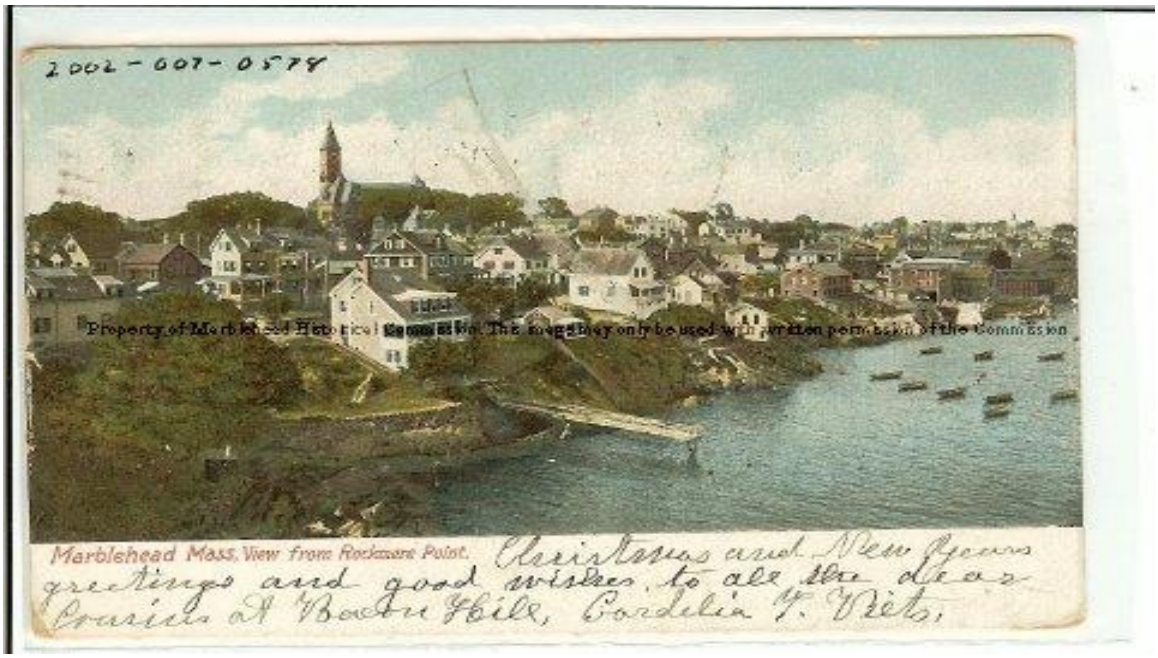
Facility Requirements Report



Preliminary Program of Requirements for the Town of Marblehead's Shared Archival Facility

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Preliminary Program of Requirements for the Town of Marblehead's Shared Archival Facility

Sponsors

Town of Marblehead

Marblehead Historical Commission

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I want to thank Chris Johnston, Rebecca Cutting, John McGinn, and Robin Michaud for their guidance and support with this important project. I sincerely thank the department staffs of the Town of Marblehead, the Archives Advisory Committee, Ariana Fiorello, and the community organization leaders for giving their time and input to assist in developing this report.

I am always happy to answer any questions about this report and about best practices in archives management, programs and facilities.

Best, *Michele Pacifico*

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Section 1: Executive Summary

Project Overview

The Marblehead Historical Commission and the Town of Marblehead have taken the first steps to determine the requirements and logistics to establish a shared archival facility to preserve and make accessible these invaluable resources. Funded by a donation made by Ross and Rita Terrien to establish a repository for the Town of Marblehead's historical documents and records, the multiyear archival study has five overall goals that have been divided into five project phases:

1. Determine the partners - organization selection.
2. Determine the organizational requirements for a shared archival facility.
3. Determine the programmatic requirements for a shared archival facility.
4. Evaluate potential sites for a future archival facility.
5. Prepare a Master Plan to create a town-wide archival facility.

In May 2017, Marblehead hired archival consultant Michele F. Pacifico to conduct the archival study. After background research and her first visit to Marblehead in July, 2017, Michele offered the first preliminary report of the project, *Archival Study for the Town of Marblehead,* on September 19, 2017. It examined the potential partners for a Marblehead Archival Facility, reviewed models of other Town Archives, and discussed the factors to be considered in selecting partner organizations and in moving forward with the planning for a shared archival facility. Please refer to the *Archival Study for the Town of Marblehead* for further details on cooperation as an archival strategy, potential partners and their collections, characteristics of a shared facility, agreements and letters of intent, and issues surrounding a future shared archival facility.

Michele made her second visit to Marblehead in October 2017 to further assess the needs and requirements for the shared archival facility, visit other Massachusetts towns with archival facilities, conduct a preliminary review of potential sites, and plan the next steps in the project.

On Dec. 7, 2017 the Town Archives Advisory Committee adopted the "Town of Marblehead Archive Facility Principles."

Town of Marblehead Archive Facility Principles

1. Mission
    a. We live in a unique and historic town – Marblehead's places, structures, people and stories are the history of New England in a microcosm. The Marblehead Town-wide Archival Facility, sponsored by the Marblehead Historical Commission, exists to hold, preserve, protect, and make accessible archival materials directly related to Marblehead's history. It is intended to be a primary research site (physical and on-line) for Marblehead history.
2. The Archival Facility will be owned by the Town of Marblehead.
3. The Archival Facility will be operated by the Town of Marblehead.
4. The Archival Facility will have a governing board comprised of the following or alternates appointed by them:
    a. The Town Administrator

b. The Town Planner
c. The Town Clerk
d. The Marblehead Historical Commission chair
e. The Town Archivist
f. The Town Historian
g. Plus one member selected by the advisory board and one from the Marblehead Museum

The Archival Facility will also have an advisory board which will include the governing board plus members of each participating organizations.

5. The Archives will be a separate Town Dept. and the facility will have a paid archivist who reports to the Town Administrator. The Town Clerk, the Historical Commission and the governing board will provide advisory input to the Town Administrator regarding the Archives.
6. All Town records appraised as permanent will be added to the Archives by accession on a schedule determined by the archivist and the Town Clerk.
7. The Archives will establish a Collection Policy that defines the scope of the facility. The Archives will accept materials solely related to Marblehead and its history subject to the limitations of the facility. Materials unrelated to Marblehead history cannot be accepted.
8. Archival materials and objects will be donated to the facility by a Deed of Gift. Gifts to the Archives will be accepted at the Selectmen's discretion subject to the Collection Policy and subject to consultation with the Town Archivist and the governing board.
9. The Archives will establish a loan policy that will detail the conditions for loans, including the frequency of loans and the duration of loans.
10. The facility will accept materials from donors with a donor supplied list of material descriptions and in Archives specified container(s)
11. Archival materials housed within the facility are accessible and available for use only with the assistance of the archivist or trained and "certified" volunteers.
12. All materials to be accepted are for permanent storage. No temporary storage will be provided, and current records cannot be accepted.
13. Materials that will be accepted include the archival records and all objects from the Town of Marblehead Historical Commission's holdings related to Marblehead and its history. Archival records accepted from other organizations will be subject to the Collections Policy and acceptance by the Board of Selectmen. Three-dimensional objects from other organizations will be accepted at the Selectmen's discretion in consultation with the archivist and the governing board. Considerations will include the object's condition, preservation needs and space requirements. Objects accepted for permanent storage must be historical in nature and related to Marblehead history.
14. The archival facility will provide preservation and access to the collections. Its storage areas will be environmentally controlled (temperature and relative humidity) and the facility will provide the appropriate security, fire protection, pest protection, and equipment to protect the holdings.

15. The facility's non-recurring costs will be funded with a combination of donated funds (Terrien and other bequests, plus any other funds from private donors), grants (if available) and town-appropriated funds.
16. The facility will be operated with town-appropriated funds. This includes staff, facility operating costs, supplies and equipment depreciation.
17. Private funds may be raised in a separate fund to improve and support the facility and archives programs.

An incomplete draft of this preliminary program of requirements was issued on June 6, 2018. Information about the archival holdings of various Town departments and community organizations was still being collected and quantified. Consequently, the estimated size of the facility was not included in the first draft report of requirements.

Marblehead engaged an archival intern for the summer to assist with the facility project research. Ariana Fiorello proceeded to measure and quantify the holding of additional Town and community organizations not included in the first draft report. This revised preliminary report includes updated information about the quantity of potential archival holdings and provides estimates for unquantified Town historical records and for the possible addition of community participants.

On June 13-14, 2018 Michele made her third visit to Marblehead to review the draft program of requirements and potential town sites. Advisory Committee members, the consultant and town representatives visited 3 potential sites:

- The Gerry School – deemed not feasible
- The Eveleth School – deemed not feasible
- Mary Alley Office Building

At meetings held during the summer, the Town Archives Advisory Committee discussed the Preliminary Requirements report's open issues and made decisions regarding the program requirements and features that would be incorporated into the new Archives facility, including the type of shelving and functional areas. This revised report includes these program decisions.

On July 26, 2018 the Town Archives Advisory Committee decided that the Mary Alley Office Building would be the site of the new Town Archives. The Committee:

- Agreed that the Mary Alley Office Building site is our plan for locating the facility, with 3 options:
  - Basement – the lower level, including the School Department office area
  - Construct new top floor – add a second story to the building
    - On September 6, 2018 the Advisory Council agreed to conduct a structural assessment of the Mary Alley Office Building to assess the feasibility of adding a floor to to the building.
  - Construct a new building on the grounds of the site.

This revised report offers a preliminary program of requirements for a shared archival facility for the Town of Marblehead. Appendix D outlines funding and educational resources that can assist in the development of the facility.

Project Findings

Section 2: Evaluation of Holdings

The Town Departments and community organizations hold a variety of archival materials, including textual records, architectural drawings, maps, photographs, posters, recordings, films, microfilms, and artifacts. Marblehead's archival records date from the 1600's, and they document the history of the Town and its government and citizens. Included are the earliest charters, agreements, land records, maps, surveys, and governance documents. This report reviews the estimated holdings reported to date and provides estimates for unquantified Town historical records and for the possible addition of community participants. Additional decisions must be made regarding the type and quantities of three dimensional (3D) objects, artifacts and furniture from community organizations that will be stored in the new facility.

Based on fixed shelving that is 90" high, the Marblehead shared facility should plan for **8,510 square feet of collections storage** in a new archives facility. This includes storage space for the present and estimated holdings of the identified partners, for potential growth if other town organizations join the archival facility at a later date, and for 15 years of collections growth. Future growth could be accommodated with mobile shelving. A larger facility is needed if the repository is to take in all partner objects and 3D collections.

Section 3: Storage Options for Archival Collections

Selection of the archival storage options in an archival facility must balance the protection of the collections with researcher access. To achieve this balance, planners must evaluate a variety of shelving and accompanying storage equipment, including flat files, cabinets, art racks, and other furniture. Selecting a shelving system or combination of systems depends on a number of factors. These include the size and quantity of the collections, the buildings' size and structure, costs, archival operations, and technical considerations. An analysis of shelving densities in conjunction with the estimated storage requirements for the identified partners will yield multiple storage options for a new or renovated shared archival facility. For planning purposes, the Archives Advisory Committee decided that the project would consider 7-shelves high fixed shelving, with the option to prepare 50% of the collection's storage area(s) for a future conversion to compact mobile shelving.

Section 4: Archival Facility Requirements

The major spaces required for shared archival facilities include lobby/reception, research, processing, collection storage, office area(s), and receiving. Where appropriate, the consultant proposed estimated square footages based on the preliminary project requirements, standard archival facility requirements, best practices, and a review of peer institutions. In addition, adjacency requirements, special space requirements, furniture, and equipment needs are listed for the archival building spaces. This report estimates that a new Marblehead shared archival facility that stores a selected number of objects and artifacts on 7 shelves high (90" high) fixed shelving requires **16,083 square feet.** After further analysis of the Mary Alley Office Building and the 3 options for that site, more precise square footage estimates can be provided for collections storage and the archival functional areas.

Section 5: Archival Facility Design Standards

The technical criteria for the design of a shared archival facility for Marblehead is based on the archival facility standards and guidelines established by the Society of American Archivists (SAA) and National Archives and Records Administration (NARA) in combination with best industry practices and the past experiences of the archival facility consultant. Criteria are given for the major design disciplines: sustainability; landscaping; building site, building structure, building exterior, building interiors, materials & finishes, plumbing systems, heating air conditioning and ventilation systems, archival environments (temperature, relative humidity and air filtration), fire protection, security, and electrical and lighting systems. This section also discusses new construction versus the adaptive reuse of an existing building and current site considerations.

Recommendations and Next Steps

All of the Marblehead organizations participating in this project require an appropriate, stand-alone and permanent facility that is designed to archival standards and that meets the functional requirements for archives storage and access. A shared facility will result in program and cost benefits for the institutions and for the people of Marblehead. A shared facility is the most efficient means to achieve the goal of preserving Marblehead's historical materials and making them readily accessible to researchers and the citizens of Marblehead.

This report concludes that most efficient and cost-effective plan for Marblehead is to design and construct a shared facility that supports archival best practices, develops operations and programs, preserves the records of Marblehead, and serves and involves the citizens of Marblehead. A new, purpose-built or a remodeled archival facility provides the Town the opportunity to address the preservation of Marblehead's history and offer a facility that provides for the long-term preservation and access to its invaluable holdings. This report estimates that a new Marblehead shared archival facility that stores a selected number of objects and artifacts 7 shelves high (90" high) fixed shelving requires **16,083 square feet**. Marblehead should continue their planning for a shared facility to be located in the Mary Alley Office Building.

The next steps necessary to advance this shared facility project include:

- Continued partner discussions
- Partner agreements - MOU
- Development of the policies and procedures and operating requirements
- Review and finalize the programming requirements for the facility
- Analysis of Mary Alley Office Building
    - Determine best option for location of the Archives in the Mary Alley Building
- Architectural review and preliminary design
- Cost estimates
- Collections inventories and processing
- Education and commitment

The consultant will continue to refine the requirements outlined in this report in conjunction with the development of site evaluations and operating procedures and conditions. The project will conclude with a Master Plan.

