

Section 7

Functional Spaces

7.1 - RATIONALE

This section strives to provide a comprehensive list of functional spaces found in archival facilities. Some facilities will include all or a significant number of these spaces while others may combine spaces to serve multiple functions. For example, a collections processing space could also function as an exhibit preparation area. A multi-use space might also include reproduction equipment for staff to make copies for researchers or engage in collection digitization. Care should be taken to ensure that spaces with multiple functions do not compromise collection safety.

Archival facilities should be designed and operated to balance collection preservation needs with the needs for access and use. This begins from the moment collection materials arrive and continues as staff process the materials, perform conservation treatments, and open the materials for public access through research or exhibitions. Since collection materials reside in a number of different spaces throughout this process, it is important that all archival functional spaces are thoughtfully designed to ensure their safety.

When designing spaces in archival facilities, it is important to consider the needs of all users. The Society of American Archivists outlines accessibility criteria for facilities, programs, and communications in its *Guidelines for Accessible Archives for People with Disabilities*. “These *Guidelines* provide basic and extensive recommendations to help archivists provide resources, services, and spaces that are accessible and inclusive.” While specific design criteria addressing accessibility are included in these facility guidelines, facility planners are urged to consult SAA’s accessibility guidelines, the American with Disabilities Act (ADA), and other external standards for more detailed information.

7.2 - PUBLIC SPACES

Public spaces are those areas of a facility most accessible to members of the general public such as lobbies, entryways, washrooms, meeting rooms, and classrooms. The design of public spaces should be welcoming and accessible. These areas should be well lit and feature clear signage to direct and orient visitors to the facility.

7.2.1 - Lobby

The Lobby is the primary entrance for all visitors and may also serve as the primary entrance for staff. It may contain a reception desk, a security screening area, seating for visitors, and exhibition spaces. The Lobby may be the noisiest space; this should be taken into consideration when planning for adjacent spaces.

7.2.1.1- Size

- Sized to accommodate the largest group of people that can be safely managed and accommodated by the facility and staff.
 - Lobby size will be influenced by whether the facility hosts school groups, is used for exhibits, receptions, registration, or if it is a waiting area for visitors to enter an exhibit or view the next showing of an orientation film.
 - Lobby size may be affected by required security systems and procedures.

7.2.1.2- Location/Adjacencies

- Research space registration and orientation.
- Public lockers.
- Public restrooms.
- Meeting or training spaces.
- Auditorium.
- Exhibit gallery(s).
- Public lounges, vending area, and/or café.

7.2.1.3 - Design Criteria

- Optimal entrance is through two sets of doors separated by a vestibule to provide energy savings and to serve as an airlock to keep unconditioned air from entering the building.
 - Electronic automatic door openings.
 - Door sweeps to prevent pests entering from the exterior.
- Provide mats in the vestibule to reduce the amount of snow, mud, and dirt brought into the building. Boot cleaners in the vestibule can also help to reduce dirt entering the facility.

- Insulate from adjacent quiet spaces, such as research spaces.
- Provide seating for visitors with access to electrical outlets for charging personal electronics.
- Consider security systems such as X-Ray machines or Scanners.
- Security or Reception Desk.
 - Good sight lines to all areas of Lobby.
 - Staffed by security personnel or receptionist.
 - May have security equipment such as camera monitors and panic button.
 - May have a registration book or sign in by computer/iPad.
 - Must be ADA compliant.
 - Minimally, a portion of the reception desk should be designed to allow patrons in wheelchairs to interact with staff at eye level.

7.2.2 - Researcher Lockers/Lounge

Depending on the size of the facility and operations, lockers and a lounge should be provided for researchers.

- To store personal materials that are not permitted in research or exhibition spaces.
 - If appropriate, a lounge provides a space outside secure research areas for patrons to take breaks, eat lunch, conduct conversations, and organize their personal materials.

7.2.2.1 - Size

- Sized for the average number of researchers/visitors expected per day.

7.2.2.2 - Location/Adjacencies

- Adjacent to the lobby and/or research spaces.
- Locate outside of secure research spaces.
- Locate appropriate distance from collections storage and use areas.
 - Visitors often store food in the lockers.
- Close to the visitor eating area (if one is provided).

7.2.2.3 - Design Criteria

- Lockers should be a variety of sizes to accommodate bulky items like backpacks and laptop bags.
- Secure and lockable.
- Wi-Fi.
- Access to electrical outlets for charging personal electronics.
- Seating or benches.
- Flat counter or tables.

- Waste and recycling receptacles.
- Bulletin boards or digital monitors for promotion and advertising of the collection or related programming.
- Coat rack.
- Umbrella stand.
- If hosting large groups, consider offering a larger coat closet adjacent to the lockers with open spaces for book bags and hooks for jackets.
 - Can also serve as a coat room for events.
 - Can include a combination lock to secure for groups.

7.2.3 - Public Restrooms

- Restrooms with clear wayfinding should be accessible from the lobby and close to the public lockers and eating spaces.
- Provide restrooms convenient to researcher spaces.
 - Located so that researchers must leave the secure research spaces to access restrooms.
 - Located outside secure research areas to prohibit researchers from removing collections.
- Do not locate restrooms above or adjacent to collections storage or use areas.
 - Determine mitigation measures for potential water and pest risks if restrooms are located over or next to collection storage or use areas.

7.2.4 - Visitor Service Center

This area may serve a variety of functions:

- Register and orient visitors.
- Display informational pamphlets and brochures.
- Serve as a retail point of service for book sales or other gift shop items.

7.2.4.1 - Location/Adjacencies

- Can be located within the lobby or adjacent to the lobby.
- Can be self-serve or staffed by the security or reception desk.
- Some archives may divide this space into a welcome desk that is located in the lobby and a visitor service area or researcher registration area adjacent to the lobby or research spaces.

