assessment is a process that documents and analyzes the space needs of a library. A space needs assessment should be conducted by the library director and board. In some instances, a library could also work with a building consultant. Planning for an effective library facility begins with determining the library's design population; identifying and knowing the population the library is expected to serve. Knowing the design population helps library planners calculate several of the service parameters used to assess space needs in the steps which follow.

There are two key factors to consider in establishing the design population. First, the design population should be a projection of the population in the library's service area

and community. Since library buildings are an important capital investment for most communities, it is crucial that they are planned to respond to current and future needs. The recommended time frame for planning is 20 years, although if the best available projection extends over a shorter period, it is better to adapt the planning horizon and use that projection.

Secondly, the design population should take into account the fact that the typical library serves as an area that extends beyond the community in which it is located. The community may be considered the library's primary service area, but most libraries serve individuals from beyond the immediate community by virtue of reciprocal agreements with neighboring libraries and information centers. To ignore the service implications of traffic generated by these individuals would mean planning a facility that would be outgrown too quickly and this can affect the image of the library in the community.

The benefits of the needs assessment for space is that a library can be used by the librarians and management of the organization to know the space needs of the library based on services rendered and to render and this will determine the adequacy or inadequacy of the available space. This is important as the result from this can be used to solicit for extension of space. It can also be used to advocate for new infrastructure and facilities such as new buildings, shelves and more spaces for various users.

Self-Assessment Exercise 1:   This will take you 2 minutes to answer.

1. Explain why a librarian should consider the space needed in a library.
2. Write on the relevance of a library space needs assessment.

2.4   Space Needs Assessment Programme and Building Programme

A library has to determine the various spaces required for both users and library staff so that this can be used for planning a new library building or renovating an old library building. The library staff has to look at the spaces the library currently has and what are the new spaces require and this can be referred to as a space needs assessment

programme. According to Dahlgren (2009), the space needs assessment programme entails eight steps:

Collection space; reader seating space; staff workspace; meeting room space; special use space; non-assignable space; putting it all together; and the next steps.

i.   **Step 1: Collection space**(projecting collection size, calculating collection space)– The Librarian needs to be able to determine the space required to house the information resources which are both print and electronic. For the print resources, the number of shelves that are needed to shelve the present and proposed new acquisition must be estimated. A typical section of library shelving allows a specific amount of linear feet of shelving space, which in turn affords a certain capacity per shelving unit. Each shelving unit occupies a discrete amount of floor space, so one can estimate the number of volumes that can be housed per square foot of floor space. Given this direct link between the size of the collection and the floor space required to house it, the projection of collection size is one key to determining a library's space needs.

For non-print resources such as audio and video, the Librarian should determine the size of the audio and video collection and this can be used to estimate the amount of space required to house the collection. Public access computer stations are required to be provided for users to access the Online Public Access Catalog (OPAC) and subscribed electronic resources. This means the space for these stations must be calculated and taken into consideration for space requirements for the library. The space allocation needed for public access computer workstations will be affected by the number of computers the library provides.

A library that provides a large inventory of public access computers is more likely to achieve economies of scale as the stations are deployed across the floor, and those economies of scale can lead to a smaller space allocation per station. A library with a smaller inventory of public access computers will often need a

larger allocation of space per station. To enjoy the economies of space, public access computer stations should be concentrated in one or two areas in the library. Taking all of these factors into account, a minimum allowance of 35 square feet per public access computer station is recommended, a moderate allowance of 45 square feet per public access computer station is recommended and an optimum allocation of 50 square feet is recommended.

ii. **Step 2: Reader seating space -** Space is needed for reading in any physical library as you will always have some users come to the library to read. This will include seating at tables, carrels, lounge chairs, and the like. It can also include other types of settings for different purposes and activities depending on the type of the library. The library will probably provide additional spaces where a patron may sit, at some of the public access computer stations, in small group study rooms. It is recommended that the library should provide five reader seats for every 1,000 people in its community.

iii. **Step 3: Staff workspace** – Space must be provided for all library staff to carry out their various functions to succeed in good service delivery. In determining the workspace for staff, the appropriate number of service points, appropriate staffing levels at each service point and department examine present staff assignments and workloads must be considered. The Librarian should examine trends in service patterns and compare local staffing patterns with those of neighbouring libraries and other libraries of comparable size.

The particular furnishings and layout for each staff workstation will vary depending on the specific work routine the station supports. This means the space required by a library staff in one department will be different from one in another department in the same library. The space allocation for most staff workstations will fall within a range of 125 to 150 square feet, although some may require even more and others will require less. For purposes of making an initial calculation of the library's space need, apply a minimum recommended allocation

of 125 square feet per station, a moderate allocation of 140 square feet, while an optimum allocation is 150 square feet.

iv. **Step 4: Meeting room space**– Libraries should provide spaces to facilitate meetings for users. Such spaces will allow users to have discussions in groups, rooms for different activities and training programmes (conference, lecture), maker spaces and so on. The number and size of meeting rooms should be determined by the library's anticipated programmes or activities and by the availability of similar rooms elsewhere in the community for use by other local groups. The desired audience capacity for the different activities will determine much of the space that will be needed in a library.