SECTION 2: EVALUATION OF HOLDINGS

General

As part of Phase I of the Marblehead Archives Project, Consultant Michele Pacifico and Chris Johnston of the Historical Commission began a preliminary evaluation of the current holdings of the potential archives partners. Interested partners were asked to provide an overview of their archival holdings and meet with the consultant. They gathered data about the quantity and type of archival records that the partners have now and what they can expect to receive in the future – the next 10, 20, and 30 years. This information is necessary to develop an accurate and realistic facility program.

Over three days in July, Pacifico and Johnston visited and reviewed the holdings of 14 town agencies and private community organizations, took photographs of storage areas and records, and began to estimate the types and quantities of archival records that could be included in a shared archives facility. The consultant visited again in October 2017 and resumed her review of holdings. After her visit, Johnston and Becky Cutting continued the work of estimating holdings. The consultant's first report of September 19, 2017 provided some estimates of the collections to be stored in the future facility and outlined the potential partners for a shared facility and steps for planning. An incomplete draft Program of Requirements was issued on June 6, 2018. Information about the archival holdings of various Town departments and community organizations was still being collected and quantified. Consequently, the estimated size of the facility was not included in the first draft report of requirements.

Marblehead engaged an archival intern for the summer to assist with the facility project research. Ariana Fiorello proceeded to measure and quantify the holdings of additional Town and committed community organizations not included in the first draft report. This revised draft report includes updated information about the quantity of potential archival holdings. The estimates in this report were updated as of November 8, 2018. Appendix A provides an updated spreadsheet summarizing the collections' estimates to date.

It is presumed that all Town departments will participate and eventually have their historical records stored in the new archival facility. Community organizations were asked to submit a Letter of Intent to show their interest and support in the project. Those community organizations that have not committed to the project are not included in this section. However, some growth should be planned for community organizations who request in the future to deed their collections to the Town Archives. Consequently, this revised draft report includes this updated information about the quantity of potential archival holdings and provides estimates for unquantified Town historical records and for the future addition of community participants.

Collection Policies – Impact on Size and Operations of Facility

The Town's records and each partner institution holds a variety of archival records types, some which require special storage equipment and environmental conditions. Ideally records are stored in environmental conditions that match their media type. For example, black and white photographs will last longer in cooler conditions than is necessary for paper records, while color film can best be preserved in cold storage.

Archives use digitization as a tool to improve access. However, digitization does not eliminate the need to keep and store original archival records. Furthermore, the preparation complexities and the high costs to digitize allow only a small portion of records to be digitized. Currently only a small amount of the collections has been digitized.

The potential collections include a wide range of materials:

- Textual records
- Volumes and Ledgers
- Books and pamphlets
- Oversized records (maps, architectural drawings, blueprints, etc.)
- Black and white photographic prints, slides, film, glass plate negatives
- Color photographic prints, slides, and film
- Magnetic tapes, glass plates, DVDs, etc.
- Digital/Electronic records
- Art/Paintings
- 3D Artifacts
- Textiles
- Furniture

The "Town of Marblehead Archives Facility Principles" sets forth that "The Archives will establish a Collection Policy that defines the scope of the facility." The future collection policy directly effects the size of the archival holdings and the operation and staffing of the facility. It is presumed that all Town departments' historical records and the 3D artifacts not on display will be housed in the Town Archives and be supported financially and operationally by the Town of Marblehead. It is still not decided what the collection policy scope will be for the collections of the community organizations and their varied holdings. Some of the Town's organizations hold both archival records and museum-type collections that can require oversized storage shelving and cabinets, and different processing and storage conditions. The collection policy issue is further complicated by the provision that archival materials and objects will be donated to the Town Archives by a Deed of Gift. Not all potential partners are ready to deed their entire collections to the Town Archives.

The Marblehead Museum presents the best example of the issues surrounding a shared public/private archives and it has the largest collections to consider for participation. The Museum is very interested in the project but its vast holdings of 3D objects are a complicating issue because of the quantity, size and variety of objects. For example, the Marblehead Museum has significant holdings, including furniture, tools, art, ceramics, dolls, and textiles. While the Museum is interested in deeding its archival materials, it not clear whether the private Museum would want to deed its entire museum collection or whether it is appropriate for the Archives to accept these materials.

The Museum has expressed that they may prefer some version of "loaning", providing a "permanent loan" or a deposit of its museum collections that would be an alternative to a Deed of Gift. Depositing materials requires Terms and Conditions that address the many aspects of storage and access without ownership such as, copyright, insurance, funding, deposit renewal terms, etc.

In addition, as the project progresses, the Town must determine if the new archival facility will have the capacity to accept and/or store some or all of the Marblehead Museum's object collections (or for any

other community organization) and the legal arrangements that accompany that decision. There are many possible considerations including:

- The Town allows the Museum to store some of its collections in the future growth space established within the archival facility. This would be courtesy storage with a loan agreement, and the Town staff would not be responsible for processing or managing the collections. When needed for new accessions the Museum would have to move its collections out of the Archives.
- "Rent" storage space to the Museum if they do not wish to deed the museum collection materials.
- Only include storage for selected historically significant objects that require enhanced archival environments for their long-term preservation.

For planning purposes, this preliminary program of requirements includes storage for 580 CF of the Museum's textiles and 160 paintings.

Preliminary Estimate of Holdings

Current storage for the Town's records and the community collections is inadequate for the long-term preservation of the collections. Storage has reached or is at capacity. Some departments and community organizations have no room to take in additional records. Most are not in conditions conducive for archival preservation. Some archival records are stored offsite and are included in the estimates below. Other archival records are still in Town department offices or their quantities are unknown. This report attempts to account for these unknowns in estimated growth predictions.

It must be noted that because of the current inadequacies of collections storage, materials such as bound ledgers and volumes are not stored horizontally, drawings that should be stored flat are rolled, and there are records stored on the floor or other inappropriate areas. With appropriate sized shelving and flat files, some of the materials will require more storage space than is currently allotted.
In addition, many of the records have not yet been fully processed. Processed collections can grow in volume as records are flattened, refolded and re-boxed. The report attempts to account for this processing growth in the overall total collections estimate.

Organizations measure their records differently. Some use cubic footage (CF), some use linear footage (LF), and some use a combination of CF, LF and item counts. For planning purposes and to obtain consistent estimates, the consultant will convert the linear footage to cubic footage for shelved materials. All estimated quantities are rounded up in this report.

Below are the preliminary estimates of the Town and community collections that Pacifico and Johnston were able to determine through provided estimates and on-site visits. As the project progresses and as further facility and policy decisions are made, the holdings estimate will be adjusted. Based on fixed shelving that is 90" high, the Marblehead shared facility should plan for **8,510 square feet** of collections storage in a new archives facility.

Appendix B shows selected photographs of the current storage conditions of Town collections. A complete set of photographs is available in full size format from Johnston and Pacifico.

Town of Marblehead - Town Departments

1. Abbot Public Library

The Abbot Library is a Town agency, which houses the "Marblehead Room," a collection of local history materials. It is a mix of circulating and non-circulating material. There are no set environmental conditions.

- Finding Aids: All materials are in the Library Catalog.

- Records include:
  - Printed materials about Marblehead and Essex County
  - Books by Marblehead authors
  - Vertical files – clipping file
  - Yearbooks and genealogies
  - Microfilm of *The Messenger* and the *Reporter*

- Other Possible Records:
  - A town resident may have an almost complete collection of *Neptune.*

- Record types include:
  - Textual records
  - Books
  - DVD's
  - Photographs (small amount)
  - Microfilm

Estimated Size of Holdings: 0 CF; Immediate plans are to keep collections at the Library.

2. Assessor's Office

The Assessor's Department is a Town agency. Assessors' records are presently stored in the Mary Alley Office building, some are intermixed with Finance Department records, and some stored in a room in the basement of Abbot Hall.

- Finding Aids: None

- Records dating from 1800's include:
  - Real Estate Commitment Ledgers (some from 1939-1942)
  - Log Books

- Record types include:
  - Textual records
  - Ledgers

Estimated Size of Holdings: 1,100 CF

3. Building Inspection Department/Commissioner

The Marblehead Building Inspection Department and Commissioner is a Town agency. The known records of the Building Inspection Department are stored at the Mary Alley Office Building. Records are

stored in files on mobile shelving, in filing cabinets, and rolled drawings are on shelves. Many of these records are still active. There are no set environmental conditions.

- Finding Aids: The Plans are arranged by map and parcel number. Information is not available online to the public. There is an outdated numbering system for many of the drawings and plans that is not currently available.

- Records dating from "turn of century" include:
  - Plans Reading Room – from 1950's; arranged by map and parcel number; are in file folders on shelves
  - House plans/renovation files – some from "turn of century."
  - Plans and drawings of Commercial and Public Buildings – from 1950's
  - School buildings

- Record types include:
  - Textual records
  - Resident Directories
  - Maps, Plans and Drawings – stored rolled
  - Blueprints – in a flat file

Estimated Size of Holdings: 960 CF + 4 Flat Files

- 11 shelves of rolled drawings
- 40 rolled drawings of town buildings
- 960 CF of paper records

4. Cemetery Department

The Cemetery Department is a Town agency. This department has not provided details of their historical records.

Estimated Size of Holdings: TBD

5. Engineering Department/Conservation Commission/Zoning Board of Appeals

The Marblehead Engineering Department is a Town agency. Records held by the Engineering Department also include those of the Conservation Commission, the Zoning Board of Appeals, and some of the Planning Board records. The records of the Town Engineer are stored in the Mary Alley Office Building. Records are stored in filing cabinets, cabinets, and flat files. Many of these files are still active records. There are no set environmental conditions.

- Finding Aids: There are internal indexes and finding aids, including a set of files organized by Marblehead street name. Information is not available online to the public.

- Records dating from 1800s include:
  - Records of Properties and Right of Way – from mid 1800's
  - Assessor Maps- being scanned – from 1800's
  - Files and plans of town projects – dating from 1900
  - Board of Survey records – from 1940's (some deterioration)
  - Reference files – such as Town reports

- Record types include:
  - Textual records

- Ledgers
- Index cards
- Maps, Plans and Drawings – stored flat and rolled in cabinets
- Aerial film

Estimated Size of Holdings: Current and anticipated = 810 CF + 22 Flat Files

- 106 flat file drawers @ 66 SF = footprint of flat files (approx. 15,000 drawings)
- 210 CF - Engineering Office (18 file cabinets, hanging cabinets, drawing cabinets)
- 600 CF – Engineer Archives Room - Shelving

6. Finance Department

The Marblehead Finance Department is a Town agency that maintains the financial records of the Town. The records of the Finance Department are stored in the Mary Alley Office Building. Historical records are stored in two locked rooms on shelves and in file cabinets. More current financial records dating from the 1970's to current are stored in the office. There are no set environmental conditions.

- Finding Aids: No finding aids for the historical records.

- Records dating from the late 1800's and early 1900's include:
  - Tax Assessor books – dating from 1908
  - Accounts Payable ledgers – dating from 1904
  - Finance ledgers – dating from 1882
  - Payroll records – from approx. 1927 (tri-folded)

- Record types include:
  - Textual records
  - Tri-folded textual records
  - Volumes and Ledgers

Estimated Size of Holdings: 770 CF

7. Fire Department

The Marblehead Fire Department is a Town agency. The known records of the Fire Department are stored at Headquarters. Records are stored in a cabinet and on shelves. There are no set environmental conditions.

- Finding Aids: None

- Records dating from 1700's include:
  - Log Books (54 dating from 1700's) – stored in a cabinet
  - Incident reports (from 1930's)
  - Town reports

- Other possible records:
  - Don Doliber – wrote History of Fire Department
  - Lynn Item Photographer – photos of Fire Department?
  - Jim Kerry – badge collection
  - Lee Creighton – may have Chief Creighton's memorabilia
  - Gerry No. 5 - Hand tub belongs to the town

- Record types include:
  - Textual records
  - Volumes and ledgers
  - Tools
  - 3D objects

Estimated Size of Holdings: 55 CF

8. Harbormaster

The Harbormaster Department is a Town agency. This department has not provided details of their historical records. Their review to date has found no historical records.

Estimated Size of Holdings: TBD

9. Health Department

The Health Department is a Town agency. The Health Department maintains important regulations and guidelines regarding public health topics. This department has not provided details of their historical records.

Estimated Size of Holdings: 150 CF + 1 Flat File

- 150 CF
- 75 drawings

10. Highway Department

The Highway Department is responsible for the maintenance of public streets and sidewalks and for the maintenance of all town vehicles. The department is also responsible for all public street name signs and traffic regulatory signs; street markings such as crosswalks, center lines and parking boxes; and for the general maintenance of town-owned walls and fences.

- Finding Aids: None

- Record types dating from xxxx include:
  - Textual records (may not be permanent records; need appraisal)
  - Older maps (deteriorating, slightly moldy, some falling apart)

Estimated Size of Holdings: 65 CF + 10 Flat Files

- 65 CF + 422 SF
  - Assuming that all of the maps and drawings are not permanent, the consultant estimated that 10 flat files would be required for the Highway Dept.

11. Historical Commission

The Marblehead Historical Commission (MHC) is a Town agency that maintains historical materials and a catalog of donated historical material relating to the Town, assists researchers, maintains museum facilities in Abbot Hall, assists with preservation planning for the Town's historic buildings and conducts preservation planning and related activities for the Town.

The records of the MHC are stored on various floors within Abbot Hall, the historic town hall. Records are stored in cabinets, bookcases, file cabinets, flat files, boxes and on shelves. Objects are stored on the

floor and on shelves in basement store rooms. Some records are processed and stored in archival boxes. Other materials are unprocessed. There are no set environmental conditions.

- Finding Aids: Its complete holdings are cataloged in Past Perfect. Information on the entire collection can be accessed on-line through the MHC website. Cataloging of MHC holdings is ongoing using volunteers.