7.2.5 - Gift Shop

Gift shops, if one is included, sell books and items related to the collections.

7.2.5.1 - Size

- Ranges in size from a lobby kiosk to a separate space or building.

7.2.5.2 - Location/Adjacencies

- Generally located near the lobby, exhibit spaces, or other public areas.
 - Can also be part of a reception desk or visitor service center.
- For larger gift shops, provide easy access to the loading dock for restocking.

7.2.5.3 - Design Criteria

- Secure space, even if other parts of the lobby or building area are open.
- Separate storage area adjacent to the gift shop for the storage of inventory.
- Flexible display racks.
- Adjustable lighting.
- Multiple and accessible electrical outlets.
- Cash register and computer equipment.
- Manager's office.
- Wi-Fi.

7.2.6 - Classrooms and Meeting Spaces

Publicly accessible classrooms and meeting spaces may be included in an archival facility. These spaces promote the use of the facility by groups and the study of archival materials by classes. They also host programming related to the institution's mission such as workshops, community scanning days, guest lectures, and more.

7.2.6.1 - Size

These spaces can range from small meeting spaces for 2-4 people up to large auditoriums that can seat hundreds of people. Spaces should be scaled to accommodate the expected use and occupancy needs. Examples include: meeting rooms, conference rooms, classrooms, training spaces, and large multi-use spaces.

7.2.6.2 - Location/Adjacencies

- Locate adjacent to the lobby and public restrooms, particularly if they require after-hours access.
- Locate appropriate distance from collections storage and use areas due to noise levels.
- Scale teaching spaces to accommodate active learning and classroom collaboration.
- Moveable partitions for larger meeting spaces offer flexibility and serve as a multipurpose space.
- Provide space for special equipment and equipment storage.
- Prohibit use of collections if food is permitted.

7.2.6.1 - Design Criteria

- Audio-visual capabilities.
- Dimmable lighting.
- Acoustic sound dampening panels and/or dividing walls.
- Wi-Fi.
- Access to electrical outlets for charging personal electronics.
- Flexible and accessible modular furniture.
 - Stacking chairs and foldable tables.
- Storage of tables and chairs.
- White board(s).
- Easels and/or art rails.
- Coat storage.

7.2.7 - Food Service Area

Food service can consist of vending machines, a catering kitchen, a self-service cafeteria, or a small restaurant/café.

7.2.7.1 - Location/Adjacencies

- Locate near the lobby and public areas.
- Accessible to the loading dock.
- Locate appropriate distance from collections storage, exhibits, and other collection use spaces.
- Consider outdoor eating areas for staff and visitors.

7.2.7.2 - Design Criteria

- Under slightly negative air pressure to the rest of the building.
- Vent food service areas directly to the outside rather than into the general building return air system.
 - Do not locate food service vents near air intakes for the rest of the building.
- Design food storage to prevent pest or rodent infestation.
 - Conduct regular inspections and pest control activities.
 - Consider door sweeps for all entryways leading to food service areas
- Provide secure lids for all trash cans and recycle containers.

7.3 - EXHIBITION AREAS

Exhibit areas in archival facilities are important for displaying and promoting the collections. Exhibitions generate public interest and provide educational opportunities. The facility itself can become part of the ‘exhibit’ if windows are provided into key areas that are not normally accessible to the public, such as laboratories, digitization spaces, and collections storage spaces.

7.3.1 - Size

Exhibit spaces can range from a small display in the lobby to distinct exhibit galleries.

7.3.2 - Location/Adjacencies

- Locate near the lobby and public areas.

7.3.3 - Design Criteria

- Security.
- Archival finishes if exhibiting original materials.
- Museum quality exhibit cases.
- No windows, or if they are included, should feature UV filtered glazing.
- LED lighting.
- Dimmable lighting.
- Display walls construction must allow for easy installation of mounting hardware and post-exhibition repair.
- Integrated sound system.
- Acoustical treatments.
- Electrical outlets located in-floor, in-ceiling and on walls to accommodate exhibit features such as display cases, audio visuals screens, interactive components, and temporary equipment.
- For a self-contained exhibit gallery:
 - Similar environmental conditions to collection processing and lab(s).
 - Ceiling height of at least 12 feet.
 - Ceiling and wall load capacities to support exhibit materials and cases.
- Traveling exhibit and loan requirements generally require:
 - 68-70°F/45-55% RH
 - To host loans of original materials consider including:
 - Fire protection.
 - Security.
 - No direct sunlight.
 - No smoking, eating, or drinking in exhibition areas.

7.4 - RESEARCH SPACES

Research spaces, also known as Reading Rooms, are secure areas used by the public to review archival materials. They are designed so that collections are always protected. Each archival facility will have its own unique requirements depending on its collections, the space available for research activities, and institution-specific security and researcher policies.

While many archives will provide a single room for researchers to consult a variety of archival formats, some archives may provide separate spaces for specific media types. Some archives will function with one research space for textual holdings and a second for non-textual holdings. Others will have separate research spaces for each format—textual, microfilm, audio-visual, digital, and oversized materials—as well as spaces for collaborative research and holding and copying materials.

Each repository will have policies and procedures outlining the use of the collections and some of them will be directly related to the layout and function of the research spaces. Refer to Section 5 for specific security requirements for research spaces; Section 2 for lighting requirements.

7.4.1 - General Design Criteria

- Accessible from the public entrance and/or lobby of the archival facility.
 - Located outside/distant from secure collections storage spaces and other collections holding areas.
- Security systems and procedures.
- Accessible through a single secure door.
 - Minimum of one automatic door for accessibility.
- Located close to staff offices.
- Designed to make the transport of collections to the research spaces secure and easy for staff.
- Located in a quiet area of the facility.
 - Designed with soundproofing.
- Wi-Fi.
- Well lit.
 - UV filtered and/or ability to shade direct sunlight.
 - LED lighting.