v. **Step 5: Special use space -** Libraries should allocate spaces for some furniture such as index tables, newspaper racks, pamphlet files, microfilm readers, or photocopiers. A library should also create space for small group study rooms as well as a staff lounge or break room. More libraries are seeking to accommodate some kind of refreshment or beverage service, server room, dedicated stations for self-check-out activities, library cafe as spaces that classify under the special use space. At a minimum, special use space will likely occupy about 12% of the gross area of the library building, while a moderate allocation will be in the range of 15% of the gross area of the building and an optimum allocation will be about 17% of the gross area of the building. Planners of library space (Librarian and architect) should consider whether a minimum, moderate, or optimum allocation is most suitable.

vi **Step 6: Non-assignable space** - Dahlgren (2009) referred to some spaces in a library as non-assignable space and these are that portion of a building's floor space that cannot be applied or assigned directly to library service. Examples are furnace rooms, janitor's closets, telecommunications closets, storage rooms, vestibules, corridors, stairwells, elevator shafts, and restrooms. Such space is necessary to support the operation of the building, but it cannot be used directly for library service. Non-assignable space generally comprises about 25 to 30

percent of the gross square footage of the finished building. A minimum allocation will represent 25% of the gross area of the building. A moderate allocation will represent about 27% of the gross area, while an optimum allocation will represent 30%.

Planners will need to determine what points within this range represent the best estimate of the library's space needs for non-assignable purposes. The final allocation of non-assignable space will depend on the efficiency of the library design, the size of the project, whether the project involves new construction or alterations of an existing building, and possible site constraints, among other factors. A smaller building is more likely to have a larger proportionate non-assignable space allocation. Projects that involve the expansion or adaptation of an existing structure are also more likely to have a larger proportionate non-assignable space allocation.

vii   **Step 7: Putting it all together -**The space needs estimates developed in Steps 1 through 4 for collection space, reader seating space, staff workspace, and meeting room space can be added to derive a subtotal of four of the six kinds of space needed. Based on the allocations selected for special use space and non-assignable space (minimum, moderate, or optimum), a calculation is made to translate the subtotal into an estimate of the gross area needed for the building. If a library chooses to apply the minimum level for both special use space and non-assignable space, for instance, the combined allocation for these purposes will represent 37.5% of the gross area of the building. This means that the allocation for the remaining types of space – those in Steps 1 through 4 – will constitute 62.5% of the building's area, and the gross area can be calculated by dividing the subtotal derived from Steps 1 through 4 by 62.5%. Then add the estimates for each of the six types of library floor space to produce an estimate of the library's overall space needs.

Finally, consider whether the library expects to make any further accommodations for services and functions that may not be sufficiently accounted for in these calculations. For example, more and more libraries today are considering installing automated materials handling machines that receive returned materials, automatically discharge the returns, and then mechanically sort the returns into a variety of bins or carts.

viii   **Step 8: The next steps** – The space requirement steps should be completed from time to time, as changing estimates of the community's population and demographics warrant, but no less frequently than every five years. Once the outline is completed, library planners will have an estimate of their library's overall space needs. A comparison of this estimate with the existing facility may highlight a significant deficiency in the space the library provides. If this procedure documents a need for expansion, the Librarian should closely examine the space needs assessment, re-examine and confirm the planning assumptions that went into the estimates. The Librarian should ask these questions: are the population projections reasonable; will the collection actually grow to the anticipated size; should more seating be provided or less; are there sufficient workstations and so on.

The space needs assessment can also be refined through a more narrow examination of the six broad types of space. This is done by: identifying collections and service areas that were not fully or adequately discussed in the context of the outline, classifying the broad types of space discussed in the outline into functional groups and arrangements and specifying the unique environments and conditions to be found in the library.

Self-Assessment Exercise 2:   This will take you 5 minutes to answer.

1. Discuss how you will carry out a space needs assessment plan in a library.

2.5   Summary

The end of Unit 2 is here. In this Unit, space needs and assessment were discussed. We mentioned that the space required for the library to carry out all its functions must be known by the Librarian. With the spaces required for rooms needed, we also explained that these spaces must be estimated so that this will affect the size of the library building and ultimately affect the library architecture. I also highlighted how to design learning spaces. I asked you some self-assessment questions at the end of each of the sections. I hope you were able to answer the questions correctly. At the end of the Unit, I have provided answers to the questions that you can use to assess yourself. I expect that you did so well, however, if you did not score high scores, please go back to the beginning of the Unit and go through the notes again and take the questions again. I am convinced you will score higher marks this time. You can do it.

2.6   Glossary

1.   **Space needs:** This is the requirement of space for the library

2.   **Space Needs Assessment:** This is the evaluation of the space required for all the activities and services in a library.

3.   **Learning spaces:** These are spaces allocated in a library to facilitate collaborative learning between users and users and lecturers.

2.7References/Further Reading

Dahlgren, A. C., (2009). Public Library Space Needs: A Planning Outline. Wisconsin Department of Public Instruction.

2.8   Possible Answers to Self-Assessment Exercises (SAEs)

Self-Assessment Exercise 1:   This will take you 2 minutes to answer.

1. Explain why a librarian should consider the space needed in a library.
2. Write on the relevance of a library space needs assessment.

ANSWERS to SAE1:

1. **Explain why a librarian should consider the space needed in a library.**

    A librarian needs to consider the different activities carried out in the library to determine the spaces each of these activities will need. The determination of the spaces for each of these activities will determine the entire space required for the library to function very well and provide the required services to the users.