- Records dating from 1600's include:
  - Documents regarding early Town institutions, Town administration, Town businesses, Town properties, war correspondence and information, etc.
  - Historical photographs
  - Historical postcards
  - Newspapers and newspaper clippings

- Record types include:
  - Textual records
  - Volumes and ledgers
  - Books and pamphlets
  - Oversized records
  - Photographs
  - 3D objects and artifacts
  - Framed paintings and photographs
  - Historic Town shop signs

Estimated Size of Holdings: 1,390 CF + 5 FF + 195 Paintings + 58 Signs

- 900 CF of records and boxed 3D artifacts
- 490 CF of 3D artifacts (assume some will need oversized shelving)
- 5 flat files (25 drawers)
- 195 paintings – requires art bin storage and wall mounted art racks
  - 100 feet of 7' high wall space
    - 15 paintings greater than 36" + 50 framed photographs greater than 36"
  - 102 SF for 12 Art Bins stacked 2-high
    - 130 less than 36" to be stored in art bins
- 58 signs – requires oversized pallet style shelving and wall mounted art racks
  - 15 feet of 7' high wall space
    - Only largest signs will hang – the rest of signs will be on oversized shelving
  - 260 SF pallet shelving – estimate 4 units for signs and some 3D artifacts
    - Typical pallet shelving for signs – one 2-shelf unit measures approx. 96" L x 48" D x 96"H = 32 SF per unit and 128 SF for 2 units back-to-back.

12. Municipal Light Department

The Marblehead Municipal Light Department is a Town agency. This department has not provided details of their historical records.

Estimated Size of Holdings: TBD

13. Planning Board/Town Planner

The Marblehead Planning Board is a Town agency. Some of the Planning Board's files are held by the Engineering Department and are included in the Engineering Department size measurements.

- Finding Aids: None

- Record types dating from xxxx include:
  - Textual records
  - Maps/plans
  - Ledger books
  - Photographs

Estimated Size of Holdings: 75 CF

14. Police Department

The Marblehead Police Department is a Town agency. The known records of the Police Department are stored at Headquarters. There was a flood in the basement and many records got wet and moldy. Records are stored in filing cabinets and in boxes on top of cabinets and on the floor. There are no set environmental conditions.

- Finding Aids: None

- Records dating from 1960's in basement include:
  - Investigation reports
  - Police logs

- Other Possible records:
  - Gridiron Club
  - Police Museum – some items may still be in Old Town House
  - Don Doliber – wrote history of Police Department

- Record types include:
  - Textual records
  - Volumes and Ledgers
  - Photographs

Estimated Size of Holdings: 200 CF

15. Recreation and Parks Department

The Recreation and Parks Department's mission is to enhance the environment and the quality of life for the residents of Marblehead. This is accomplished by the development of a variety of recreational activities in a safe and enjoyable setting, and through the care and maintenance of the Town's parks, athletic fields, and recreational areas.

- Finding Aids: None

- Record types dating from xxxx include:
  - Textual records (some dated 1971-2012)
  - Plans
  - Photographs

Estimated Size of Holdings: 175 CF

16. School Department

The Marblehead School Department is a Town agency that oversees the Town's schools.

- Finding Aids: None

- Records dating from xxxx include:
  - Personnel records
  - Attendance records
  - Manuals
  - Finance records
  - Meeting minutes
  - School registers
  - School Committee records
  - Village school projects
  - Photographs

- Record types include:
  - Textual records
  - Photographs

Estimated Size of Holdings: 500 CF

17. Selectmen's Office/Town Administrator

The Board of Selectman serve as the Town's chief executive body. They have overall responsibility for the general operations of the Town. The Town Administrator, appointed by the Board of Selectmen, administers the business of the board and prepares its agenda. Citizens wishing to appear before the board should provide reasonable notice to the Town Administrator. Under the direction of the Board of Selectmen, the Town Administrator is responsible for the day-to-day operation and oversight of town departments and appointed positions under the jurisdiction of the Board of Selectmen.

- Finding Aids: None

- Records dating from 1700 (470 CF) include:
  - Procurement records
  - Finance records
  - Disposition files
  - Insurance claims
  - Selectmen Licensing (Liquor)
  - Causeway Seawall
  - Personal papers
  - Marblehead Reporters

- Records found in Mary A. Alley Building – Basement Back Room (40 CF) include:
  - Acts of Resolve (1700-1900s)
  - General Court Manuals
  - Other

- Record types include:
  - Textual records

Estimated Size of Holdings: 510 CF

18. Town Clerk

The elected Town Clerk has a variety of duties including serving as the recording officer, the registrar of vital statistics, the public records officer, the licensing officer and the chief election official. The job also entails storage of the town's historical records, which go back hundreds of years.

The Town's records are governed by the State's Public Records Law and the disposition of public records are guided by *The Municipal Records Retention Schedule.* By state law, records from prior to 1870 are required to be preserved. Permanent records are to be retained for the life of the Commonwealth and must be maintained in an accessible form. Additionally, permanent municipal records must be retained within the municipality.

The Town records administered by the Town Clerk are stored within the Clerk's office and in "vaults" in the basement of Abbot Hall. Records are stored on shelves, in file cabinets, in boxes, in varied sized volumes/ledger books, and in old "court file metal boxes" historically used for tri-folded deeds and wills. Some records are "processed." Other materials are unprocessed. There are no set environmental conditions.

- Finding Aids: Town Clerk has internal paper indexes and finding aids to the Town records. The finding aids are not available online to the public.

- Records dating from the 1600's include:
  - Subject files on the Poor House, Schools, etc.
  - Audio recordings – Selectmen meetings
  - Birth, marriage, and death indices and records
  - Town reports
  - Town meeting minutes
  - Town ledger and records in volumes
  - Zoning records
  - Census records
  - Assessor records

- Record types include:
  - Textual records
  - Volumes and ledgers
  - Audio recordings

Estimated Size of Holdings: 570 CF

19. Veteran's Services

Veteran's Services is a Town agency that assists the veterans of the Town of Marblehead and their families.

- Record types dating from xxxx include:
  - Textual records

Estimated Size of Holdings: 25 CF

20. Water and Sewer Department

The Marblehead Water and Sewer Department is a Town agency. This department has not provided details of their historical records.

Estimated Size of Holdings: TBD

Town of Marblehead - Town Departments Summary

- 6,865 CF of textual records
- 500 CF of unquantified records (estimates)
  - Cemetery (150 CF)
  - Harbormaster (50 CF)
  - Light Department (150 CF)
  - Water and Sewer (150 CF)
- 490 CF of 3D artifacts
- 45 flat files
  - currently total is 42 FF – added 3 additional FF for materials identified as maps or plans in general cubic footage of organization
- 195 paintings – requires art bin storage and wall mounted art racks
  - 100 feet of 7' high wall space
    - 15 paintings greater than 36" + 50 framed photographs greater than 36"
  - 102 SF for 10 art bins stacked 2-high
    - 130 less than 36" to be stored in art bins
- 58 shop signs – requires oversized pallet style shelving and wall mounted art racks
  - 15 feet of 7' high wall space
    - Only largest signs will hang – the rest of signs will be on oversized shelving
  - 260 SF pallet shelving – estimate 4 units for signs and some 3D artifacts
    - Typical pallet shelving for signs – one 2-shelf unit measures approx. 96" L x 48" D x 96"H = 32 SF per unit and 128 SF for 4 units back-to-back.

Town of Marblehead – Participating Town Organizations

1. Corinthian Yacht Club

The Corinthian Yacht Club is in the process of organizing its collections following the publication of its history this year.

- Finding Aids: In process

- Record types dating from xxxx include:
  - Textual records
  - Yearbooks
  - Photographs
  - 3D artifacts

Estimated Size of Holdings: 50 LF (processed in acid free folders and boxes)

2. Gerry No. 5 VFA

The Gerry No. 5 Volunteer Fire Association is a volunteer non-profit association.

- Record types dating from xxxx include:
  - Textual records
  - Other?

Estimated Size of Holdings: 3 CF (estimate provided by a third party)

3. Marblehead Arts Association

The Marblehead Arts Association, founded in 1922, is a non-profit that operates the historic Hooper Mansion that showcases local and regional art. Records are stored in the basement and in closets throughout the house. The records have not been processed or appraised. There are no set environmental conditions.

- Finding Aids: 2 general lists of records by location in the house. (may be incomplete)

- Records dating from the 1950's (to check) include:
  - Non-active records from the 1950's – financial, administrative, Council
  - Membership files and surveys
  - Events
  - Volunteer and Docent manuals

- Record types include:
  - Textual records
  - Photographs
  - Posters
  - Art
  - Artifacts such as pottery, historic wooden bowl
  - Furniture, including a wooden bed

Estimated Size of Holdings: 150 CF of textual records

4. Marblehead Museum

The Marblehead Museum is a non-profit institution. It was formerly the Marblehead Historical Society. It holds both archival and museum collections and operates three museums.

Archival Records: Are stored in the museum office and offsite. There are no set environmental conditions.

- Finding Aids: Records are catalogued in Past Perfect and some are available online to the public.

- Records dating from the 1700's (to check) include:
  - Records of the Marblehead Historical Society
  - Unitarian Church records (photographs are scanned)
  - Female Humane Society records
  - Personal papers (Ex. Ashley Bowen journals)
  - History books

- Record types include:
  - Textual records
  - Ledgers
  - Books
  - Photographs and Photo Albums (over 20,000)
  - Glass Plate Negatives
  - Maps
  - Newspapers
  - Art – framed paintings

Estimated Size of Archives Holdings: 875 CF + 6 Flat Files

- 765 LF - 26 shelving units
- 5 – 5 drawer flat files overfilled (estimate at 6 FF)
- 50 CF - 5 filing cabinets of glass plate negatives, slides, transparencies
- 30 CF - 10 plastic bins of uncatalogued materials offsite
- 30 LF - Photos and albums

Museum Collections: Currently stored in the Lee Mansion are a sizeable quantity and wide variety of 3D objects, textiles, and furniture. Collections are stored on all floors of the house, including the attic and basement. There is also a 16'x10'x8' off site storage unit. The historic house has no fire protection and no set environmental conditions.

- Finding Aids: Objects are catalogued in Past Perfect and some are available online to the public.

- Object types include:
  - Paintings
  - Textiles
  - Wood furniture
  - Tools
  - Swords
  - Dolls
  - Ceramics
  - Trunks
  - Rugs
  - Newspapers
  - Signs

The Museum is very interested in the project but its vast holdings of 3D objects are a significant complicating issue because of the quantity, size and variety of objects. As the project progresses, the Town must determine if the new archival facility will have the capacity to store some or all of the Museum's object and artifact collections and the legal arrangements that accompany that decision.

The Museum has placed a priority of obtaining environmentally sound storage for its most fragile items. It would free up much needed storage space in the Mansion and provide better conditions if the archival facility could store the paintings and textiles. For planning purposes, this report estimated the storage requirements for the Museum's paintings and textile collections.

Estimated Size of Museum Holdings to be stored in archival facility: 580 CF + 160 paintings

- 580 CF - Textiles (require oversized shelving)
- 160 paintings ("half large and half small" - requires art bin storage and wall mounted art rack (for large framed paintings)
    - NOTE: Artwork not measured; many need less wall space and more bins
        - 68 SF for 8 Art Bins stacked 2 high for approx. 80 paintings
        - 115 feet of 7' high wall space estimated for approx. 80 wall mounted paintings

5. Marblehead TV (Marblehead Community Access and Media, Inc. – MCAM)

The MHTV Archives Project has identified their historically significant videos but considers their holdings "active records" that until digitized, need to remain onsite. However, after a database is developed and the issues of digitization and storage are resolved, there is the possibility that the original media may be deposited in the Town Archives. Certainly, the Town Archives and its researchers will want to know about the MCAM's holdings and access any media that is available on the internet.

- Finding Aids: They also have begun developing a searchable database of 30 years of *Headliner – The News of Marblehead.* They also have lists of their holdings dating from xxxx.

Estimated Size of Holdings: 120 CF

- 81 CF – Tapes and DVD's
- 37 CF – Playback decks
- Digital files on servers

6. Okomakemesit Veteran's Firemen's Association

The Oko's is a volunteer non-profit association. They lease a town-owned historic building built around 1888. It houses the Oko hand-pump, fire equipment, and firefighting memorabilia. There are no set environmental conditions.

- Finding Aids: None

- Record types dating from xxxx include:
    - Textual records in boxes under cabinets and cases
    - Log Books
    - Photographs and albums
    - Ribbons
    - Trophies
    - Framed prints and photos
    - Models
    - Fire Engine, Original Wood Decking and horse pulls

    Estimated Size of Holdings: 40 CF - Oko's want to donate the textual records and log books and retain all museum materials.
        - MP Estimated 64 CF of textual records
        - AF estimated 31 CF of textual records

Town of Marblehead – Participating Religious Organizations

1. Clifton Lutheran Church

Clifton Lutheran Church is a member of the Evangelical Lutheran Church of America.

- Finding Aids: Clifton Lutheran has organized its holdings and inventoried the records.

- Record types dating from xxxx include:
  - Textual records
  - Photographs
  - Blueprints (6 rolls)
  - Index cards (birth, death, wedding, confirmation, etc.)
  - Bibles
  - CD's

Estimated Size of Holdings: 60 CF

2. First Church of Christ (Old North Church)

A congregation of the United Church of Christ, the First Church of Christ, also known as the Old North Church, was established in Marblehead in 1635. The Old North Church's oldest records are housed in Boston in the environmentally controlled archival facilities at the Congregational Library in Boston through a revocable Trust.

However, some records dating from the 1850's are housed in the church office in Marblehead. The records are catalogued. In addition, the church's most valuable artifacts (Silver – Paul Revere Bowl, Parson Barnard Bible) are housed in a vault at the bank, or in other location(s). There are no set environmental conditions.

- Finding Aids: The records held at the Congregational Library are catalogued and information is available on the Congregational Library's website. These records have been digitized in a non-searchable format and the Church has provided a digital copy of the files for use by the town-wide archives. Information about the records held at the Congregational Library could easily be integrated into future descriptions and catalogs within the Town Archives. It appears that the Church also has the option to return the records to Marblehead. The records stored in the office are also catalogued but the finding aid is not available online to the public.

- Record types include:
  - Textual records in filing cabinets, a cabinet and in boxes
  - 40 rolled/folded architectural drawings of church property. Max. size approximately 48" long = 2 flat file drawers

Estimated Size of Holdings: 71 CF + 40 rolled drawings (2 FF drawers)

3. Saint Andrew's Episcopal Church

The Church of Saint Andrew was established in 1924, when its original chapel was completed. The Church has not provided details of their historical records.