7.4.2 - Researcher Registration/Orientation, Consultation, and Reference

Some archives provide a specific area for researchers to register, be briefed on the institution's rules and regulations, and consult with staff on individual research requirements. Some archival facilities split these operations and locate researcher registration and orientation adjacent to the lobby and locate consultation activities closer to the researcher spaces and finding aids. Some

archival facilities locate computers within or adjacent to this area to review finding aids and digital collections, and order specific materials. While less common, some archives dedicate a separate space specifically for the consultation of finding aids and other reference materials.

7.4.2.1 - Design Criteria

- Adjacent to research spaces.
- Adjacent to finding aids or co-located with finding aids.
- Close to researcher lockers and coat storage.
- Sound insulation to prevent conversations from disrupting researchers.
- If appropriate, windows into research areas to allow staff to visually monitor researchers.
- Wi-Fi.
- Public computer terminals.
- Shelving for reference books.
- Desks or service windows for registration or that provide reference services to patrons must be ADA compliant. At least one desk should be designed to allow patrons in wheelchairs to interact with staff at eye level.

7.4.3 - Textual Research Space

Textual research can be part of one large research room or a dedicated room serving only textual collections. While security and collections preservation are a priority, the space should be functional for researchers and inviting for visitors.

7.4.3.1 - Size

- Sized for the appropriate number of researchers that staff can accommodate.
- Sized for the circulation of staff and carts holding collection materials.
- Designed with few visual barriers so that staff can observe researchers.

7.4.3.2 - Location/Adjacencies

- Adjacent to the consultation and reference areas.
- Close to staff offices.
- May include a staff-only door for the delivery of records.

7.4.3.3 - Design Criteria

- Central Desk: staff operated desk centrally located so that staff have a clear sight line to all areas where researchers are using archival materials.
 - Desk may also serve as the checkpoint for collections circulation.
 - Space for a computer, supplies, security monitor, and other operational equipment.
 - May have space for supervised copying and scanning functions.

- May have a silent alarm button linking it to building security.
- ADA compliant.
 - Minimally, a portion of the central desk should be designed to allow patrons in wheelchairs to interact with staff at eye level.
- Automatic door openers for the staff service doors.
 - If oversized materials are consulted in the textual research space, provide double doors.
- Public access copying: some archives provide public access reproduction stations in the reading space.
 - Can include photocopiers, scanners, book cradle scanner, and photographic copy stands.
 - Locate within sight of the central desk, so staff can supervise the reproduction of archival collections.
 - Some repositories allow researchers to use their own scanners and cameras at the researcher tables.

7.4.3.4 - Research Tables/Chairs

- Flexible design to reconfigure rooms as needed and to accommodate oversized items.
- ADA compliant.
- Chairs
 - Provide chairs that are ergonomically designed, height adjustable, and mobile.
 - Provide a variety of chair sizes to accommodate different user sizes.
- Tables
 - Sized to accommodate a cart beside each researcher seat.
 - Average workspace of 75 square feet [7000 square centimeters] per researcher with one cart.
 - Measure 30 inches [76 centimeters] in height.
 - Typically, the top of a one-person table measures a minimum of 36 x 42 inches [91 x 107 centimeters]
 - Table for multiple researchers measures a minimum of 48 x 72 inches [1.2 x 1.8 meters].
 - Minimum one table should be height adjustable.
 - Provide Electrical outlets for charging personal devices.
 - May provide task lighting.
 - LED or UV filtration.
 - Align tables so that researchers can be monitored from the reference desk.

7.4.4 - Non-Textual Research Spaces

Some institutions include dedicated research spaces for items requiring special equipment such as audio, video, microfilm, and born-digital or digitized collections.

Digital research spaces are evolving areas for many archival facilities. Spaces should be designed to accommodate a growing volume of digital content. These spaces may include secure viewing stations for born-digital collections, digital microfilm readers, and digital media workstations. Some repositories will provide self-service copies of high-use reference film and fiche in cabinets located in or adjacent to the research space.

Many microfilm research spaces are being reduced in size or combined with digital and audio-visual research spaces as microfilm collections become available on-line or are digitized. Digital workstations are replacing film and fiche readers in many institutions. Each repository must decide on the balance of equipment necessary to serve its collections and researchers.

7.4.4.1 - Design Criteria

- Sized for anticipated number of researchers and types of equipment that staff can accommodate.
- Secure doors.
- Directly visible to staff or visible by camera.
- Dimmable lighting.
- Soundproofing, so noise does not filter into other research areas.
- Appropriate ventilation for equipment.
- Finishes that minimize dust to protect collections and equipment.

7.4.5 - Collections Holding Space

Typically located adjacent to the research spaces, the holding area is a secure space for staff to temporarily store collections ordered in advance or that need to be stored overnight. This space also may house a staff-only copy/scanning area.

7.4.5.1 - Design Criteria

- Environmental conditions the same as labs and processing areas, when possible.
- Secure doors from within the research spaces and from outside corridors.
 - Same security as collections storage.
- At least one set of double doors, six feet wide [1.8 meters].
 - Automatic double doors are desirable.
- Materials and finishes to archival storage standards.
- Space to store collection materials on shelving, carts, and any other transport equipment used to move collections to the research spaces.
- Designated space for collections needing re-shelving.
- May include copy/scanning equipment and accompanying workspace.