2. **Write on the relevance of a library space needs assessment.**
    Space needs assessment in a library is significant as it determines the space required for all the different activities and services in a library. This will determine the size of the library building to be designed to cater for the present and future library users.

Self-Assessment Exercise 2:   This will take you 3 minutes to answer.
1. Discuss how you will carry out a space needs assessment plan in a library.

ANSWERS to SAE2:

1. Discuss how you will carry out a space needs assessment plan in a library.

I will determine the spaces required in the library. Some spaces that will be included are library collections, reading rooms, staff offices, computer workstations, discussion and group meetings, learning and other programmes. With knowing the different spaces required and the population, I will be able to estimate the spaces for each room and then provide a total estimate of the spaces required in the library.

Unit 3:   Formation of a Library Building Committee

Unit Structure

3.1   Introduction
3.2   Learning Outcomes

3.3   Formation of a library building committee
        3.3.1   Composition and responsibilities of a library building committee
        3.3.2   Role of the Librarian in a library building committee
        3.3.3   Role of the Architect in a library building committee
3.4   Summary
3.5   Glossary
3.6   References/Further Readings
3.7   Possible Answers to Self-Assessment Exercises (SAEs)

3.1   Introduction

I welcome you to Unit 3. This Unit will discuss about the formation of a library building committee. Who are those that will make up a library building committee and their roles will be the focus of the Unit? I have included some questions for you to evaluate your knowledge of the composition of the library building committee at the end of each subheading in this Unit. I am convinced that you will be able to answer almost all, if not all of the questions. Let us move now.

3.2 Learning Outcomes

By the end of this Unit, you will be able to:

i.   explain the people that constitute a library building committee

ii.   discuss the roles of the people in a library building committee

iii.   determine how to constitute a library building committee

3.3 Formation of a library building committee

3.3.1 Composition and responsibility of a library building committee

It is desirable to form a small building committee to handle the full process of the library building. This committee may consist of a representative from all concerned groups as well as the architect and the Librarian. A building committee should be appointed to assist in the preparation of a concept or programme evaluation of building plans. Any major architectural project will involve a diverse group of people. The building

committee should consist of the following: Librarian; architect; library consultant; interior designer; head of the institution and others (Metcalf, 2015).

The responsibilities of the library building committee are:

i. **Planning**: The building committee is expected to conduct widely to ascertain the library's needs and for accumulating necessary data. The committee should acquaint itself with the experience of other libraries with respect to new buildings and this may include visiting such libraries to examine their library building plans. With the assistance of the librarian and library consultant, the committee should make detailed estimates of the requirements of the different library units and this will guide them in planning for the new library building.

ii. **Arranging the library building programme:** The plan that has been decided is documented and should be prepared by the Librarian, library consultant and by the architect. Space requirements should be given in detail and must be stated for each of the units or offices or activities.

iii. **Space estimates:** In the early stages of planning, it is helpful to make some rough estimates of space requirements in terms of floor area. These estimates can be used in calculating the probable cost of construction and they can be kept in mind when building sites are being considered. There is no standard measure that can be followed for every library.

iv. **The preliminary plans:** This represents the most important phase of the whole planning process where the architect produces a rough drawing of the main floor with the Librarian playing an important role in this plan. The Librarian should examine critically the architect's first drawing to determine whether an adequate provision is being made for each library function and whether the building as a whole will be sufficiently flexible and expandable for future use. After establishing the arrangement between the architect and Librarian, the architect may draw a detailed plan. If the cost estimates are satisfactory and no

important problems remain, the preliminary plan will be approved and the architect will be authorized to prepare a large plan and specifications.

v. **Final plans and specifications:** Final plans will consist of floor plans, elevations and sections and details of the structure and this will provide graphic illustrations of the building from several physical viewpoints. The general construction plans will be supplemented by a separate set of drawings illustrating the design of the heating, ventilating and air-conditioning systems. There will be additional drawings illustrating the detailed design and location of many general and special features of the building such as stacks, furniture Etc. This plan will be supported by written specifications describing the type and quality of materials to be used and any other information necessary for the builder. Then it can be placed for final approval of the committee.

vi. **Selecting the site:** It is important to select a good site for the library building and some things to consider are: is its size adequate; what is its relation to neighboring buildings, to the whole population and traffic flow of the institution and what orientation is possible for a library building erected on it? Other questions to ask are: are there advantages or disadvantages in the slope of the land; and what complications will arise from the nature of the ground beneath the buildings? The site should be large enough to accommodate the present building and pursuit future expansion and should have an excellent surrounding and a quiet environment. The library buildings should be situated centrally with pleasant surroundings and convenient accessibility where there is no contamination of air, sound Etc. will occur. Keeping it as widely as possible adjacent to the user's place.

3.3.2 Role of the Librarian in a library building committee

A librarian should be the central figure in all the building committee and working out the details of the functions of the library and its specific area. The Librarian also works with

the architect who gives a graphic expression to the details worked out by the Librarian. The plans and sketches must include floor plans and elevations indicating the various allocation of the space to each function and the interrelation of each area.