Estimated Size of Holdings: 11 CF

4. Saint Michael's Church

Saint Michael's Episcopal Church dates from 1714 and is the oldest Episcopal Church in New England that is still standing on the its original site. St. Michael's has an endowed archival facility, with archival environmental controls, on its property.

- Finding Aids: The church records are catalogued.

Estimated Size of Holdings: 0 CF; The Church will share its digital records with the Town Archives.

5. Saint Stephen's Methodist Church

Saint Stephen's Methodist Church dates its formation back to a July 31, 1791 service by Jesse Lee. A prominent citizen who went on the become Town Clerk, Joshua Prentiss, opened the "upper room" of his home at 37 Mugford St. as the first worship space, and seven ladies became our first full members. From 1833 to 1917 it was known as the Methodist Episcopal Church at Marblehead. In 1917 the church adopted the name St. Stephen's Methodist Episcopal Church and then in 1939 the name became Saint Stephen's Methodist Church.

- Finding Aids: The Church provided a list of holdings stored in file cabinets.

Estimated Size of Holdings: 4 CF

6. Temple Emanu-El

Temple Emanu-El, a Reform Congregation, was established in 1954.

- Finding Aids: None

- Record dating from xxxx include:
  - Minutes
  - Newsletters
  - Photographs
  - Memorabilia

Estimated Size of Holdings: 90 CF

7. Temple Sinai

Temple Sinai, a Conservative Congregation, was established in 1954. Records date from the mid-1950's. There are no set environmental conditions.

- Finding Aids: None

- Record types dating from xxxx include:
  - Textual records in filing cabinets and in boxes
  - Newsletters
  - Photographs
  - Slides
  - Videos

Estimated Size of Holdings: 35 CF

Town of Marblehead – Participating Town Organizations Summary

- 2150 CF of textual records and textiles
- 8 flat files current total is 7 FF – add 1 FF for unidentified oversized records
- 68 SF for art bins – approx. 80 paintings
  - estimated for 8 art bins stacked 2 high = 24 SF
- 115 Feet of 7' high wall space estimated for 80 wall mounted paintings

- NOTE: Artwork not measured; may need less wall space and more bins
- Mobile art rack storage would provide greater efficiencies.

Summary – Preliminary Estimate of Storage Requirements

Archival collections are expected to grow for the foreseeable future. Records become archival when they are no longer needed for everyday use by the creating office or institution, which can take up to 25 years or more. Even with expanded initiatives to create more electronic records, the Town of Marblehead Archives can expect to accession physical records for many years. Furthermore, Archives use digitization as a tool to improve access and it does not eliminate the need to keep and store original archival records.

For planning purposes, the Archives Advisory Committee decided that the project would consider 7-shelves high fixed shelving, with the option to prepare 50% of the collection's storage area(s) for a future conversion to compact mobile shelving. Estimates in this report for the shared facility are based on fixed shelving, 7-shelves high at approximately 90" high.

Summary of Holdings

Town Departments

- 6,865 CF of textual records
- 500 CF of unquantified records (Consultant provided ballpark estimates)
- 490 CF of 3D artifacts
- 45 flat files
- 195 paintings – requires art bin storage and wall mounted art racks
  - 100 feet of 7' high wall space
  - 102 SF for 10 art bins stacked 2-high
- 58 shop signs – requires oversized pallet style shelving and wall mounted art racks
  - 15 feet of 7' high wall space
  - 260 SF pallet shelving – estimate 4 units for signs and some 3D artifacts

Town Organizations

- 2,150 CF of textual records and textiles
- 8 flat files
- 68 SF for art bins – approx. 80 paintings
- 115 feet of 7' high wall space estimated for 80 wall-mounted paintings
  - NOTE: Artwork not measured; may need less wall space and more bins
  - Mobile art rack storage will be more efficient

TOTAL SUMMARY OF HOLDINGS = 6,060 SF + 230' wall space

- 5,000 SF for 10,005 CF of records, textiles and 3D collections on fixed archival shelving @ 7 shelves high
- 630 NSF for 54 flat files stacked 3 high
  - 35 SF per 3 FF stacked 3 high - includes drawer dimensions and aisles

- 170 NSF for art bins
- 260 NSF for pallet shelving
- 230 Feet of 7' high wall space for wall-mounted paintings and photographs

Estimated Total - Immediate Storage Needs: 6,060 SF

- Does not include 230 feet of wall space for wall mounted collections (TBD in design)

Estimated Total - Growth Space for other Town Departments and Community Organizations which have not been identified: 200 SF

- 400 CF = 200 SF on fixed shelving
  - 4% of 10,000 CF = 400 CF of unidentified records
  - 3% of 6,060 SF = 182 SF of unidentified records

Estimated Total - Future Storage Needs for 15 years: 2,250 SF

Generally, archivists estimate that archival collections grow annually by 3%. A 3% growth estimate takes into account expected accessions, unexpected accessions, and the growth of the records during processing procedures.

- 3% of 10,000 CF = 300 CF annual growth
- 15-year growth at 3% = 4,500 CF = 2,250 SF on fixed shelving

Estimated Total Collection Storage Needs: 8,510 SF

Conclusion

Based on fixed shelving that is 90" high, the Marblehead shared facility should plan for **8,510 square feet** of collections storage in a new archives facility.

The Town Archives Advisory Council has selected the Mary Alley Office Building as the site of the future Town Archives. Further analysis still needs to be completed to determine the exact location within the building for the Archives.

Section 3 will outline the shelving and equipment options to assist in selecting the appropriate storage equipment for the selected site of the future Marblehead Archives.

SECTION 3: STORAGE EQUIPMENT OPTIONS FOR ARCHIVAL COLLECTIONS

General Requirements

The majority of space in an archival facility is dedicated to the safe storage of the collections. The challenge is to store and protect the collections while still making the records accessible to researchers. A key component in this strategy is careful planning of the shelving and accompanying storage equipment, including cases, cabinets, racks, and other furniture that supports the collections.

Shelving is a long-term investment for an archives facility and must be planned to meet the specific needs of the archives and reflect the size and quantity of its collections. The choice of a shelving system or combination of systems depends on a number of factors, including:

- Size and quantity of the collections
- Buildings size and structure
- Shelving costs and budget
- Archival operations
- Technical considerations.

Archival collections are expected to grow for the foreseeable future. Generally, with any archives facility, as more storage space is made available than more materials are sent to the archives for proper processing and storage.

Shelving Types

Archival storage systems consist of fixed or mobile shelving of various densities, with mobile systems being either manual or electrically operated. Static or fixed shelving is less expensive to purchase and install but requires a larger floor area than mobile shelving. Compact mobile shelving can store more records in a smaller space resulting in savings on land costs, building size, construction costs, building operations costs, and the long-term energy costs for conditioning the storage spaces. Mobile shelving requires a heavier floor load than fixed shelving and may not be feasible in existing buildings.

An advantage of electrically operated mobile shelving is the ability to connect it to the fire protection system and automatically move the shelves into "fire mode" upon alarm or when the building is closed.[1] Electric mobile shelving can also enhance security by allowing lockable mobile units, where one or more modules of sensitive or valuable records are locked using keypad access or other security methods.

Other shelving types include flat files (or map cases), cabinets, art racks and oversized storage. All types of shelving can be fixed or put on mobile carriages. The Town archival facility will require some flat files or specially sized shelving for rolled plans and drawings. It may also require cabinets for 3D storage. If

[1] Mobile shelving systems that use electrically operated shelving can automatically go into "fire mode." Upon activation of a smoke detector, water flow alarm, or manual alarm, fire mode allows the shelving rows to automatically separate to create minimum 5-inch aisles. This allows the smoke to escape to the detectors and the water to effectively put out the fire, reducing loss of records. Electric mobile shelving systems also can be programmed to go into fire mode when the archival facility is closed for business.

furniture is to be stored in the Town archives, then some oversized storage should be included in the storage area(s).

Shelving Heights

The height of the shelving can vary depending on the desired retrieval method of the collections along with the building's structure, footprint and ceiling height. Traditionally the standard archives shelving height has been 84 to 90 inches providing 7 shelves that are 12 inches apart. This allows access to all the shelves with a footstool or short ladder. However higher shelving systems and increased density heights are increasingly more common to offset the increased costs for archival storage. Current fire protection standards allow mobile electric high bay shelving to go as high as 30 feet without in-rack sprinkler installations, as long as the materials are stored in boxes or containers.

Shelving taller than 8 feet/ 7 shelves requires the use of rolling ladders, lifts, or a mechanical retrieval system. However, when using taller shelving units or high bay shelving, careful planning of the records locations can ameliorate the retrieval issues. For example, by locating the most heavily retrieved collections on the lowest shelves they can be accessed without using a ladder or lifts. See Appendix G for examples of shelving types and heights.

Aisles

The maximum length of the storage room aisles is dictated by the footprint of the room, the location of the columns and doors, the type of shelving system, preferred type of retrieval and access time, and building and life safety codes.

The width of the aisles between ranges of shelving is different depending on the footprint of the room, the shelving system, and if ladders or lifts is needed. In general, aisles between rows of shelving should be a minimum of 36 inches wide although 42 inches is preferred; the width will increase if lifts are required.

Often a main circulation aisle is provided for each storage room that can range in size from 4 feet to 8 feet wide depending on cart, ladder and lift use.

Shelf Size

Archives should maximize their storage capacity by using a standard sized shelf that accommodates the use of archives boxes, records center type boxes, and some special media records.[2] Specialized shelving sizes are required for oversized and special sized records.

Storage can be designed using single or double-sided deep shelving units. Generally, archives shelve boxes using adjustable single sided 4 post or case type shelving units. Records Centers often increase the density and shelve using double-sided, double deep shelving units. Standard archival shelves measure

[2] An archives box, also knows as a flip top box or a Hollinger box, holds folders containing paper documents stored vertically. It comes in letter size (12 ¼" W x 10 ¼" H x 5" D) and legal size (15 ¼" W x 10 ¼" H x 5" D). A record center type box, also known as a cubic foot box, holds approximately one cubic foot of records and is designed to hold either legal or letter size files (12" W x 15" L x 10" H).

16 inches x 40 inches. Shelving can be designed with a single "pass through" shelf of 32 by 40 inches, allowing the storage of standard boxes as well as oversized items. However, there are other effective shelf size options, such as shallower shelving typically used for Library books. Some manufacturers offer a standard shelf that measures 42" long, and the cost savings may offset any inefficiencies.

In all cases the bottom shelf should be at least 4 inches off the floor to mitigate damage from water incursion.

Oversized Collections

Oversized and three-dimensional materials require the use of specially-sized shelving, flat files, cabinets and vertical art racks. See Appendix H for examples of storage equipment for oversized and 3D materials.

Storing oversized records like maps and drawings require specialized storage. See Appendix H for examples of oversized map and drawing storage.

There are several options for maps and plan storage:

- Storing flat in oversized folders that are held in flat files
- Storing rolled plans in bags or tubes on open shelving
- Storing rolled plans fastened to the wall with brackets or specialized roll storage equipment

Some departments like the Engineering Department already have some of their records in flat files that can be transferred to the new facility. Other departments and organizations have their numerous rolled drawings. This study assumes that all rolled drawings/maps will be flattened and stored in flat files.

Materials

All shelving should be all steel construction and finished with an electrostatically applied powder coated finish. Each shelving unit must have solid steel shelves.

Aluminum shelving is acceptable for artifacts. Open chrome-plated steel shelving is recommended for cold storage rooms.

Since a site has not been selected for this project, this analysis considered several shelving options, including both fixed and mobile shelving.

Density Analysis

Section 2, Evaluation of Holdings, offers preliminary estimates for the Town and partner collections. These materials are to be stored in controlled conditions on a shelving system that best suits the needs of each material type. The primary concerns for selecting a storage option are:

- Storage efficiency
- Collections access and retrieval requirements
- Shelving and building construction costs
- Operating costs

- Restrictions of existing building structure and ceiling heights (for a renovated building)
- Desirability to reuse existing equipment

Storage efficiency is determined by the type of shelving and the number of shelves per unit. Mobile shelving units house records more efficiently than fixed shelving types.

This analysis considers fixed and compact mobile shelving types at three storage densities. Other shelving densities can be considered after site evaluations.

- Low density with 7 shelves
- Medium density with 11 shelves
- Medium/high density with 15 shelves

Based on previous experience, these shelving types result in a ratio of cubic feet of records to the number of square feet required for storage, taking into account standard shelving and aisle sizes. The total cubic feet of required storage have been divided by the shelving type density factor to determine an estimated room square footage.

Table 3.1 shows the estimated square footage of storage needed to store 10,000 cubic feet of textual records. It is provided as planning tool and the actual square footage for the Marblehead facility will be determined after final programming, site selection and design.

Table 3.1: Example - Storage Footprint Comparisons Between Shelving Types

CF to SF Ratios for Shelving Types	CF: SF*	CF of Storage	Estimated SF Footprint Needed for Storage
Ratio for 7 High Fixed Shelving	2:1	10,000 CF	5,000 SF
Ratio for 7 High Mobile Shelving	3.8:1	10,000 CF	2,632 SF
Ratio for 11 High Fixed Shelving	Est. 3.2:1	10,000 CF	3125 SF
Ratio for 11 High Mobile Shelving	Est. 6:1	10,000 CF	1667 SF
Ratio for 15 High Fixed Shelving	4.4:1	10,000 CF	2,273 SF
Ratio for 15 High Mobile Shelving	8:1	10,000 CF	1,234 SF

*Uses 80% efficiency allowing for shelving superstructure and voids.
*This does not include the extra SF required for oversized materials, map cases, special cabinets, artifacts, art, vault, pallet racks, etc.
*This does not include space needed to divide the records into separate environmentally controlled storage rooms.

Utilizing these density factors, building area requirements can be calculated for the various shelving types. Denser higher compact mobile shelving requires the least footprint, while a fixed shelving of low density requires the most area to house archival collections.

Cost and Operations Implications

Efficient shelving systems are costly, but the reduction in building footprint more than offsets this expense. Using low density fixed shelving, even in an existing building, will most likely be the most expensive option because of the larger footprint required.

It is important to note that an efficient building using high-density compact shelving could have higher operational costs due to the staffing and equipment required to retrieve records from 15-foot-high shelving. Lifts operated by trained personnel are required for pulling records in higher shelving systems and this normally prohibits using interns or volunteers to retrieve records above a certain height.