7.5 - STAFF SPACES

Staff spaces should be comparable in size and quality to standard office buildings. In certain situations, such as in government institutions, the size of staff areas are determined by written policies. All staff spaces should be separated from public spaces and should not allow public access without staff supervision.

7.5.1 - Staff Offices

In some repositories, some staff work solely in processing areas or labs and do not require offices or workstations. An important policy decision that impacts the design and location of staff offices is whether collections are allowed in office areas.

7.5.1.1 - Design Criteria

- Private offices and workstations for staff.
 - May include shared workstations for visiting staff, interns, and volunteers.
- Areas for office printing, faxing, copying, and scanning.
- Office supplies and file storage included.
- Security considerations.
- Wi-Fi.
- May include a conference room.
 - May include audio-video capabilities.

7.5.2 - Staff Lockers

Some repositories require staff to place personal items in lockers.

- Locate near the staff area and secured from other portions of the building.
- Consider providing lockers and showers for staff involved in dirty work, and for those who exercise or walk and bike to work.

7.5.3 - Staff Restrooms

In smaller archives, there may be a single set of restrooms serving both staff and the public. If separate, locate the staff restrooms in reasonable proximity to staff workspaces.

- Like public restrooms, do not locate over or near collections storage and use areas.

7.5.3.1 - Design Criteria

- No windows; glass windows require blinds or shades.
- Lockable door.
- May include comfortable chairs and table(s).
- May include a shower.
- Wi-Fi.

7.5.4 - Staff Break Room/Lounge

Even in archival facilities with cafeterias, staff break rooms are often provided so that staff have a place to eat away from the public and their workstations. Staff working in areas with collections usually are not permitted to eat at their workstations. This space can double as a staff meeting space.

7.5.4.1 - Size

- Sized for the number of employees who will be seated in the space during peak times, such as lunch time.

7.5.4.2 - Location/Adjacencies

- Because of potential fire and pest hazards, locate staff lounges in a separate area, at a distance from collections storage, processing rooms, labs, and other spaces where collections are stored or used.
- Locate near staff offices and easy distance from processing and lab(s).
- Desirable to have windows or be near windows and have access to outdoor seating.

7.5.4.3 - Design Criteria

- Maintain at slightly negative pressure.
 - If possible, vent directly to the outside of the building.
- Provide windows or locate near outside windows.
- Wi-Fi.

7.5.4.4 - Furniture/Equipment

- Sink, refrigerator, microwave, and coffee maker.
- Tables and chairs.
- Counters and storage.
- Trash/recycle bins.
- Bulletin board.

7.5.5 - Staff Quiet Room(s)

Quiet or focus rooms are increasingly required in newly designed government and corporate offices. It is a multipurpose space used by employees who do not have private offices for phone calls, private conversations, reading, rest, prayer, and special needs.

7.5.6 - Staff Library

Some repositories have a staff library with shelving for books and journals for staff use. It can also include at least one table and several chairs. The staff library can double as a group project space or a meeting space. It can be a separate space or located within the office or processing spaces.

7.6 - COLLECTIONS STORAGE

This is a general overview of collections storage. Other sections detail the standards and guidelines that must be considered for collections storage, such as the Environments Section.

- The most important preservation measure for archival materials is to provide appropriate archival storage conditions.
 - Consider construction, layout, environmental conditions, fire protection, security, lighting, materials and finishes, and storage equipment.
- Ideally, collections should be stored according to their material type and the environmental conditions recommended for each kind of material. However, not all institutions have the capability to separate their collections into different environmental zones.
 - Provide the best conditions for the range of materials in collections storage rooms.
 - Strive for cooler and dry conditions for mixed materials, as much as practical within their design parameters.
 - In general, temperatures should not rise above 70°F and humidity levels should not fall below 30% RH or rise above 55% RH.
- Control access to collections storage areas and restrict them to the storage of collections.
 - Only use collections storage for the storage of archival materials.
 - Locate staff work areas outside the storage rooms.
 - Design collection storage areas to accommodate collections of varying sizes and material types.
 - Store collections on standard sized and oversized archival shelving, in flat files, museum quality cabinets, art racks, and other specialty equipment.

7.6.1 - Size

- Sized to accommodate the storage of the collections within specific environmental conditions.
- Sized to provide maximum storage space.
- As much as possible, free from obstructions.
- NFPA 232 dictates that the “maximum storage volume of archival materials or records shall not exceed 125,000 cubic feet (3540 m³) in a single compartment.

7.6.2 - Location/Adjacencies

- Sited for maximum energy efficiency and sustainability.
- Convenient to the collections processing spaces and labs.
- Accessible to the loading dock.
- Accessible to elevators, if multi-story facility.

7.6.3 - Design Criteria

- Siting and construction standards, including:
 - Impervious to water or designed to mitigate water risks.
 - Do not locate below grade without specific water and moisture mitigation measures.
 - Should not be located under or adjacent to mechanical equipment, bathrooms, or other rooms with water services without specific water and moisture mitigation measures.
 - Served from separate HVAC systems.
 - Floor load designed for collections and shelving.
 - In new construction, positioning of columns should allow for efficient shelving layouts.
- Environmental conditions – temperature, relative humidity, and air filtration requirements appropriate to the collections.
- Fire protection
- Security
- At least one set of double doors, six feet wide [1.8 meters].
 - Oversized single door should be used with extinguishing gasses (clean agent) fire suppression.
- Materials and finishes to archival storage standards.
- LED lighting or UV filtration.
- No windows
 - If windows, complete black-out covers.
 - If black-out covers are inappropriate (e.g., in some historic buildings), use UV filters and light-reducing shades
 - Shelving and other appropriate equipment for collections storage
- Open space for book trucks and carts.
- Wi-Fi.