The Librarian is a person having a sound knowledge of the functions and objectives of the library and who is authorized to supervise the library planning committee. Once the Librarian has prepared himself well, he can play his role with confidence and can give counsel with authority. All professional librarians must be conversant with the fundamentals of good library architecture and they should courageously oppose, with facts and figures, all efforts to erect buildings not functionally planned. The Librarian must have the assistance of a representative of the faculty and administration and be careful about the new building plan so that a revaluation of the library service of the entire institution and library budget which will permit the complete and effective meaning of the building is ensured.

The Librarian should realize that there are changes in the information needs of users and educational methods and so should plan new building or alter the old ones to take care of such future changes and make them as flexible and adaptable to such changes that may occur in the future.

3.3.3 Role of the Architect in a library building committee

The management may appoint a group of architects or engineers responsible for the entire planning work actively participated by Librarian with a librarian-consultant as the chief adviser. A librarian consultant in some cases, may be entrusted with the task of preparing the building plan in consultation with the architect and the Librarian. This has been found to be a more useful method in all phases of planning then the one in which professional advice is not considered effective.

The architect is the one that has the technical expertise in drawings and designs. The architect listens to what the Librarian desires for the new library building in terms of spaces and facilities and then puts this into a drawing. The drawing put up by the

architect takes into consideration all the structural and physical specifications that will enable the desired library building to become a reality.

Self-Assessment Exercise 1:   This will take you 5 minutes to answer.

1. List the people that constitute a library building committee
2. Explain the role of the Librarian in a library building committee.
3. Briefly write on the role of the architect in a library building committee.

3.4 Summary

We have come to the end of Unit 3. In this Unit, the library building committee was discussed. We explained the composition and relevance of the library building committee. The role of the Librarian as the convener and lead adviser of the library building committee was discussed alongside the role of the architect. At the end of this Unit, there are some questions for you to answer. Please go to the end of this Unit to see the answers to the questions and grade yourself. I expect you to get a minimum of 60%. If you did, congratulations. If you did not, please go back and study the Unit again, questions and answer them again at your convenient time. Do not give up.

3.5 Glossary

1.   Library Building committee: This is a group of people that are involved in planning a library building.

2.   Architect: These are professionals that are involved in building structures.

3.6   References/Further Readings

Metcalf K.D. (2015). Planning Academic and Research Library Buildings. New York, McGraw hill, 1965. p.16 4. CANTY (Donald).

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3.7 Possible Answers to Self-Assessment Exercises (SAEs)

Self-Assessment Exercise 1:   This will take you 5 minutes to answer.

1. List the members that constitute a library building committee.
2. Explain the role of the Librarian in a library building committee.
3. Briefly write on the role of the architect in a library building committee.

ANSWERS to SAEI:

1.   List the members that constitute a library building committee.

The members of the library building consultant are: Librarian; architect; library consultant; interior designer; head of the institution and others.

2.   Explain the role of the Librarian in a library building committee.

The Librarian is the arrowhead of the library building committee who coordinates all the other members and ensures that the purpose for a new library building is fulfilled with all the needed spaces accommodated.

3.   Briefly write on the role of the architect in a library building committee

The architect is the technical person who knows about specifications for drawings and designs based on the recommendation of what is needed in the library as stated by the Librarian.

UNIT 4:   Use of an Architect and a Library Consultant

Unit Structure

4.1 Introduction
4.2 Learning Outcomes

4.1 Introduction

You are welcome to Unit 4. This Unit is about the use of an architect and a library building consultant. The qualities of an architect and a library building consultant are discussed. This Unit will provide information on the qualities you should look at before choosing a person as an architect or a library consultant for your library building committee. I have included some questions for you to evaluate your knowledge on components of library architecture at the end of each subheading in this Unit. I am convinced that you will be able to answer almost all if not all of the questions. Let us move now.

4.2 Learning Outcomes

By the end of this Unit, you will be able to:

   i.   identify the qualities of an architect for the library building committee

   ii. explain the qualities a library building consultant

4.3 Use of an Architect and or a Library Consultant

4.3.1 Selection criteria for an architect in the library building committee

Many library managers around the world are developing close working relationships with their architects and building consultants to design libraries that provide a sense of community, using appropriate ways of finding colour, light, technology and facilities to suit various types of use and user. The selection of an architect or a building engineer or a consultant is obviously a key element in the planning and design of a library.

There are a number of ways of entering into a selection process such as open or limited design competition, a tender process, calling for expressions of interest or choosing an architect outright based on experience and reputation. Each method can have advantages and pitfalls but in all cases, it is imperative that the project working group is confident they have engaged a professional with whom they can work collaboratively. In almost all cases there will be a need to call for some form of tender for professional services. Local councils will have a policy and procedure for calling of tenders and the appointment of consultants.

Schmidt and Wilson (2012) opined that in choosing an architect during the library building design stage, finding the right one is essential to the success of the library building project. Selecting an architect can be achieved in several ways. Architectural competitions are quite common and prospective architects should be requested to submit their previous and current designs. The Librarian can request the services of a renowned architect and this is common in many large building projects where world-renowned architects are requested to work overseas to design library buildings.

The inclusion of an architect in the library building committee is important and the Librarian needs to ensure that a competent architect is chosen for the success of a good library building. In selecting a competent architect, the Librarian can use these criteria: technical capability; recent relevant experience in designing sustainable buildings; proven design capability; design excellence awards; cost-effectiveness and value for money; quality and completeness of the information supplied with the submission; ability to undertake value management exercises to bring the design in on budget; quality assurance; and professional indemnity insurance.