However, operational and software solutions could be used to offset the challenges of high-density retrieval. For example, based on a system that is 15 shelves high one recommended solution is:

- Locate the most frequently retrieved records on the lower 7 shelves that can be retrieved without a ladder or lift.
- Locate less frequently used records on the middle tiers (shelves 8-11) that require a rolling ladder.
- Locate the least frequently used records on the upper tiers of shelves (shelves 12-15) for retrieval with a lift.

A records location register program could be implemented before or during the move of the records to the new building that would assist in the quick location of all "records" (box, volume, drawing, etc.). This provides the staff with aisle and shelf locations and could also indicate retrieval time for the requested record. For example, barcode programs using acid-free bar code labels are commonly used with new shelving installations and when relocating archives. Being able to track the locations of boxes, books, and other records from old locations, onto trucks, and into a new building provides for a better move with more control and improved services for the future.

In many storage applications, radio frequency identification (RFID) tags are replacing barcodes. RFID tags are intelligent bar codes that can talk to a networked system to track materials.

Ex: Barcode System

Evaluation Criteria

The future facility should be flexible with space for the future growth of collections. Options include:

- Select a site or building that has space to add collections storage rooms to the building as needed in the future.
- Construct "growth" collections storage areas at the start of the project. For example, install the mobile shelving rails and cover them with aluminum caps and fixed shelving. Do not install the mobile carriages and shelving units until they are needed.
- Install the rails and leave the space open. This future archival storage space can be used in the interim as swing space, for pallet and oversized object storage, and/or as additional processing space(s).
- Provide courtesy records center storage for Town departments until the shelving space is needed for archival records.
- Provide courtesy storage for Marblehead Museum objects and furniture until the shelving is needed for archival records.
- Install shelving uprights for 11 to 15 high shelving, but do not purchase and install the top 2 or 3 shelves until needed.

In order to evaluate the storage options that are best suited Marblehead's archival facility, the following criteria should be considered when making decisions regarding storage for the collections.

- Building footprint size – how critical is minimizing the building size and/or the collections storage size?
- Building structure and ceiling height restrictions – what does the selected site offer for optimal collections storage?
- Building and shelving costs – what is the available funding for construction and equipment costs?
- User preference – which option best meets Marblehead's requirements?
    - Operational flexibility – using lifts could limit staffing options as only staff with appropriate training can use lifts.
    - Ease of access and retrieval – optimize records retrieval time: are records readily accessible and is ease of access and retrieval a critical factor?
        - Ready access (7 shelves), ladder access (8-10); or ladder/lift access (11-15 shelves).
        - Consider organizing shelving locations for most frequently retrieved records on the lower 7 shelves if using a higher shelving system.

The Town should compare several desirable shelving options in conjunction with developing the site evaluations, operational policies, and budget for the Town Archives.

Shelving for Mary Alley Building

On July 26, 2018 the Town Archives Advisory Committee decided that the Mary Alley Office Building would be the site of the new Town Archives. The Committee:

- Agreed that the Mary Alley Office Building site is our plan for locating the facility, with 3 options:
    - Basement – the lower level, including the School Department office area
    - Construct new top floor – add a second story to the building

        - On September 6, 2018 the Advisory Council agreed to conduct a structural assessment of the Mary Alley Office Building to assess the feasibility of adding a floor to the building.
    - Construct a new building on the grounds of the site.

The new archives facility collections storage areas will begin operations using fixed shelving for boxed archival materials and 3D objects. It will use flat files for maps and oversized drawings, plans, and textual records. The artwork will be stored in fixed art bins and the large framed materials can be hung on wall-mounted art racks if there is available wall space. See Appendix H for examples.

For planning purposes, the Archives Advisory Committee decided that the project would consider 7-shelves high fixed shelving, with the option to prepare 50% of the collection's storage area for a future conversion to compact mobile shelving.

If the Mary Alley basement is selected as the site for the Archives, the current ceiling height is 7 ft. 10 in. (94 inches) from the floor to the drop ceiling. The space above the drop ceiling has not been determined to date. Assuming that there is at least 15 additional inches above the drop ceiling that can be used for the fire suppression system, typical archival shelving that is 7 shelves high would fit into the basement option.

Section 4: ARCHVIAL FACILITY REQUIREMENTS

Summary – Program Estimates

This proposed facility will serve as the Town of Marblehead's Archives and will provide secure archival storage and standard archival support services. Below are the desired components for the Town's archives. It is conceptual and will be refined as collections policy decisions and the final requirements are determined.

Not all of the components of an archival facility are required for the Town's archives and others will be sized to according to their support functions. For example, it is not expected that the Town Archives will include a complete Conservation Laboratory. Other areas like a multi-purpose meeting room and exhibit area are very useful and can be shared/combined with other Town departments.

The facility staff requirements are based on a projected staff of 2 employees, a full time Archives Director and an assistant archivist (possibly part-time). The professional staff will be supplemented by interns and trained volunteers. This preliminary program is planned for 6 trained volunteers.

Where appropriate in the programmatic narratives, the consultant proposed an estimated range of net square footages based on the preliminary projected requirements, standard archival facility requirements, best practices, and a review of peer institutions.[3] However, in the Program Tables, the consultant assigned an estimated square footage that is considered practical for the lower level of the Mary Alley building. A second story addition to the Mary Alley building may allow for more efficient planning and result in greater square footages for the program spaces.

The estimated square footages provided in this report should not be considered the final programming requirements for a new facility. They serve as a starting point for discussion and review and will change after operational decisions and site selection are completed. Further planning will incorporate circulation factors, efficiencies of design, and cost and site considerations

The two preliminary estimates provided are based on a one-floor building with 7 shelves high fixed or mobile shelving. The estimated square footage for an archival facility using 7 shelves high (90" high) fixed shelving is **16,083 SF**. Factors including site selection and footprint, further analysis and decisions, and the height of shelving can greatly impact the size of the building.

The recommended next steps are outlined in Section 6. After review of this preliminary requirements report, policy decisions and further discussions of the Town's requirements for the facility are needed to reconcile and finalize the building's requirements before site selection.

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[3] Net square footage represents the actual unobstructed usable floor area or square footage assigned to a primary use for an individual unit, contained within a defined perimeter. In effect, net area is the actual area of, offices, computer workstations, support areas, or special function areas ***exclusive*** of partitions, exterior walls, public and private corridors, columns, pipe chases, stairs, mechanical and electrical space, and all similar areas that are not usable for archival facility functions.

Table 4.1: Archival Facility Summary Requirements – based on fixed shelving#

Building Areas	Estimated Net Square Feet	Notes
Lobby/Reception	800 NSF	Security/Reception Desk Multi-Purpose Meeting Room Exhibit Gallery/Gift Shop
Research Area	800 NSF	Locker Area Registration/Consultation/Library Research Room Central Desk Copying Area# (optional) Refile/Holding Area# (optional)
Records/Collections Storage*	8,510 NSF	For Collections on 7 shelves high fixed shelving. +Special Media +Oversized and Artifacts
Collections Processing	1,000 NSF	Records Processing Areas Imaging Lab Archival Supply Storage
Administration/Office(s)	500 NSF	Office/Workstations Support Areas Break Room Meeting Room# (optional)
Isolation/Quarantine Area	100 NSF	
Receiving#	TBD	Loading Dock(s)# Dock Office, Storage, and Trash+
Net Usable Square Feet	11,710 NSF	
Walls and Circulation @ 9%**	1,054 NSF	
Building Systems and Support @ 26%**	3,319 NSF	Includes central plant, fire & security control rooms, janitor closets, bathrooms, telecommunications, and potential redundant systems per National Archives standard.
Gross Square Feet	**16,083 GSF**	Fixed Shelving - 7 Shelves high

#There is a range of estimated square footages for each program area discussed in the program narratives. A square footage that is considered practical for the lower level of the Mary Alley building has been assigned in the table for discussion. Optional areas are NOT included in the SF estimates. The Receiving/Loading Dock areas are not included in this estimate.

***The facility footprint could be reduced if the shelving was higher or if mobile shelving was used. See Table 4.2. The SF includes space for special media and 3D artifacts.

**Circulation and Support Spaces could be lower depending on economies of planning and systems decisions.

Table 4.2: Archival Facility Summary Requirements – based on mobile shelving#

Building Areas	Estimated Net Square Feet	Notes
Lobby/Reception	800 NSF	Security/Reception Desk Multi-Purpose Meeting Room Exhibit Gallery/Gift Shop
Research Center	800 NSF	Locker Area Registration/Consultation/Library Research Room Central Desk Copying Area# (optional) Refile/Holding Area# (optional)
Records/Collections Storage*	4,930 NSF	For collections on 7 shelves high mobile shelving. +Special Media +Oversized and Artifacts
Collections Processing	1000 NSF	Collections Processing Areas Imaging Lab Archival Supply Storage
Administration/Office(s)	500 NSF	Office/Workstations Support Areas Break Room Meeting Room #(optional)
Isolation/Quarantine Area	100 NSF	
Receiving#	TBD	Loading Dock(s) Dock Office, Storage, and Trash
Net Usable Square Feet	8,130 NSF	
Walls and Circulation @ 9%**	732 NSF	
Building Systems and Support @ 26%	2,304 NSF	Includes central plant, fire & security control rooms, janitor closets, bathrooms, telecommunications, and possible redundant systems per National Archives standard.
Gross Square Feet	**11,166 GSF**	Mobile shelving -7 shelves high

+#There is a range of estimated square footages for each program area discussed in the program narratives. A square footage that is considered practical for the lower level of the Mary Alley building has been assigned in the table for discussion. Optional areas are NOT included in the SF estimates. The Receiving/Loading Dock areas are not included in this estimate.

***** The building footprint could be reduced with higher mobile shelving options. The SF includes space for special media and 3D artifacts.

**Circulation and Support Spaces could be lower depending on economies of planning and systems decisions.

Narrative - Building Spaces

Lobby/Reception: 100-800 NSF

Lobby: 100 – 500 NSF

The lobby is the main transitional point to the research area and the facilities' secure spaces. It is the primary entry into the facility for visitors and also may be the primary entrance for staff.

The lobby is the least secure area of the facility. If the entrance is from the outside it should be through 2 sets of doors separated by a vestibule to provide energy savings and to serve as an airlock to keep out unconditioned air. Visitors may require escorts to other parts of the archival facility.

Visitors should consume all food and beverages at the front of the building. Staff will be permitted to prepare or consume food and beverages at the front of the building or in the break room located in or near the office area. Food, its preparation, and trash should be kept out of and at the greatest distance from archival storage, and other areas where collections are used or processed.

The lobby area should provide:

- Security/Reception desk (Can also serve as the registration desk for the research room)
- Small seating area for staff and visitors
- Wall space/floor space for area for announcements and information brochures
- Public restroom

The lobby may also provide space for:

- Visitor Center/Gift Shop
- Exhibit area (floor and/or wall space)
- Multi-purpose meeting room
- Researcher lockers (depending on final design and adjacencies)

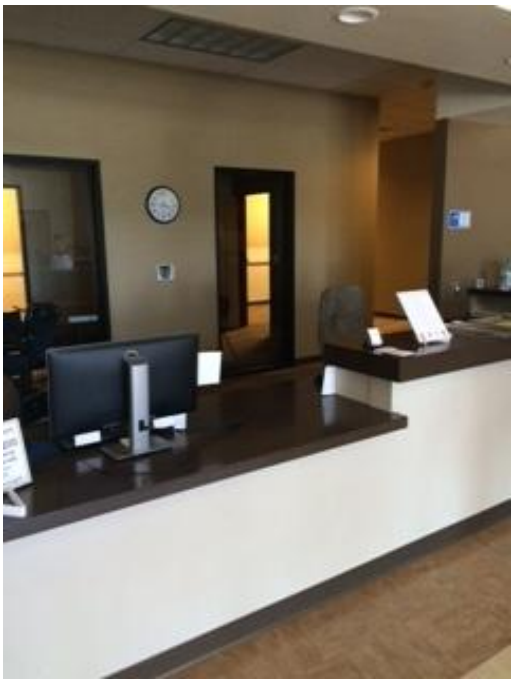
Security/Reception Desk with small seating area: 130 – 200 NSF

The lobby should have a security desk. Depending on the operations and management of the facility, this could be manned as needed by security personnel or by a staff receptionist/volunteer.

The desk could have security devices such as a panic button to be used in emergencies, closed-circuit television monitors, and camera/scanning equipment linked to other areas of the building.

Depending on security procedures, visitors could be asked to sign in and obtain a visitor's badge at the security desk. See the security requirements in Section 5.

Depending on the facility's design and operational requirements, this desk could also serve as the registration area for researchers as described in "Research Area." It could also be used by staff for processing and data entry work.



Example: Security/Reception/Work area

Exhibit Area: 100 – 500 NSF

Exhibit areas in archival facilities are important for displaying the relevant historical content of the collections. Exhibits generate visits and educate the public. Further discussion is needed to determine how much space is appropriate for this facility. Depending on the design of the facility, there may be opportunities for display cases, wall mounted exhibits, etc.

Example: Accessible Exhibit Cases

Example: Exhibit Area

Moveable Exhibit Display Panels

Visitor Service Center: 25-50 NSF

The Town may want to consider a visitor service/gift shop area to display informational pamphlets and brochures and to display materials related to the collections that are available for sale in Historical Commission Gift Shop. This does not need to be staffed but could be monitored by the

security/reception desk. Free materials could be openly displayed and merchandise displayed in locked cases.

Example: Exhibit or Sale Display Cases

Multi-purpose Meeting Room: 600 NSF

Depending on the layout of the building, a multi-use meeting can be located within or adjacent to the lobby area to be used for staff/volunteer/friends' meetings, group consultations, presentations, training, and other potential non-staff functions. This room could also be available for other town meetings.

This room also could be located in the Archives office area.

A room of 600 SF seats 20 people conference-style and 16 people for training.
Special Considerations:

- Stacking chairs and module and foldable tables
- Dimmable lighting
- Audiovisual capabilities
- Whiteboard
- Wi-Fi

Research Center: 600 – 1200 NSF

The Research Center is a secure area used by the public to review the collections in the archives facility. It should be located close to the lobby and be furnished and equipped to provide researchers with a welcoming space for research and to provide staff with the necessary spaces to provide assistance, deliver records, and insure the security of the collections.