7.7 - PROCESSING SPACE(S)

Processing spaces provide secure workspaces separate from collection storage areas and offices. Staff can work individually or in groups to examine, sort, arrange, describe, and rehouse archival materials. These rooms should be flexible spaces that can be rearranged depending on project size and complexity, and that are easily adapted for a variety of processing needs. Moveable and adjustable height tables, many widely spaced electrical outlets, and room for book trucks and the occasional dolly offer staff the ability to rearrange the processing area as needed. Shelving is needed for collections that are stored in processing rooms for extended periods of time and may also store archival supplies.

Since archival materials may be stored in processing spaces for extended periods of time, careful attention should be paid to the environmental conditions, fire protection, security, and finishes in these spaces. These should match or closely approximate the conditions in collections storage. However, a storage temperature set point may be too low for human comfort in these spaces.

7.7.1 - Size

- Sized to accommodate the maximum number of employees/volunteers who may process collections at one time.
- Depending on operations, some processing areas will include the permanent workstations of staff. Other facilities may provide shared processing area(s) and employees may have their permanent workstations in the office area.

7.7.2 - Location/Adjacencies

- Convenient to the collections storage spaces and accommodate cross-department workflows.
- Accessible to copying and scanning areas.

7.7.3 - Design Criteria

- Design conditions the same as labs and processing areas.
- Secure doors.
- At least one set of double doors, six feet wide [1.8 meters].
 - Automatic double doors are desirable.
- Materials and finishes to archival storage standards.
- Wi-Fi.
- Windows with UV filters and light-reducing shades.
- LED lighting or UV filtration.
- Moveable and adjustable height tables.
- Shelving for collections and supplies.

- Open space for book trucks and carts.
- Trash and recycle bins.

In addition, processing spaces may include:

- Environmental data loggers.
- Computer workstations.
- Equipment for special-format materials, such as audio-visual materials.
- Copiers and Scanners.
- File cabinets.

7.8 - REFORMATTING/DIGITAL LAB

Also known as an Imaging Lab, it provides space to reproduce and reformat collections for preservation and researcher access. It is used for scanning collections and for the migration of born-digital materials. Digital imaging has largely supplanted micrographics for duplication of archival collections. However, micrographics remains the archival standard for the preparation of preservation masters of archival collections. Some repositories may want spaces for both operations.

Since archival materials may be stored in the reformatting lab for extended periods of time, careful attention should be paid to the environmental conditions, fire protection, security, and finishes in these spaces. These should match or closely approximate conditions in collection storage spaces, although the storage temperature set point may be too low for human comfort in these spaces.

7.8.1 - Location/Adjacencies

- Convenient to the collections storage spaces and accommodate cross-department workflows.

7.8.2 - Design Criteria

- Design conditions the same as other labs and processing areas.
- Secure doors.
- At least one set of double doors, six feet wide [1.8 meters].
 - Automatic double doors are desirable.
- Materials and finishes to archival storage standards.
- Paint a standard neutral gray color that is formatted to have a flat spectral response without any color bias, per ISO 3664:2009.¹
- No windows.
 - If windows, consider complete black-out covers.
 - Second alternative is UV filtered and/or ability to shade direct sunlight.
- LED lighting or UV filtration.
- Data and electrical components compatible with the reformatting equipment.
- Wi-Fi.
- Dimmable lighting.
- Soundproofing for audio work.
- Anti-static flooring.

¹ ISO 3664:2009 outlines the viewing conditions necessary for reflective and transmissive media, including prints and digital images. These are the optimal conditions to ensure that digitized images and their subsequent prints display color and image integrity as close to the original item as possible.

- Flexible and moveable furniture for preparing the documents for reformatting.
- Tables and/or counters for a variety of scanning, audio and video transfer equipment that accommodates all sizes of documents and format types, including microfilm, slides, prints, negatives, audio and video recordings, and books.
- Space for handling large groups of recordings, documents, or individual oversized documents.
- Moveable partitions or screens for light control.
- Furniture, supports, or braces that reduce vibrations from adjacent areas.
- Workstations for scanners, cameras, copy stands, and digital forensics equipment.
- Room for carts transporting and holding collections.
- Shelving for the short-term storage of collections and supplies.
- May include environmental data loggers.

7.9 - CONSERVATION LABORATORY

Archival facilities often include a laboratory space(s) for conservation and preservation work on paper-based, special media, and three-dimensional materials. The facility should provide appropriate lab space, whether it will be used for complex treatments or to produce simple enclosures. The design of conservation laboratories is complex and individualized, and any design must be in consultation with the archivists and conservators.

Since archival materials may be stored in the lab for extended periods of time, careful attention should be paid to the environmental conditions, fire protection, security, and finishes in these spaces. These should match or closely approximate conditions in the collections storage spaces, although the storage temperature set point may be too low for human comfort in these spaces.

7.9.1 - Size

The size of the laboratory will depend on the size of the holdings and the type of work done by the institution. In general, laboratory space should be as open as possible and unencumbered by posts and pillars. Generous circulation space will be needed for moving large objects, such as maps and special treatment carts.

7.9.2 - Location/Adjacencies

- Do not locate above collection storage, processing spaces, or exhibit areas without specific water and moisture mitigation measures.

7.9.3 - Design Criteria

- Separate air handling systems.
- Environmental conditions the same as other labs and processing areas.
- Floor loads that can accommodate heavy laboratory equipment.
- Secure doors.
- At least one set of double doors, six feet wide [1.8 meters].
 - Automatic double doors are desirable.
- Materials and finishes to archival storage standards.
- Waterproof and skid resistant floors.
- Washable walls in wet areas.
- Floor drains with catch drains and grilles in case of flooding.
- Secure storage
 - Adequate storage space for large and bulky conservation materials; storage may take up as much as one-third to one-half the size of the lab itself.
 - Secure chemical storage cabinets (may need special ventilation).
- Separate spaces for wet and dry work.
- Filtered and/or deionized water.