The architect must have demonstrated competence in similar building projects which are on the scale of your project. The list of projects, especially recent ones, which the candidates supply should be examined and references from previous clients should be

followed up. Experience in the planning and design of a successful library building may be a distinct advantage, although care should be taken in assessing this.

The architect must be a good communicator, able to explain orally, graphically and in writing when required, his or her own points of view. He must be a good listener, able to listen to the Librarian's views and requirements to make him come up with the appropriate design that will meet the needs of the library. The architect will require patience in handling discussions with the Librarian and in painstakingly working through layouts, concepts and explaining proposals. These interpersonal qualities may emerge at the interview and should certainly be explored in discussions with referees. An architect who is good at 'selling' a design will be a good ally when presenting schemes for approval to governing bodies, and at public presentations.

The architect should be hired only after a library has completed these beginning steps of construction planning. The architect can then use the library building programme in designing the building. In hiring an architect, the library should solicit applications, rank them by preference, and then enter into negotiations with the top choice, conducting personal interviews with the person or firm that interests the library management. The past experience of the architect should be considered, as well as the architect's personal philosophy. The final fees of the architect should be discussed and an agreement reached. If an agreement cannot be reached with the first choice, the library management then declares that is the case and enters negotiations with the next candidate.

4.3.2 Qualities of a Library Building Consultant

A library consultant is usually an experienced librarian who has participated in several building projects. The library consultant works with the library management and the architect to carry out services such as: surveying the library's space needs; writing the library building programme; project a preliminary project budget; and provide site analysis and recommendations, advice on funding options and assistance in the selection

of the architect. Other responsibilities of the library building consultant are to review needs, specifications, and layout for shelving, furniture, and equipment; review all plans prepared by the architect and provide a written evaluation; and provide a final inspection of the facility.

The library management in considering an individual for the position of a library building consultant should consider the following criteria:

i. **Competence and relevant experience** – A major characteristic of a library buildings consultant is a considerable experience in library building design so that he is able to assess how libraries can meet different needs in different situations. It is vital for the consultant to have had experience, preferably senior experience, in as many capacities as possible in different kinds of the library so as to be able to visualize the needs of the project librarians in the proposed project.

ii. **Ability to understand the client's needs -** The library building consultant must show an ability to understand and interpret the client's needs, be receptive to other people's ideas and be open to their suggestions. This characteristic can be discussed informally with referees and should also emerge during the interview process. Having had the advantage of reading the brief and having thought about it, the library consultant should be able to demonstrate an affinity with and sympathy for what the client is aiming to achieve.

iii. **Good communication skills**: The library consultant must be able to communicate the library needs to the architect. This means the individual must have an excellent ability to explain, orally and in writing as required the needs of the library, so that the architect can have a clear understanding of what the library needs.

iv. **Creativity and imagination**: The library consultant must be able to present the need and requirements for a new library with a great deal of emphasis on the functionality of design, with flair, imagination and creativity. The resulting

building must be outstanding in the way it functions and in the way it attracts and inspires users.

Self-Assessment Exercise 1: This will take you 5 minutes to answer.

1. Mention at least four qualities you will use to select an architect for a library building?
2. Briefly explain four criteria you will use to select a library consultant for the building.

4.4 Summary

Unit 4 has come to an end. In this Unit, the qualities of an architect or a library consultant were discussed to highlight the criteria relevant to the choice of an architect and library consultant. The choice of a good architect and library consultant is important in library architecture so that the most appropriate architecture is applied. I asked you some self-assessment questions at the end of each of the sections. I hope you were able to answer the questions correctly. At the end of the Unit, I have provided answers to the questions that you can use to assess yourself. I expect that you did so well; however, if you did not score high scores, please go back to the beginning of the Unit and go through the notes again and take the questions again. I am convinced you will score higher marks this time. You can do it.

4.5 Glossary

1. **Architect:** this is the specialist that draws designs into actual reality to a physical building

2. **Library consultant:** is a library professional that is not an employed person by that organization but has the skills to investigate the needs of the library users and library requirements to meet those needs and can convey such information to an architect to provide an appropriate library building and architecture.

4.6 References/Further Readings

Schmidt, J. and Wilson, H. (2012). The Architect/Librarian Team Ensuring excellence in Library design. https://www.researchgate.net/profile/Janine-

Schmidt-
3/publication/237329817_The_ArchitectLibrarian_Team_Ensuring_excellence_in
_Library_design/links/58f56dd80f7e9b6f82e8bf70/The-Architect-Librarian-Team-
Ensuring-excellence-in-Library-design.pdf

4.7   Possible Answers to Self-Assessment Exercises (SAEs)

Self-Assessment Exercise 1:   This will take you 5 minutes to answer.