After storing their belongings in lockers outside the research room, researchers will register, be briefed on archives' rules, make requests for records, review paper and computer finding aids and reference materials, check computers for digital records, and consult with staff on their research.

The core of the research area is a monitored research room that is used by patrons to review records that have been retrieved from the collection storage area(s). It consists of desks for reviewing paper and oversized documents and an area for audio-visual research.

From a central desk or workstation, staff monitors the room and ensure that records are properly handled and not removed from the room. Researchers can receive assistance with questions and make duplication requests at the staffed central desk. Depending on the Archives' duplication policies, staff serviced or monitored duplication can also take place at the central desk.

If needed, a secure copying area for staff use can be located at or adjacent to the central desk, or in another secure room in the facility. If space permits, the staff copy area can also serve as a secure refile/holding that is used to store records for delivery to the research room or until they can be returned to the records storage area.

The Research Area may include:

- Lockers –adjacent to the research room (could also be located in the lobby)
- Research room
  - Registration/Consultation
  - Finding Aids/Public Computers/Reference Library shelving
  - Central Desk
  - Research Duplication area
  - Researcher seating
- Copying area – depending on duplication policies, can be located adjacent to central desk or in refile/hold room or in the processing or imaging lab (depending on operation and policies)
- Refile/Holding Area – adjacent to collection storage areas and near the copy area

Locker Area: Estimated 50 - 100 NSF

Lockers are necessary for researcher belongings. As a security measure, researchers are not allowed to bring their coats, hats, briefcases, purses, backpacks, or personal belongings into the research room. Lockers must be located adjacent to the research room.

Provide 9 lockers for researchers to store their belongings during a visit to the archives. The lockers should be large enough to hold coats and oversized belongings. Consider providing at least 2 oversized lockers for travelling researchers with luggage. Archives and museums often use coin return or digital lock lockers (like hotel safes), which allow for self-service and provide an incentive for users to remove all their belongings from the locker. Staff are not required to hand out keys or receipts.

If space permits, provide:

- 9 lockers
- Bench
- Flat counter or table for organizing belongings.
- Trash receptacles
- Bulletin Board
- Wi-Fi

Example: Research Center Lockers

Example: Research Center Lockers

Registration/Consultation/Reference Library: 100-300 NSF

This is the first checkpoint for the research area. Patrons register and are briefed on the rules, consult paper and computer finding aids, and consult with staff on individual research requirements. This area should also contain at least one public computer that can be used for online registration and to request records and to consult finding aids and digital records. The computer also can be used to show orientation materials to new researchers.

Provide:

- Registration/consultation workstation (75 SF)
    - Depending on space considerations, this workstation can be used as the security/reception desk or be combined with the Central Desk operation.
- Shelving for reference library materials (TBD)
- 1 public computers with Internet access to assist researchers with registration, locating records, or viewing digital records. (40 SF)

Research Room: Sized for 8-12 researchers – 500 - 1200 NSF

The main research room will be the designated space for viewing archival collections. While security and records preservation are paramount, the room should also be an inviting space with good lighting. This room will serve all types of records, including boxed records, bound volumes and ledgers, photographs, maps, oversized records, microfilm records, audio-visual records, and 3D objects.

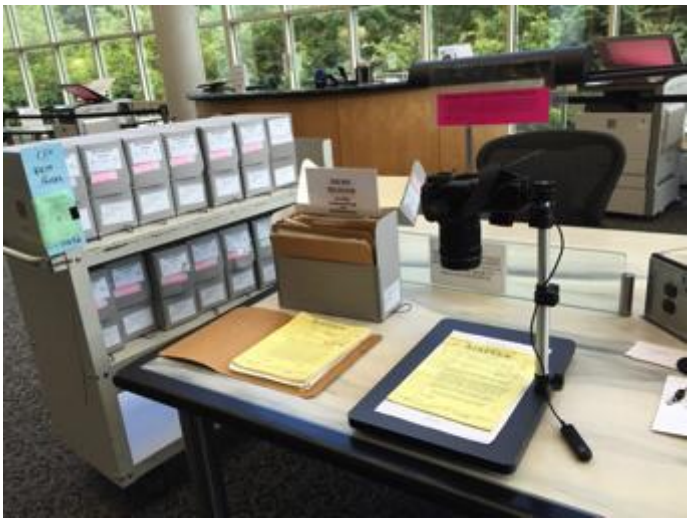
Records are brought to the research room from their location in the records storage area or from the refile/holding area. Records delivered can be one box or volume, or a number of records on a library cart.

There should be enough circulation surrounding the researcher desks to provide each researcher with some privacy while working and to accommodate a cart of records.

See Appendix F for photographs of sample research rooms.

Research Room Tables:

- Can be sized for 1, 2 or 4 researchers depending on the requirements of the Archives.
    - Note: 2 and 4-person tables can provide another level of security as researchers watch each other.
- At a minimum, there should be two 4-person tables that can seat up to 8 researchers. 3 tables are preferred.
- One table should be large enough to be used by 1 researcher viewing oversized maps and drawings.
- At least one table should be ADA compliant for wheelchair height.
- Tables should be a flexible design to reconfigure room as needed.
- There should be space between tables to allow researchers privacy while working.
- Outlets at tables should be available for patrons to plug in their own laptops (and other equipment such as phones and scanners if allowed).
- Task lighting at tables, if needed, must not block sight of central desk staff. Lights must be LED or UV filtered and not exceed recommended light levels for archival research.



Example: Research Room Table

Special Considerations:

- Daylight is desirable but must be UV filtered.
- All lighting should be LED or UV filtered.
- Security – in addition to manned central desk, consider installing research room security cameras.
- Security – all desks should be visible to the central desk and room monitor.
- Double doors - automatic double doors are preferable.
- Wi-Fi.

Microfilm/AV Research:

- Specialized equipment is used to view and copy microfilm and audio-visual records.
- If possible, area should have dimmable lighting.
- Visible to central desk/monitoring staff
- Space can include:
    - Microfilm/fiche reader/printer/scanner workstation
    - Audiovisual workstation with headphones
    - Microfilm/fiche cabinets for duplicate copies
        - Original film must be stored in secure collections storage

Example: Research Room with 4-top Tables and Central desk. Example is larger than needed for Marblehead.

Research Room Central Desk: 75-150 NSF - sized for 1 staff member

The central desk is the staff-operated reference desk centrally located in the room so that the staff monitor has a clear sight line to all areas where researchers are using archival materials. The central desk should have few or no visual barriers between the staff and the research room. It should have circulation space around it to accommodate patrons asking questions and for a few carts holding records for immediate use by researchers. See Appendix F for photographs of sample research room central desks.

In smaller archives, the central desk is also a staff workstation. It can serve multiple functions, including patron registration, consultation, and records requests, circulation and duplication.

A photocopier/scanner can be located near the central desk and may be operated by staff or researchers depending on duplication policies.

Special Considerations:

- Should be sized to accommodate 1 employee, with a computer terminal, workspace, and storage space.
- Room for small scanner/printer.

- Should have a central alarm that links it to security. It may include closed circuit television monitors depending on security operations.
- Consider locating on an elevated platform to provide staff a clear view of researchers in all monitored rooms.
    - Elevated platform should be a minimum of 6”
- Must comply with ADA regulations. If elevated, the central desktop should have two levels, with one level at wheelchair height.
- Locate in area of room with best sight lines for monitoring.

Copying Area: Scanners & Photocopiers: 100 NSF

Copying policies are changing in archival research rooms as researchers more frequently request scanned copies or permission to take photos with their cell phones.

Depending on operations, the research room staff may elect to handle all duplication requests for both paper and scanned copies. A small scanner/printer should be located at the central desk in the research room for small orders. Researchers may bring their own scanners but normally use them in the central desk area with staff supervision.

All other copying and duplication for researchers and staff may be completed in the staff-only copy area located adjacent to the research area, within a processing room, or in the imaging lab.

Special Considerations:

- Copier and scanner/printer equipment[4]
- Shelving
- Trash and recycle bins
- Room for carts
- Located adjacent to the research area
- Appropriate ventilation for equipment
- Automatic double doors

Refile/Holding Area: 100 – 300 NSF

This secure space serves as hold/staging area for records ordered in advance or that need to be stored overnight during a researcher’s extended visit and for records that need to be refiled or re-shelved in the stacks. Records are on carts or are in individual boxes, files or volumes stored on shelves in the holding area. This room holds copy supply materials. It can also serve as the secure copy room.

Special Considerations:

- Same security as collections storage areas and processing. It is a secure holding space only accessible to archives staff. It must be a separate room that is secure from the outside corridor and locked at night.

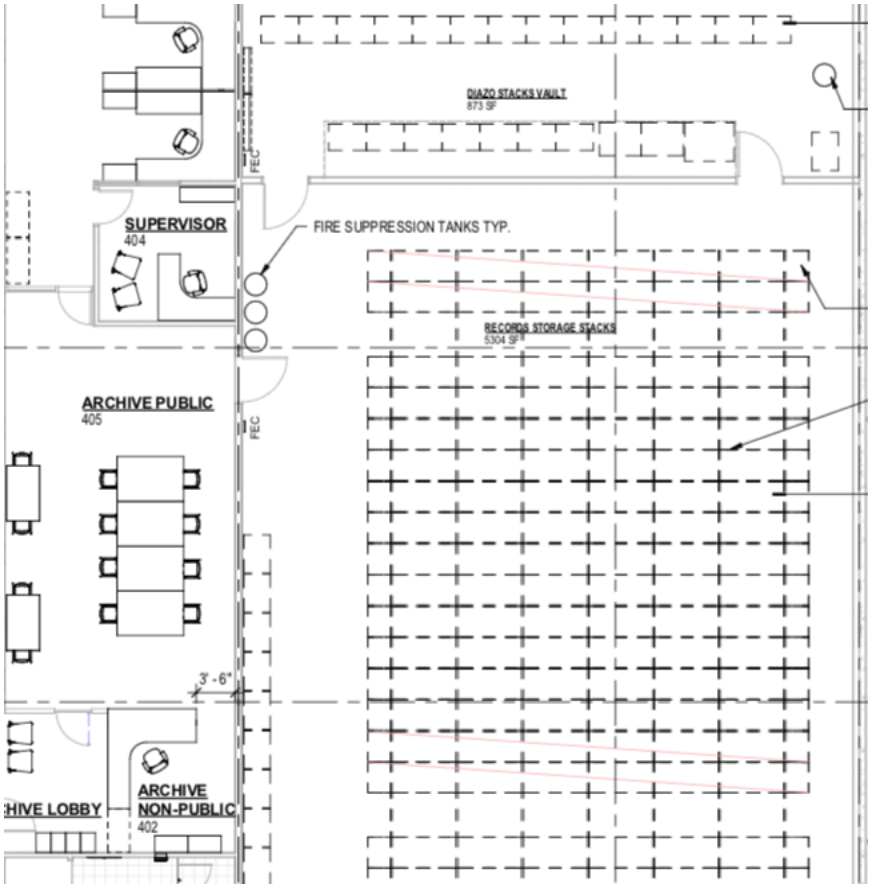
[4] The Advisory Committee agreed to scan books externally, which eliminates the need for a book cradle scanner. Researcher requests for book scans can be handled by policy – Example: if the book is in good shape it can be scanned on a flat bed. If it is fragile, allow the researcher to take a photo with their phone.

- Double doors for easy cart access - automatic double doors are preferable.
- Provide shelving for individual boxes/volumes that are not transported via cart and for supplies. It can be wall mounted shelving that is high enough off the floor for carts to be parked underneath the shelves.
- Provide 1 large table for organizing requests, collating documents, and administrative tasks.
- Locate adjacent to Research Center and/or collections storage.
- Locate near the copy area (if separate room).

Example: Combined Hold/Refile/Reproduction Room

Concept for a combined Lobby/Research Room/Administrative Offices – approx. 2,000 SF

Below is a concept of an entrance to an Archives with lockers and reception/security workstation that can monitor the Research Room and also serves as a staff workstation, with entry to the research room. On the other side of the Research room are staff offices and workstations. The first staff office, can also view the Research Room thru a glass partition. This concept also shows some collection storage. It does not show processing rooms located below the collections' storage. It does not include a copy or hold area. **This is not meant to be a proposed design or convey size. It is a concept for discussion.**



Collections Processing Area(s): 800 - 1500

The processing area(s) provides secure separate workspaces from the collections storage and office areas. Staff and volunteers can work individually or in groups to examine, sort, arrange, describe, rehouse, and digitize archival materials. Basic preservation tasks such as rehousing, removal of paper clips, simple mending and encapsulation can be performed in the processing area(s).

Textual and Special Media Processing Room(s): 600 – 1000 NSF

The processing area should be a flexible space that can be rearranged depending on project size and complexity, and that is easily adapted for processing needs. Processing areas typically include moveable and adjustable height tables, shelving for the temporary storage of collections, and a large number of widely spaced electrical outlets. See Appendix G for examples of processing rooms.

Space should be adequate for up to 6 people to process collections.

Furniture includes:

- Moveable and adjustable height tables
- Shelving for records and supplies
- File cabinets
- 4-6 Computer workstations

- Trash and recycle bins
- Scanner/printer and copier equipment with tables or counters
- Special Media processing has equipment for special format materials
    - Example: light tables, CD player, Microfilm reader, etc.

Special Considerations:

- Secure room - same security as collections storage areas
- Automatic double doors are desirable for moving oversized materials
- Environmental conditions should match or closely approximate records storage areas
- Separate air handling systems from records storage areas (if possible)
- Appropriate electrical power and outlets
- Materials and finishes equal to archival storage standards
- LED or UV filtering for lights
    - Dimmable lighting if all processing takes place in one room
    - Task lighting
- Prefer no windows; UV filter indirect daylight
- Wi-Fi
- Room for carts

Imaging Lab Area: 200 – 500 NSF

The Imaging Lab provides space for staff to reproduce records for preservation and researcher access. Digital imaging has largely supplanted micrographics for duplication of archival records. Having an imaging lab in the facility will eliminate the need to transfer large collections to a contractor. Imaging services include:

- Make records accessible in digital format
- Fulfill requests for copies of records
- Prepare reference copies of records for frequently used records or those in fragile condition
- Create facsimiles for exhibits

This lab area should accommodate 2 people and should be sized for digitizing/scanning equipment. The lab will include at least 1 flatbed scanner and an oversize roll scanner currently being used by the Town Engineer.[5] It will also include a fixed photography station to image large flat items and to catalog images of 3D objects.[6] There is a microform reader/printer/scanner located in the research room that also can be used by staff for outside imaging requests.