- Under-sink water heater to provide 150°F [65°C] water.
- Eyewash(s) station.
- 220-volt power for special equipment.
- Wi-Fi
- Windows
 - Natural sunlight for some treatment work.
 - UV filtered and/or ability to shade direct sunlight.
- LED lighting or UV filtration.
- Room for carts transporting and holding collections.
- One or more administrative offices or spaces immediately adjacent to the lab so that staff can keep administrative work separate from laboratory work

In addition, a conservation lab may require:

- Environmental data loggers.
- A safety shower and drain for emergency use.
- Ceiling-mounted outlets on flexible cables.
- Observation window for public viewing.

7.9.4 - Furniture

Furniture should be specifically designed for work in conservation laboratories.

- Avoid fixed furniture except along the walls.
- Wall cabinets should have under-counter lighting.
- Moveable tables, with adjustable-heights and heavy-duty locking wheels.
- Vented, locked cabinets must be provided for chemical storage.
 - Provide two cabinets to separately store incompatible chemicals.

7.9.5 - Equipment

The conservation laboratory may contain some or all of the following equipment and furniture (this list is not comprehensive):

- Fume hood with hood venting system.
- Elephant trunks (flexible snorkels for capturing light particles and vapors).
- Humidification chamber.
- Drying rack/s.
- Book press.
- A variety of sizes of chemical-resistant sinks.
- Large water trays/tables.
- Wall and mobile units for rolled conservation supplies.
- Photographic documentation equipment.
- Microscope.

- Paper cutter.
- Ultrasonic welder.
- Suction (vacuum) table.
- Guillotine.
- Drill press.
- Leaf caster.
- Board shears.
- Mat cutters.
- Phase box maker and/or automated box making equipment.
- Mobile task lighting.
- Environmental monitoring equipment.
- Laboratory casework with sink(s).
- Computer stations(s).
- Movable tables.
- Carts and cart storage.
- Storage for supplies, tools, and chemicals.

7.10 - EXHIBIT PREPARATION

Depending on exhibit planning and fabrication, an archival facility may want to provide a distinct area for exhibit preparation and staging. If it is necessary to store traveling exhibits and large items, storage may be located next to the exhibit preparation area and be separated by a large rolling door or moveable partition. Alternatively, if dedicated space is not available, exhibit preparation work can be done in a processing space or conservation laboratory.

7.10.1 - Size

Exhibit storage generally requires the same amount of space to store packing crates for traveling exhibits as the size of the exhibit.

7.10.2 - Location/Adjacencies

- Locate near or with easy access to the freight elevator.
- Locate Exhibit preparation/staging and storage spaces adjacent to each other.

7.10.3 - Design Criteria

- Design conditions the same as labs and processing areas.
- Secure doors.
- At least one set of double doors, six feet wide [1.8 meters].
 - Automatic double doors are desirable.
- Materials and finishes to archival storage standards.
- Windows: UV filtered and/or ability to shade direct sunlight.
- LED lighting or UV filtration.
- Large, flexible space that includes space for planning, layout work, mat cutting, exhibits construction, graphics presentation, and storage.
- Wi-Fi
- Moveable tables, with adjustable-heights and heavy-duty locking wheels.
- Shelving for supplies and tools.
- Adjacent to exhibit staging/storage area and connected with either an overhead door or demountable partition.
- Clear path to accommodate objects up to 10'-0" x 10'-0" x 10'-0".
- Room for carts transporting and holding collections.

7.11 - SUPPLY STORAGE

Provide adequate space for the secure storage of archival supplies and general operational equipment and supplies. The amount of space required for storage of equipment and supplies are often grossly underestimated during design.

7.11.1 - Archival Supplies

Provide a secure archival supply storage space(s) for storing boxes, containers, carts, and processing supplies.

- Locate near the receiving, isolation, accessioning and/or processing areas.
- Open shelving - large enough to store acid-free folders and supplies
- Floor space to store archives boxes and supplies, sometimes on pallets.
- Double doors.
 - Automatic double doors are desirable.

7.11.2 - Disaster Preparedness Supplies

Store backup supplies on-site so that staff can respond quickly during an emergency to limit damage. Storage can be in a dedicated cabinet, closet or room, or in a central storage area. Depending on location, critical supplies should be stored in waterproof corrugated polypropylene boxes.

Emergency supplies include:

- Plastic sheeting, tarps, and bags.
- Plastic milk crates (to temporarily store and move wet collections).
- Foam padding.
- Absorbent pads and paper.
- Paper towels.
- Trash bags.
- Mops, buckets, large brooms, sponges.
- Waterproof gloves.
- Masks and goggles.
- First Aid Kits.
- Flashlights and batteries.
- Clipboard, pencils, scissors.
- Protective aprons and hard hats.
- Also consider:
 - Fan(s)
 - Vacuum(s)
 - Dehumidifier(s)

7.11.3 - Office Supplies

- Store near staff areas in closets, cabinets, on shelving, or in centralized copy/fax areas.
- Additional stock can be in a central storage area.

7.11.4 - General Building Supplies

Equipment and added stock can be stored in a warehouse or supply room, often located near the loading dock. Materials to be stored include:

- Office supplies,
- Office equipment (spare PCs and printers, etc.).
- Furniture.
- Added building stock like HVAC filters, floor coverings, etc.
- Laboratory supplies, including chemicals.
- Staff party/holiday supplies and decorations (a proper storage place will discourage the storage of these items in collections storage spaces).

7.11.5 - Hazardous Materials

- Securely store paint, fuel, and landscaping equipment outside the building.