1. What are the four qualities you will use to select an architect for a library building?

2. Briefly explain four criteria you will use to select a library consultant for the building.

ANSWERS to SAE1:

1. Mention at leastfour qualities you will use to select an architect for a library building?

    i.   Technical competence

    ii.   Ability to listen to details

    iii.   Good communication skills

    iv.   Innovative

    v.   Good interpersonal skills

    vi.   Patience

2. Briefly explain four criteria you will use to select a library consultant for the building.

    i.   Professional competence

    ii.   Ability to understand the client's needs

    iii.   Good communication skills

    iv.   Creativity

MODULE 5   **GREEN LIFE BUILDING**

Unit 1:   Explanation, relevance and components of a Green Life Building

Unit 2:   Green Libraries

UNIT 1

Unit Structure

1.6 Introduction
1.2 Learning Outcomes
1.3 Explanation and relevance of a Green Life Building
      1.3.1   Explanation of a Green Life Building
      1.3.2   Relevance of a Green Life Building
1.4 Components of a Green Life Building
1.5 Summary
1.6Glossary
1.7   References/Further Readings

1.8   Possible Answers to Self-Assessment Exercises (SAEs)

1.1 Introduction

You are welcome to Unit 1 of this module. This Unit is on the explanation of green life building and its relevance. We shall also be discussing the components of green life building. This Unit will be interactive and will lay the foundation to understand the relevance of library architecture. I admonish you to pay attention and contribute so you will be able to gain all the required knowledge about the concept of library architecture. With good attention and participation, you will be able to answer all the questions correctly at the end of the Unit.

1.2 Learning Outcomes

By the end of the Unit, you will be able to:
    i.   Explain what green life building is about.
    ii. Write on the relevance of green life building.
    iii. Discuss the components of green life building.

1.3 Explanation and Relevance of a Green Life Building
1.3.1   Explanation of a Green Life Building
A 'green' building is a building that, in its design, construction or operation, reduces or eliminates negative impacts and can create positive impacts on our climate and natural environment.Deuble and De-Dear (2012) also stated that green buildings, often defined as those featuring natural ventilation capabilities, i.e. low-energy or free-running buildings, are now at the forefront of building research and climate change mitigation scenarios. Chatterjee (2009) defined the "green building practice" as a process to create buildings and infrastructure in such a way that minimize the use of resources, reduce harmful effects on the ecology, and create better environments for occupants.

Leilei (2021) noted that the 'green' of 'green building' does not mean the general sense of vertical greening roof garden; instead, it represents a concept or symbol that refers to a

building that is harmless to the environment. It can make full use of environmental natural resources and is built without destroying the basic ecological balance of the environment. They can also be called sustainable development buildings, ecological buildings, and natural buildings.

1.3.2 Relevance of a Green Life Building

Green building is a high-quality building in the whole life cycle, which saves resources, protects the environment, reduces pollution, provides people with healthy, applicable and efficient use of space, and maximizes the harmony between man and nature. Green buildings preserve precious natural resources and improve our quality of life. The benefit of green building includes environmental, economic and social benefits. The most vital benefit of green buildings is that they help reduce pollution. Facilities are responsible for a significant portion of air pollution, and by using materials and designs that limit emissions, green buildings can make a big difference.

Green buildings also tend to be more energy-efficient than traditional structures because they use less electricity and generating fewer greenhouse gases. With the reduction in the use of energy, this can have a significant impact on climate change. In addition to helping the environment, green buildings also offer many benefits for the people who occupy them as the spaces are more comfortable and healthier, with improved air quality and natural light.

1.4 Components of a Green Life Building

Green building components refer to the various elements that make a structure environmentally friendly. It includes everything from the materials used in construction to how it operates. Utilizing green building components can have some benefits, both for the environment and for the people who occupy the space. World Green Building Council (2022) opined that there are a number of components and elements which can make a building 'green'. These include:

1. Efficient use of energy, water and other resources
2. Use of renewable energy, such as solar energy
3. Pollution and waste reduction measures, and the enabling of re-use and recycling
4. Good indoor environmental air quality
5. Use of materials that are non-toxic, ethical and sustainable
6. Consideration of the environment in design, construction and operation
7. Consideration of the quality of life of occupants in design, construction and operation
8. A design that enables adaptation to a changing environment

The components of a green life building are categorised into seven to make a building more efficient and environmentally friendly:

1. **Aluminum weather-resistant insulated access panel -** It is essential to use an aluminum weather-resistant insulated access panel to create a tight seal that will keep the inside of your building comfortable and dry. Aluminum panels help regulate indoor temperature and prevent moisture and pests from entering.

2. **Energy-efficient windows -** Windows are one of the most significant sources of heat loss in a home, so it is essential to choose windows that will help keep the heat inside. There are many different types of energy-efficient windows on the market, so the choice that fits your style and budget should be selected and budget.

3. **Green roofs -** Green roofs have become more popular because they help insulate a home and reduce the amount of heat lost through the roof. They also help reduce stormwater runoff and provide additional living space for plants and animals.

4. **Solar power - This** is a renewable energy source that heats and cools a home and provides electricity. Solar power is becoming increasingly affordable, and it is a great way to reduce your carbon footprint.

5. **Water conservation** – There are various ways to assist in conserving water in your home, include installing reduced showerheads and toilets, collecting rainwater in barrels, and xeriscaping your landscaping. Water conservation is important because it helps reduce the amount of water in a home, saving money on your water bill.

6. **Recycling - This** is an excellent way to minimize the amount of waste generated in the home. It is also a great way to re-use materials. There are many different recycling programs, so you can find one that works for your family.

7. **Landscaping -** This can help reduce the amount of heat absorbed by a home, and it can also allow cooling of the air around a house. Trees and shrubs can provide shade and windbreaks, and they can also help filter pollutants.