Furniture includes:

- Digital/scanning workstation – ranges in size from 100 SF to 300 SF
- Moveable tables
- Shelving for short term storage of records and supplies
- Room for a cart of records

[5] The Archives Advisory Committee agreed that book scanning would be done externally, perhaps by the Boston Public Library or the Digital Commonwealth.

[6] There are now hand-held scanners that scan 3D objects and that can be considered in leu of a photography station.

Special Considerations:

- Can be a workstation within processing area or a separate room
- Secure room - same security as collections storage areas
- Environmental conditions should match or closely approximate collections storage areas
- Separate air handling systems from collections storage areas (if possible)
- Appropriate electrical power and outlets for equipment
- Materials and finishes equal to archival storage standards
- If a separate room, paint a standard neutral gray color that is formatted to have a flat spectral response without any color bias, per ISO 3664:2009[7]
- LED or UV filtering for lights
    - Dimmable lighting if all processing takes place in one room
    - Task lighting
- Prefer no windows; UV filter indirect daylight
- Wi-Fi
- Room for carts

Sample digital imaging equipment

[7] 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 records as possible.

Example: Imaging Workstation

Conservation Laboratory: 0 NSF
A dedicated Conservation Laboratory is not being considered for this project. Items needing complex conservation will be sent to a certified laboratory. Basic in-house conservation will take place in the processing area(s).

Archival and Disaster Supply Storage: 50 – 100 NSF

There should be an archival supply storage room that provides secure space for storing additional boxes, containers, folders, carts, and processing supplies. This room should have open shelving large enough to store supplies and floor space to store large boxes of paper/box supplies.

This area can also house the supplies needed for disaster preparedness. Backup emergency supplies should be stored on-site so that staff can respond quickly during an emergency to limit damage to collections. Alternatively the disaster supplies can be in a separate closet or cabinet.

These area(s) can be included as an area with the processing spaces. It can also be included as part of the general storage area of the facility, although it is preferable to be able to lock up the archival processing supplies.

Emergency supplies to be stored include:

- Plastic sheeting/tarps
- Plastic bags
- Plastic milk crates (to temporarily store and move wet records)
- Foam padding
- Trash bags
- Absorbent pads and paper
- Paper towels
- Mops, buckets, large brooms, sponges
- Flashlights and batteries

- Protective aprons and hard hats
- Waterproof gloves, dust masks, goggles
- First Aid Kit
- Clipboards, pencils, scissors
- Other supplies to consider include:
    - Fans
    - Vacuum(s)
    - Dehumidifier(s)
    - Rubber boots

Special Considerations:

- Secure room – same security as collection storage areas
- Desirable to have automatic double doors wide enough for moving materials
- Open floor space for storage of archives boxes and supplies
- Shelving for supplies
- Dedicated area for disaster preparedness supplies

Collections Storage: 8,510 SF

The most important preservation measure for archival materials is to provide the best possible storage conditions. Ideally, records should be stored according to their media type and the environmental conditions recommended for each kind of record. Based on fixed shelving that is 90" high, the Marblehead shared facility should plan for 8,510 square feet of collections storage in a new archives facility.

Section 5 details the archival standards for collections storage. Special considerations include:

- No windows
- Floor load designed for shelving equipment or heavy collections
- Temperature, relative humidity and air filtration requirements
- Materials and finishes
- Fire protection
- Security
- Lighting

Controlling access to collections storage areas and restricting them to the storage of records further aids in the preservation of archival materials. Collections storage areas must only be used for the storage of collections. Staff work areas must be located outside the storage rooms to reduce fluctuations in climate conditions and pollutants. The collections will include a variety of other records of varying sizes and media types. The collections will be stored on standard sized and oversized shelves, in flat files and cabinets, and on art racks. See Appendix H for photos of records storage areas and shelving.

Collections that need to be stored include:

<u>Textual records</u>

- Requires largest amount of archival storage in the facility.
- Records in boxes – uniform-sized shelving for boxes.

- Volumes/Ledgers of various sizes – large/fragile volumes should be stored horizontally and require extra shelving.

Oversized textual records and prints

- Requires different sized shelving.
- Can be stored in the same area as textual records.
- Includes collections in flat files.
- Rolled drawings require oversized shelves.

Special Media Records

- Black and white photographic prints and film, magnetic tapes, glass plates, DVD, etc.
- Different sizes of materials.
- Generally, requires cooler storage conditions than textual records, but may opt to store in one storage room with selected environmental systems that serve both paper and special media records. The selection of the site and facility HVAC systems may impact this decision.

Color Photographic Prints, Slides and Film

- Color photographic materials are currently stored with black and white film.
- Color film collections should be stored in cold conditions. They can be stored in prefabricated cold storage unites (freezers) located with the general collections storage area.

Textiles

- Requires oversized shelving for textile boxes.

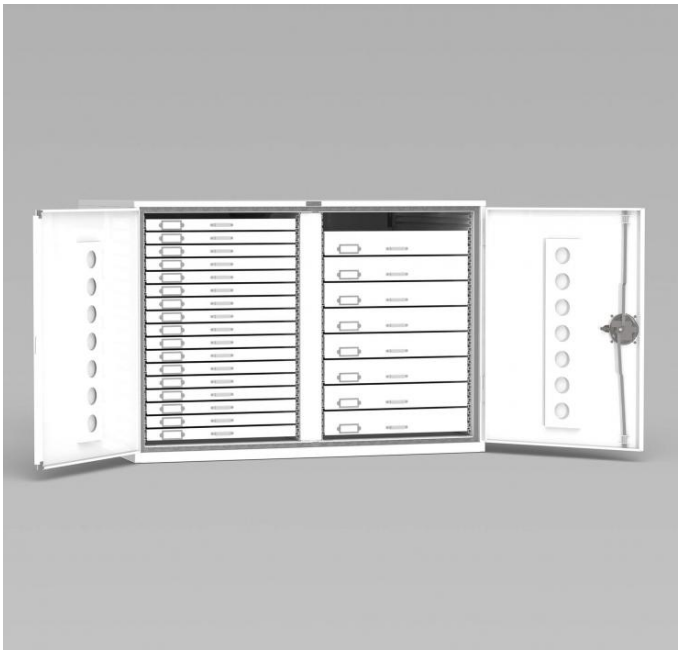
Framed Art and Photographs

- Requires framed storage - art bins or wall-mounted art racks.
- Marblehead is not considering mobile art racks at this time.

Artifacts

- Storage for objects and 3D artifacts in boxes, on open shelving, in drawers and in lockable cabinets.

Example: Artifacts/3D Storage on pallet style fixed or mobile shelving



Example: Museum Cabinet

<u>High Security Vault Storage:</u> TBD

The Marblehead archival facility may require a secure "vault" for its most valuable and rare collections. Archival vaults typically include:

- steel vault door and state-of-the-art vault locks. Locks can range from mechanical combination locks to digital electronic locks that can include fingerprint readers, remote locking and RFID technology.
- Controlled access.
- Fire Suppression should be a clean agent system; a wet-pipe sprinkler system can be considered as a back-up or secondary system.[8]
- An additional security solution for high value or confidential records can be achieved using electric powered mobile shelving. Individual shelving modules can be locked and accessed using the facility's security access system (ex. card readers) or a more restrictive security access system that is designed for specific shelving modules.

Example: High Security Vault

[8] Clean agent fire suppression systems are also referred to as gaseous fire suppression. They use inert gases and chemical agents to extinguish a fire. See NFPA #2001, *Standard on Clean Agent Fire Extinguishing Systems.*

Administration/Office Area: 275 - 750

The staff for the Marblehead archives facility is estimated to be 2 staff with additional part-time professional, volunteer or intern staff. The facility staff requirements are based on a projected staff of 2 employees, a full time Archives Director and an assistant archivist (possibly part-time). This preliminary program is planned for 6 trained volunteers.

The nature of archival work requires the staff to work in other areas of the building, such as in the processing area and the imaging lab. However, Marblehead may want to consider providing a separate office area for administrative work, telephone calls, meetings, files, supplies and eating/drinking at a desk.

Staff working in areas with archival collections should not be permitted to eat at in areas housing collections and must eat in a provided break room or separate space.

Depending on the layout, a conference/meeting room can be located in or adjacent to the Archives office area.

Office: 275 – 425 NSF

- Archivist - 1 private office @ 100-150 SF
- Staff Workstation – 1 workstation @ 75 SF
- Shared workstations: 2 for visiting staff, interns, and volunteers @ 50 SF = 100 SF
    - Interns and volunteers will primarily work in the processing area(s) and the imaging lab.
- Support area for printing, scanning, faxing, office supplies and file storage – 50 -100 SF

Project/Meeting Room: 200 NSF

If there is not another conference or meeting room available in the facility, one should be planned for the archives. This room can be shared with others in the building.

- Sized for 8 people
- Conference table and chairs
- Whiteboard
- AV capabilities

Break Room: 120 SF (for 6 people)

A staff lounge should not be located near storage, processing and digital lab areas. Staff working in areas with archival collections should not be permitted to eat at their desks and must eat in a provided break room or separate office.

The break room in the Mary Alley building can be shared with other Town departments and could be designed for all the tenants.

Break Room furniture and equipment includes:

- Table and chairs
- Counters and storage
- Sink
- Refrigerator
- Microwave

Receiving Area: TBD

The Archives will share the loading dock with other Mary Alley Building tenants.

It is desirable for the receiving area to provide a secure environment for receiving and inspecting archival materials and for deliveries of non-archival materials into the building. It should also contain areas for trash, storage of building supplies, and other building maintenance equipment. Trash and recycle should be segregated from archival storage and processing areas.

Archival records moving through the receiving area must be protected from theft and unauthorized access, inclement weather, pests, and accidental disposal.

Special considerations include:

- Covered loading dock – may be an exterior dock with weather protection at Mary Alley
- Covered concrete platform
- Covers or canopies over the platform that extend out at least 4 feet
- Sloped rap that drains to prevent water pooling or water migration in the building
- Negative air pressure in relation to adjacent spaces
- Separate air handling system, vented to the outside
- Secure doors
- Security cameras or other monitoring equipment
- Doorbell, intercom or phone to alert staff to deliveries
- Brush sweeps to keep out insects, vermin, dust, etc.
- Bird netting
- Dock leveler to accommodate different height trucks

Covered Loading Dock(s): 700 - 850 NSF per covered dock;

Loading docks are heavily used in archival facilities and special care should be taken to design them so that the records are secure and protected. The covered dock will shelter the records during unloading.

An enclosed dock may also be considered. Enclosed docks are not as common but are used when climate control, records protection, security and overhead lift capabilities are required.

If space allows, archival facilities often contain two loading docks: a records dock and a service dock. With one loading dock at Mary Alley, it would be helpful to provide clearly marked designated areas and pathways that separate records from non-archival material deliveries.

Receiving Office, Storage and Trash: TBD

Additional spaces in the receiving area that may be shared with others in the building include:

- Receiving workstation and/or office
    - Space for a registrar area to log in and assess incoming archival materials
    - Depending on building operations and staffing this can be one computer workstation or include space for the facilities management staff. (50-200 SF)
    - Wi-Fi

- Building supplies and janitorial storage – for storage of building equipment, extra furniture, shelving, etc. Should be accessed through the service dock. (400-600 SF)
- Trash/recycle room - segregated from archival records (100-200 SF)
- Freight elevator(s) if multi-story building – accessible to records receiving area

Isolation Room: 50 – 300 NSF

The isolation area or room is used to quarantine records that need treatment before entering the archival facility. Any incoming records that are contaminated with mold spores, insects, or other vermin must be isolated and treated separately from all other records. Generally, the contaminated records are freeze-dried to de-infest the records in a clean, safe manner.

The isolation room has the same security and finishes specifications collections storage. It should be located adjacent to the loading dock and receiving area, have its own secure entrance and air handling system, and must be separate from all other collections areas.

The alternative is to supply a freezer or freeze/dryer off the loading dock for smaller sized treatments.

Furniture includes:

- Shelving
- Adjustable height moveable tables
- Trash and recycle bins
- Freezer for freeze-drying records

Special Considerations:

- Secure room – same security as record storage areas
- Automatic double doors wide enough for pallets of records
- Open space for pallets of records
- Sink
- Floor drain
- No windows
- Fire protection similar to stack areas
- Separate air handling system from records storage areas
- Insulation to prevent migration of pests and mold
- Safety shower
- Wi-Fi

Example: Large Capacity Isolation Room with fumigation equipment

Example: Smaller Freeze-Drying Equipment on loading dock

Telecommunications

The facility must have networked ethernet for the staff as well as wireless access (Wi-Fi) for the staff and visitors via wireless access points (WAP) and cellular voice coverage for the entire building. Access is

required in all office areas, meeting rooms, research room, receiving, accessioning and processing areas, imaging lab, records storage areas, and the loading dock.

Due to the rapid changes in technology, consult with information technology (IT) experts to determine the most current technical specifications, including network, hardware and software specifications.

Building Systems and Support: TBD

Building support spaces will be required for the proper functioning of the building.
Spaces may include:

- Central plant – may include redundant systems
- Facilities management spaces (if not a shared facility)
- Janitorial spaces
- Fire control room
- Security room
- Telecommunications
- Restrooms: one bathroom near the Receiving area should have a shower
- Washer/Dryer is desirable to wash dirty gloves, smocks, aprons, cleaning towels, etc.

Parking: TBD

Parking for staff and visitors is desirable.

Section 5 Archival Facility Design Standards

An archival facility for the Town of Marblehead should be designed to meet recognized archival facility standards. Whether a new building or a renovation to an existing building, the technical criteria for the design of an archival facility is based on the archival facility standards and guidelines established by the Society of American Archivists (SAA), The National Archives and Records Administration (NARA), and international standards in combination with best industry practices and the past experiences of the archival facility consultant.