7.12 LOADING DOCK

The dock(s) provides a secure environment for incoming and outgoing archival collections into the building and acts as a barrier against weather conditions. It also serves as a transition space for incoming mail, packages, supplies and equipment, food and related deliveries. Archival loading docks get heavy use and should be designed so that the collections are adequately protected.

Archival collections moving through the loading dock must be protected from:

- Theft
- Unauthorized access
- Inclement weather
- Pests
- Accidental disposal.

7.12.1 - Size

- Design the loading dock to receive the largest amount of collections that can be routinely accommodated by the staff.
- Size a dock with a receiving space large enough for collections to be inspected and verified against transmittal lists.

7.12.2 - Location/Adjacencies

- Located on the exterior of the building.
- Located on the same level as the collection storage and/or close to freight or large elevators that service the collections storage spaces.
- Adjacent to receiving, inspection, and isolation spaces.
- Located so that noise does not migrate into public and staff work spaces.

7.12.3 - Design Criteria

Located on the exterior of the building, loading docks should be designed with:

- A concrete platform with one or more bays for receiving various truck sizes.
 - Isolate exterior and interior platforms from the rest of the archival facility to prevent unauthorized entry, pest and rodent migration, and unconditioned and polluted air from reaching archival areas.
- Covers or canopies over the loading dock platform that prevent fumes and fuel from entering the archives building and that will protect collections from inclement weather during offloading.
 - Covers should extend at least four feet [1.2 meters] beyond the edge of the platform;
 - Covers should be a minimum of 14 feet [4.3 meters] high (not including space

for overhead lighting, ductwork, etc.).

- Sloped parking ramp leading to the dock and drained sufficiently to prevent storm water from collecting near, or migrating into, the building.
- Dock leveler to accommodate different height trucks.
- Dock sealer to prevent energy loss.
- Positive air pressure relative to the outside.
- Negative pressure relative to rest of building.
- Separate air-handling system, vented directly to the outside, so that debris and pollutants cannot affect archival areas.
 - Enclosed docks require a separate HVAC system.
- Conditioned exterior, especially against high heat and humidity, if collections are to remain on the loading dock for more than one day.
- Toilet facilities so that drivers and visitors do not need to enter the building.
- Security systems.

Two Loading Docks: Ideally, archival facilities should contain two loading docks - a dock for archival collections and a separate service dock.

- Collections Dock: a covered, conditioned dock for archival materials.
- Service Dock: a covered dock for building support functions such as delivery of equipment, supplies, mail, food, and other “dirty items” that could contaminate archival materials.

One Loading Dock: Ideally plan for a 2-truck covered dock

- Provide clearly marked designated areas and pathways that separate collections from non-archival material deliveries.
 - Example: provide designated pathways to prevent food from passing through collections holding or exhibit spaces.

Enclosed dock:

- Enclosed docks are not as common but are used when climate control, collections protection, security, and overhead lift capabilities are required.
 - Allows the truck to park inside the building, so it must have a robust ventilation system, and must be kept under negative pressure in relation to adjacent collections spaces.
 - Requires more space and has higher construction costs.

7.12.4 - Doors

Loading dock doors that can roll-up and swing. Doors should include:

- Fire rated doors.
- Secure doors.

- Weather stripping.
- Brush sweeps to keep out insects, vermin, and mold.
- Polypropylene bird netting around exterior roll doors and loading dock areas to prevent birds and bats from entering the building.

If the loading dock is adjacent to sensitive spaces, such as collections storage and/or laboratories provide:

- Interlocking double or roll-up doors (in which one door can be raised only if the other is lowered).
 - Install at opposite ends of the dock to prevent unconditioned outside air from reaching conditioned spaces.

Interior dock doors:

- Should be a minimum of 36 inches [91 centimeters] wide.
- At least one door leading from the dock into the facility should be a double door, six feet wide [1.8 meters].
 - Automatic double doors are desirable.
 - Provide weather stripping.

7.13 - RECEIVING

Design a secure receiving or staging space that is adjacent to the loading dock for:

- Receiving collections.
- Inspecting incoming collections for security risks, pests, mold, and damage.
- Verifying transmittal forms.
- Unpacking or initial sorting of collections.
- Sized to temporarily store collections.

7.13.1 - Location/Adjacencies

- Adjacent to the loading dock.

7.13.2 - Design Criteria

- Secure doors
- Double doors wide enough for pallets, six feet wide [1.8 meters].
 - Automatic double doors are desirable.
 - Provide weather stripping.
- No windows.
- Waterproof, skid resistant, and washable floors.
- Washable walls.
- Floor drain.
- Fire and smoke protection. See Section 4.
- Separate air handling system from archival areas.
- Insulation to prevent migration of pests and mold.
- LED lighting or UV filtration.
- Wi-Fi.
- Battery charging area for electric forklifts. See Section 4 for fire protection information.

Furniture includes:

- Shelving for collections and supplies.
- Adjustable height moveable tables.
- Clearly marked trash cans and recycle bins.
- Computer station.

7.14 - QUARANTINE ROOM

Used to quarantine collections that need treatment before entering the building, the room isolates materials that are contaminated with mold spores, insects, or other vermin. Generally, contaminated collections are freeze-dried to de-infest them in a clean, safe manner.

7.14.1 - Location/Adjacencies

- Within or adjacent to receiving area.

7.14.2 - Design Criteria

With similar design criteria as the receiving area, this room must be separate from all other collection areas:

- Adjacent to the receiving area.
- Secure doors.
 - Same security as collections storage.
- Double doors, six feet wide [1.8 meters].
 - Automatic double doors are desirable.
- No windows.
- LED lighting or UV filtration.
- Waterproof, skid resistant, and washable floors.
- Washable walls.
- Sink.
- Floor drain.
- Safety shower.
- Eye wash.
- Fire protection. See Section 4.
- Separate air handling system from archival areas.
- Wi-Fi.