Self-Assessment Exercise 1:   This will take you 5 minutes to answer.

1. What do you understand by green life building?
2. Write on the components of green life building.

1.5   Summary

This is the end of Unit 1. I hope you were able to get the foundational knowledge of green life building. In this Unit, green life building was defined and its relevance to the health environment was highlighted. We moved on to discuss the seven components of green life building: energy-efficient windows; aluminum weather-resistant insulated access panels; green roofs; solar power; water conservation; landscaping and recycling. There were two self-assessed questions that I asked you and I hope you were able to answer them very well. At the end of the Unit, I provided answers to these questions and you can evaluate yourself. I hope you were able to score a minimum of 60%, if yes, congratulations. If not, then you need to go through the content of this Unit again to acquire the required knowledge before moving to Unit 2.

1.6   Glossary

 Green life building: This is a building that is constructed to reduce the negative impact on health, climate and the natural environment.

1.7   References/Further Readings

Chatterjee, A. K. (2009). Sustainable construction and green buildings on the foundation of building ecology. Indian Concrete Journal, 83(5): 27-30.

Deuble, M. P. and De-Dear, R. J. (2012). Green occupants for green buildings: The missing link? Building and Environment, 56(2012): 21-27.

Jackson,   C.   https://www.construction21.org/articles/h/the-7-green-building-components.html

Leilei, Z. (2021). Research on the Application of Green Building in Building Design. IOP Conference Series on Earth and Environmental Science 783(2021) 012160. doi:10.1088/1755-1315/783/1/012160.

https://www.ifla.org/ifla-green-library-definition/

1.8   Possible Answers to Self-Assessment Exercises (SAEs)

Self-Assessment Exercise 1:   This will take you 5 minutes to answer.

1. What do you understand by green life building?
2. Write on the components of green life building.

ANSWERS to SAE1:

1. **What do you understand by green life building?**

    Green life building is a building that is constructed to minimize the use of resources, reduce harmful effects on the ecology, and create better environments for occupants.

2. **Write on the components of green life building.**

1. **Landscapping**

2. **Energy efficient windows**

3. **Aluminum weather-resistant insulated access panel**

4. **Green roof**

5. **Solar power**

6. **Water conservation**

7. **Recycling**

Unit 2Green Libraries

Unit Structure

2.1   Introduction
2.2   Learning Outcomes
2.3   Green Libraries
        2.3.1   Definition and benefits of a green library
2.4   Challenges and solutions in green libraries
2.5   Summary
2.6Glossary
2.7   References/Further Readings
2.8   Possible Answers to Self-Assessment Exercises (SAEs)

2.1   Introduction

You are welcome to Unit 2 of this module. This Unit is on green libraries. This Unit will provide the background information on green libraries. We shall discuss the benefits of green libraries and the challenges and solutions in green libraries. This Unit will be interactive and I admonish you to pay attention and contribute so you will be able to gain all the required knowledge about green libraries. With good attention and participation, you will be able to answer all the questions correctly at the end of the Unit.

2.2   Learning Outcomes

By the end of the Unit, you will be able to:

   i.   Define a green library.

ii. Highlight the benefits of a green library.

iii. Discuss the challenges that occur in green libraries and solutions to them.

2.3 Green Libraries

2.3.1 Definition and benefits of a green library

A green library is a library built with environmental concerns in mind and is also known as a sustainable library. Libraries are not only repositories of knowledge but are also important information resources for raising awareness about environmental concerns. Green libraries educate the public about environmental issues through their collections, sustainable and environmentally friendly facilities and programmes.

The benefits of green libraries can be summarized as maximizing the effects of natural sunlight and natural air flow; green libraries are thoughtfully designed while taking into account site selection to structural design, energy use, materials used and human health. Green libraries seek to reduce the use of water and energy by designing the building to maximize the use of natural and renewable resources. They also integrate actual plants into the building design, preferably with drought resistant and/or native vegetation. Another benefit of a green library is in the maintenance of high standards of indoor air quality to help ensure the health of the people who inhabit the building.

Modern architecture are using the latest technologies to construct modern buildings, including libraries as energy-efficient or eco-friendly buildings so that buildings do not harm the natural environment. The notion is for such buildings, including libraries to be able to preserve the environment. A green library is therefore, designed to minimize the negative impact on the natural environment and maximize indoor environmental quality by means of careful site selection, the use of natural construction materials and biodegradable products,conservation of resources and responsible waste disposal.

A green library is expected to consider the environmental and social sustainability and should therefore have a clear sustainability agenda which is as follows:

i. **Green buildings and equipment**: there must be a reduction in the emission of the equipment and building;

ii. **Green office principles**: the routines, activities and procedures in the library must be environmentally sustainable;

iii. **Sustainable economy**: Consumption is restrained, circular and sharing economy practices are advanced and are made accessible to the community.

iv. **Sustainable library services:** Relevant and up-to-date information is easy to access for users, shared spaces, devices, and environmental education is offered, and operations are efficient. The library has a positive carbon handprint.

v. **Social sustainability**: Good education, literacy, community engagement, cross-cultural diversity, social inclusion, and overall participation are considered. The library works actively to reduce inequality.

vi. **Environmental management:** Environmental goals are SMART (Specific, Measurable, Achievable, Realistic and Timebound), and the library works to decrease its own negative impact on the environment. The library's environmental policy, its implementation and the results of environmental work are communicated to a broader audience.

vii. **Commitment to general environmental goals and programmes:** Commitment is guided by the UN Sustainable Development Goals, the Paris Climate Agreement and related environmental certificates and programmes.