Furniture includes:

- Shelving.
- Adjustable height moveable tables.
- Trash and recycle bins.
- Biological safety cabinet.
- Freezer for treating contaminated collections.
- Computer station.

7.15 - SERVICE CORRIDORS

Provide an adequate width to accommodate pallet jacks and other moving equipment in corridors leading from the loading dock and those used for moving collections in the facility.

- Service corridors should be at least 6 to 8 feet [2.4 meters] wide, although 10 feet [3 meters] is recommended for primary corridors and 8 feet [2.4 meters] for secondary corridors.
- Any doors should be at least 6 feet wide with electrical assist openers
- Corridor ceilings should be a minimum of ten feet [3 meters] high.
- Corridor floors must be level and constructed of durable materials that can withstand the heavy traffic of pallet jacks and other moving equipment.
- Corridor walls should be durable and designed to withstand collisions with archives trucks and carts.

7.16 - ELEVATORS

Multi-story archival facilities should have at least one freight elevator and additional passenger/service elevator(s) for staff and visitors.

7.16.1 - Freight Elevator(s)

The freight elevator(s) should be located adjacent to the loading dock with easy access to collection storage spaces.

- Design with adequate capacity to transport the largest anticipated load of collections between floors.
- Locate near exhibit preparation and gallery spaces for delivery of oversized materials
- In larger facilities, consider two freight elevators with one dedicated for transport of collections.

7.16.2 - Service Elevator(s)

- Provide sufficient elevators for transporting collections to and from reading rooms, processing spaces and laboratories.

7.16.3 - Passenger Elevator(s)

- Provide sufficient elevators for transporting staff and visitors to upper level floors.

7.17 - MECHANICAL ROOM(S)

A building's main mechanical room, sometimes called the boiler room or the MEP room, houses a variety of critical mechanical and electrical equipment that service the facility. It provides facility maintenance staff with access to the equipment for operation and maintenance. It is a secure space that should only be accessed by building engineers or approved staff. See Section 2.

Most archival facilities will have only one main mechanical room, but larger facilities may have multiple MEP rooms. Some mechanical room equipment, such as cooling towers and condensers, may be located outside of the building. Smaller equipment rooms may be located on different floors in a multi-level building.

It includes equipment that supports the:

- Heating, ventilating and air conditioning system (HVAC).
- Electrical services (some buildings have separate electrical rooms).
- Plumbing and water supply systems.
- Fire sprinkler distribution piping and pumps.
- Telephone and internet connections.
- Elevator machinery.
- Back-up generators.

7.17.1 - Design Criteria

Mechanical spaces within archival facilities have both water and heat hazards that could affect collections and staff comfort in other parts of the building.

- Isolation from the remainder of the building
- Fire protection
- Fire rated walls and doors. See Section 4.
- Sealed concrete floors with loading sufficient to support the equipment.
- Water-proofing measures if the mechanical space is located over or beside any other part of the building.
- Secure doors.
 - Provide one door that exits to the exterior.
- Sufficient insulation so that adjacent spaces are not affected by mechanical space temperature, humidity and noise.
- Positive air pressure within the mechanical space designed so that mechanical space air does not impact other areas of the archival facility.
- Separate air-handling system, vented directly to the outside, so that debris and pollutants cannot affect archival areas.
- Adjacent storage for hand-held power tools and mechanical room supplies.

- Clear circulation aisles and adequate access to all equipment.
- Locate large central equipment to facilitate easy replacement.

7.17.2 - Size

Design mechanical spaces to house existing mechanical equipment with some room for future equipment.

- Design for future flexibility for changes in equipment types and sizes.

7.17.3 - Location/Adjacencies

- Do not locate above or adjacent to collection storage, processing spaces, or exhibit areas without specific water and moisture mitigation measures.
- Locate with outside or loading dock access so that large equipment can be removed or installed as part of normal maintenance.
- Locate so that noise does not migrate into public and staff work spaces.

7.17.4 - Doors

- Fire rated doors.
- Security.
- Brush sweeps to prevent entry of pests.
- Exterior doors
 - One door should be a roll up door to the exterior or loading dock area.
 - Weather stripping.
 - Brush sweeps.
 - Polypropylene bird netting to prevent birds and bats from entering the building.
- Interior doors – at least one door should be:
 - Double door - wide enough, six feet wide [1.8 meters].
 - Automatic double doors are desirable.

7.18 - TELECOMMUNICATIONS

Telecommunications technology is rapidly changing and it is best to consult with information technology (IT) experts to determine the most appropriate systems and network, hardware and software specifications for an archival facility and its operations. The telecommunications system should provide:

- Network wireless access (Wi-Fi) for the staff and visitors via wireless access point (WAP).
- Cellular voice coverage for the entire facility.
- If needed, staff workstations should be equipped with network capabilities to access files on shared drives with related institutions. Networking staff computers will permit staff to work on projects and facilitate the availability of electronic and digitized collections in multiple locations.

7.18.1 - Server Room

Depending on operations, an archival facility may have a dedicated computer space for file servers, routers, and other equipment supporting the computer network with an uninterruptable power supply.

7.18.1.1 - Design Criteria

- Main Distribution Frame.
 - Depending on building size - one or more Intermediate Distribution Frames.
- Raised access flooring with anti-static floor covering.
- Power outlets with flexible tails.
- Computer-grade circuits.
- A plan for wireless networks to be incorporated to provide maximum flexibility.
- Temperature no greater than 70°F [21°C].
- No windows.
- Fire Protection.