2.4   Challenges and Solutions in gGreen Libraries

Libraries globally have specific needs based on the users and their needs and this makes them encounter some challenges. Therefore, with green libraries, it is expected that there would also be challenges that they face and they must find ways of reducing or removing such challenges. Print materials must be kept away from sunlight as well as moisture and

temperature changes. However, many individuals find sunlight to be the most enjoyable light for reading. Sunlight also plays a major role in green design because it can be used to reduce the reliance on artificial lighting. For a long time, libraries needed to protect the collection from the damaging ultraviolet rays of the sun. New developments in glass technology over the past ten years have given designers more flexibility in their ability to place collections (Mcabe, 2003).

In libraries, most print materials are heavy and a common strategy in green design is to raise the floors to increase circulation, but the weight of the stacks can be an impediment to this strategy. To deal with this challenge, many designers have resorted to zoning the library into designated areas, so these strategies can be enacted in certain areas and alternatives can be used in others. Libraries need to be built flexibly in order to make room for expansions in size and in wiring capabilities. Library buildings are long-term investments made to benefit the community, so when designing them, architects need to be looking 50 or 100 years into the future. These obstacles by no means present insurmountable challenges to green libraries.

Green libraries should consider the following as they may become environmental challenges:

1. **Mission**: All libraries have the mission to improve the condition of mankind. An institution can no longer, in good faith, aim to improve the human condition while contributing to the destruction of the earth: buildings produce about 40 percent of the dangerous greenhouse gasses emitted into the atmosphere (Anisko&Willoughby, 2006). Libraries as public buildings meant for the benefit of all, have the responsibility not to contribute to the destruction of the environment to educate the community regarding our current situation and empower them to make a difference. Libraries are discovering that their green building gives them a great opportunity to educate the citizenry (Tseng, 2007). As libraries continue to take a more progressive stance on improving the human

condition, sustainability will have to be a central theme. Green libraries often offer various programmes about environmental education by explaining how they are reflected in their architectural design and mechanism.

2. **Technology**: Green buildings including green libraries are constructed all over the world in every sector of the economy; residential, commercial, non-profit, government, Etc. Another breakthrough is the diversity of green technology. There is an abundance of options, so any green builder has the ability to capitalize on the local natural resources available and customize the building to most efficiently operate in the local environment. Along with the advancement of technology, the increasing awareness of environmental issues decreases the burden on the green builder.

3. **Image**: Today, the library is undergoing an identity transformation and it is expected to stay relevant by considering the needs of users. While its image as an outdated institution is not entirely deserved, it is trying to assert itself as an irreplaceable part of the community that plans on being an assertive force for good in the twenty-first Century. Green design helps it do that in three different ways. First, a sustainable building makes a statement that the library is investing in the future of the community. Second, sustainable buildings are smartly designed, aesthetically pleasing, and are powered by state-of-the-art technology. When people see these emerald marvels, they will no longer be able to maintain false stereotypes regarding libraries as anachronistic relics from an analog age. Finally, as more people take the environment seriously, a green image can improve an institution's image. In addition, many green libraries are actively educating the community about environmental concerns through their collection development and public programmes.

4. **Independence**: As publicly funded institutions, libraries are constantly battling with budget issues. Swings in the economy can affect the available funds coming into the library, as well as new legislation. The sustainable design offers libraries

a way to reduce maintenance and energy costs, providing them with a degree of independence.

> **Self-Assessment Exercise 1:   This will take you 5 minutes to answer.**
>
> 1. Define a green library?
> 2. Write on the importance of a green library
> 3. Highlight some challenges that may occur in a green library

2.5   Summary

We have come to the end of Unit 2. In this Unit, we defined a green library and also the benefits of having green libraries. Green libraries are established to minimize the negative effect of the activities and emissions on the environment and health. We also discussed some challenges that may occur in green libraries as related to their mission, technology, image and independence. There were two self-assessed questions that I asked you and I hope you were able to answer them very well. At the end of the Unit, I provided answers to these questions and you can evaluate yourself. I hope you were able to score a minimum of 60%, if yes, congratulations. If not, then you need to go through the content of this Unit again to acquire the required knowledge.

2.6   Glossary

Green library: this is one that is established with ensuring that it does not add to the environmental challenges.

2.7   References/Further Readings

New World Encyclopedia https://www.newworldencyclopedia.org/entry/Green_library

The Greening of America's Libraries: LEEDing the Way

2.8   Possible Answers to Self-Assessment Exercises (SAEs)

> **Self-Assessment Exercise 1:   This will take you 5 minutes to answer.**
>
> 1. Define a green library?
> 2. Write on the importance of a green library
> 3. Highlight some challenges that may occur in a green library

ANSWERS to SAE1:

1.   Define a green library?

A green library is a library that is built to reduce environmental hazards

2.   Write on the importance of a green library

1. Reduces the effect of the sun

2. Reduction in the use of water and energy

3. Maintains indoor air quality

4. Helps human health

3. Highlight some challenges that may occur in a green library

1.   Image

2.   Preservation of print materials

3.   Technology