This report draws from the standards and codes for archival facilities in the United States that are cited in Appendix C. These standards include extensive bibliographies that cite the specialized standards and codes that relate to archival facilities. We encourage everyone working on the Marblehead archives project to familiarize themselves with these standards and the requirements for an archival facility.

This section summarizes the design standards for an archival facility. All criteria may not applicable to the Marblehead Archives facility located in the Mary Alley Building but all critieria is included to educate the planners on archival facility requirements. After determining the location within Mary Alley and its final requirements, these standards will be adapted to meet the project's scope and size.

Sustainability

At the beginning of the design phase, the architects should identify appropriate measures that support the Town's sustainability objectives. With green building action plans, many archival facilities are reducing their environmental footprint through sustainable operations and practices including energy efficient building design and construction, and operations.

If a particular sustainability goal runs contrary to an archival design guideline or standard, priority should be given to adhering to the archival design standards. The designers should identify alternative approaches that will achieve the sustainability project goals without negatively impacting the archival functions of the project.

Landscape

An archival facility site should be designed for water control, integrated pest management, and low maintenance. General requirements for the landscape design include:

- Omit vegetation within 18 inches of the exterior wall.
- Vegetation free zone must be sloped away from the foundation and consist of gravel or decorative aggregate with appropriate drainage.
- Trees and shrubs should not obstruct pedestrian lighting.
    - Include under story plants no higher than 3 feet.
    - Include a tree canopy with limbs at least 7 feet above the ground.
    - Maintain a minimum of 15 feet between building and the drip-line of trees at full maturity.
- Omit pools, fountains and their related equipment.
    - If pools or fountains are present, additional protection must be taken. Locate a minimum of 75 feet from the facility and 10 feet below the lowest level where archival collections are stored.

Site

General Requirements

The facility will be located in Marblehead, Massachusetts at the Mary Alley Building site. Driving factors in site selection include location, cost, and availability. In Marblehead and surrounding areas, it is particularly important to select a site that is not liable to subsidence or flooding, whether from a natural or man-made source. The entire site and ancillary structures on the site should be a minimum of 5 feet above and 100 feet away from any 100-year floodplain area.

Many of the dangers that threaten an archival facility can be avoided by careful site selection and site development. In addition to location, cost, and availability, the site selection must consider other potential risks, including the threats of:

- Flooding from natural sources or water mains, a major concern in the Marblehead area.
- Natural disasters, such as earthquakes, landslides, etc.
- Vandalism, terrorism, and intrusion.
- Fire and explosions.
- Hazardous locations or materials.
- Ground and air pollution.
- Rodents and insects.

Specific criteria for site selection for the off-site archival facility include:

- Located within short response time for emergency services.
- Allows for quick evacuation.
- Protected from dangers from neighboring spaces and buildings.
- Accessible to related agencies and to other cultural and institutions.
- Accessible to visitors.
- Accessible by main roads and public transportation.
- Adequate parking for staff and visitors.

Site Size

The site for an archives facility must be large enough to accommodate:

- Proposed building footprint (if new construction).
- Future expansion.
- Site access and service roads.
    - Roads, fire lanes and parking areas should be designed to permit unrestricted access for emergency vehicles.
- Sufficient parking.
- Space for storm water management.
- Separation between drop off areas, parking, loading and the building.
- Turning radii for large delivery and trash vehicles.

Site Evaluation
Include in the site evaluations a site survey and consider the adequacy of the site using the above listed criteria. Also complete a geotechnical investigation and a security risk assessment. If needed, conduct an archeological assessment.

Special Utility Requirements

The water supply, sewer, and storm drainage systems should all be readily available and meet the requirements outlined by codes and archival facility standards. The primary electric power from the network to the building must run underground in conduit. All conduits for the primary power must have at least 50% spare conduit capacity. Consideration should be given to a redundant primary feeder.

Structure

Archival facilities must be designed with long life expectancies. Structural systems must be designed with a high level of durability and longevity. Selection of the structural systems will be determined after site selection and during design. Proper slab and floor loads are based on the storage and shelving requirements. Collections storage areas may require long spans with column free zones.

Archival storage spaces may include shelving that ranges from low density fixed shelving to high-density mobile shelving. Slabs and floor loads must be sized to withstand the heavy loads of the shelving and archival materials. Typical open stack floor loads are 150 pounds per square foot. Mobile shelving system floor loads can range between 250 and 350 pounds per square foot depending on the height of the shelving. Slabs with moving shelving units need to meet more stringent flatness and level specifications than other parts of the building.

Mobile shelving rails can be recessed or top-mounted onto concrete floors. Floors are leveled so that ladders, carts, and lifts can move easily within the mobile shelving system. Facilities without concrete floors require the installation of top mounted rails with a raised floor and ramping for access and may not have the necessary floor load for lifts.

Exterior

The Marblehead archival facility should be constructed of long-lasting materials that are economical to build and easily maintained. Should an existing building be selected that requires a partial or complete retrofit, the additions should be complimentary and coordinated with the site and any adjacent uses.

The external building materials for an archives facility should ensure the permanence of the collections and meet the storage and operational demands of the building. Materials must be durable, provide appropriate protection from fire, heat, cold, humidity and moisture, be easy to maintain and keep clean, and meet the facility's program requirements. Whenever possible, the external building materials should be limited to those known to be stable and inert, and that will minimize the emission of harmful substances such as smoke and soot in the event of a fire. Particular attention should be paid to insulation, adhesives, epoxy materials and caulks. All exposed concrete walls and slabs, including spaces beneath raised floor systems, should be sealed or coated to prevent moisture migration and dust. Internal building materials must be selected with care.

The exterior design should contain the following key features:

- Wall and insulation systems should be optimized to minimize air infiltration and be designed in conjunction with an energy analysis to provide energy efficiency and temperature stability.
- The vapor barrier and insulation system must maintain the individual climate requirements in the collections storage areas without producing condensation.
- Must use building materials that reduce the off-gassing of volatile organic compounds (VOC's), especially for the materials that are used in the collections storage areas.
- Formaldehyde-based insulation and foam in place insulation are not acceptable for collections storage, processing, and laboratories.
- All exposed concrete slabs should be sealed or coated to prevent moisture migration and dust.
- The roofing system must be designed so that roofing penetrations over the archival areas are minimized and roof drains do not run over or through archival spaces.
- Equipment should not be placed on the roof, especially over collections storage, processing, and laboratory areas.
- Expansion capabilities should be incorporated into the design of the collections storage areas.

Interiors

The interior construction should include the following features:

- Storage areas require low VOC content and their floors should be constructed of hard, durable material such as concrete using low VOC sealers.
- Other special spaces such as processing rooms, the isolation area, and the imaging lab should have finishes conducive to the function, such as low VOC and easy to clean flooring, walls and ceilings.
- In general, office spaces and the research room should have low pile carpet flooring and painted walls.
- Loading dock areas should have sealed concrete floors.
- Windows and lights in any areas where collections are stored, processed, viewed, or displayed must be UV filtered. LED lighting should be considered for these areas. Blinds or shades control sunlight and assist with temperature control.
- Doorways for all collections storage and work areas ideally should be automatic and wide enough for moving pallets.
- Hallway flooring should be constructed of hard, durable material that is easy to clean and conducive to the transporting collections on pallets and on carts. Hallways should not have carpet.
- Hallways should be wide enough to accommodate the movement of pallets.
- There should be guardrail or protective material on hallway walls to prevent damage to the walls from carts and/or pallets.

Materials and Finishes

Archival storage and work areas should be designed with materials and finishes that minimize the off gassing of volatile organic compounds (VOC) and other chemicals that can contaminate the air and degrade the collections. Materials that contain biological contaminants or might invite mold must be avoided in collections storage, collections processing, records holding and lab areas. All materials and finishes used in archival facilities must meet the requirements of the building life safety and fire codes.

Furthermore, because archival facilities are usually constructed for a long life, the materials and finishes selected should be of the highest quality and extremely durable.

Certain materials must be prohibited from collections storage. Prohibited materials should also be avoided in processing, records holding, and the imaging lab. Materials and finishes deemed "prohibited" have been identified by conservators, chemists and archivists as such because of their deleterious properties that are known to rapidly degrade records. Prohibited materials include asbestos, formaldehyde, PVC, and adhesives. Appendix E provides a newly revised draft list of prohibited materials for archival facilities.

The collections storage areas should have the highest level of cleanliness and the best environmental conditions in the archival facility. Stacks or collections storage rooms must be limited to the storage of the archival collections. Consequently, they should contain only the components necessary to house and store the collections. Equipment typically used in collections storage rooms include shelving; cabinets; boxes or containers housing the collections; and the carts and ladders used to move and transport records and collections materials. Staff workstations, copiers, excess equipment and unnecessary furniture must never be located in collections storage areas.

Detailed information on the appropriate materials and finishes for archival facilities can be found in the published SAA and NARA standards for archival facilities. Refer to section 4 for specifications for neutral color finishes for the Imaging Lab.

Plumbing

The design of the plumbing systems should ensure that no roof drains, storm drainage piping, sanitary drainage piping, or natural gas distribution or vent piping is located above or within spaces containing archival collections.

Heating, Ventilating, & Air Conditioning Systems (HVAC)

The mechanical systems for an archival facility should provide a clean, comfortable, and healthy environment for the occupants and ensure the preservation of the collections.

Maintaining an effective preservation environment for archival collections depends on the building's basic architectural design (e.g., windows, vapor retardants), use of appropriate building materials, and the building's operation (e.g., hours of operation, availability of tempering sources). Appropriate and robust temperature, relative humidity, and air filtration systems are critical to protecting the collections and offering a safe and healthy environment for the staff and visitors.

The design criteria for HVAC include:

- Collections storage areas should be served from a separate HVAC system.
- Collections storage areas, processing rooms, and labs, must be isolated from sources of pollutants.
- The entire building should be under positive air pressure.
- The building envelope should be airtight with air controlled through the mechanical system.
- Mechanical spaces should not be located above or adjacent to records storage areas or special precautions must be taken to avoid water leaks.

- HVAC system redundancy should be considered for archival facilities.
- The HVAC system for collections storage should have flexibility to meet current environmental standards and to adapt to future sustainability initiatives.

Archival Environments: Temperature, Relative Humidity and Air Filtration

All archival materials are subject to deterioration over time due to heat, humidity, harmful particulates, fumes, and frequency of handling. Materials are fragile and subject to biological, chemical and physical damage. It is critical to provide stable and constant levels of temperature and relative humidity (RH) and remove damaging particulates and gases from the air.[9]

There are currently a variety of storage preservation standards and guidelines for archival records. Some of these standards speak to mixed collections while others specify different storage conditions for each type of media. Ongoing research into the effects of environment on these fragile materials continually leads to new information and revised recommendations.

Increasingly archival institutions are seeking the best preservation conditions at the lowest energy costs that use operations and strategies that are sustainable over time. Recent studies have shown that broadening the range of permissible temperature and relative humidity and adjusting them seasonally can reduce energy consumption and, therefore, operating costs. The Image Permanence Institute has developed analytical tools that aid in determining optimal climate management for individual facilities and in finding the best balance between collections preservation, sustainable practices, and energy costs. These should be considered for Marblehead's new facility. [10]

The general conclusion is that large fluctuations in temperature or relative humidity can cause irreversible damage to sensitive records, and that climate conditions must be kept constant. However, the standards for preservation do not necessarily take into account the building and collections storage rooms' design and locations, the building's insulation, materials and finishes, its mechanical and lighting systems, the local climate, and how the materials are used and handled. The goal is the "optimal" preservation environment: the best possible preservation at the least possible energy cost that is sustainable over time. "Optimal" is different for each institution – there is no "one size fits all" solution. The targets and ranges specified for Marblehead's archival storage should be analyzed in conjunction with the location, design, and operations of the new facility.

The following list shows the current consensus of the recommended temperatures and relative humidity for archival records storage and the allowable fluctuations in relative humidity from a set point over a 24-hour period. However, we encourage the staff to discuss the recommended environmental conditions for Marblehead's collections during and after design and plan for adaptable environmental systems.

Temperature and Relative Humidity

[9] Relative humidity is expressed as a percentage and is the ratio of the actual amount of water vapor present in the air at a given temperature to the maximum amount that the air could hold at that temperature.

[10] The Image Permanence Institute is a non-profit, university-based laboratory devoted to preservation research. IPI has provided cultural institutions with significant research, publications, and tools to enable the preservation of image collections and material culture. https://www.imagepermanenceinstitute.org.

Below are the current ranges for archival collections. Additional information can be found in the published archival facility standards.

- Paper records
  60° to 65°F max 35-45% RH +/- 5%

- Black and white, non-acetate photograph and film, microforms, audio tapes and other special media
  50° to 65°F max 35% -45 % RH +/- 5%

- Black and white acetate photographic and film media
  35° to 40°F max 35% RH +/- 5%

- Color Photo and film media
  35°F to 40° F max 35% RH +/- 5%

- Magnetic/electronic media
  46°-65°F 35% RH +/- 5%

- Furniture, Artwork and Textiles
  60° to 65°F max 35-45% RH +/- 5%

- Unstable materials, Composite materials, Animal remains
  50 to 65°F max 15-35% RH +/- 5%

Not all institutions have the capacity to separate their collections into different environmental zones. Collections storage should provide the best conditions for the range of material types in the storage room. Mixed-use storage should strive for cooler and dryer conditions that are practical within the facility's design parameters. Temperatures should not rise above 70°F and the humidity should not rise above 55% RH or drop below 30% RH.

Air Filtration

Particulate and gaseous pollutants are detrimental to archival materials and should be filtered. Filtration is accomplished by introducing filter media into the HVAC system air handler that serves the records storage areas. It is important to note that filtration technology is complex and continues to evolve. Designers must consider the archival facility's location, size, design, and budget when planning an air filtration system for the preservation of archival materials.

Filtration to remove gaseous pollutants from stacks is especially important in dense urban locations. The majority of the gaseous pollutants are emissions from vehicle exhausts, stationary combustion sources, and other pollution-generating sources consisting of unburned hydrocarbons, elemental carbon, ozone, sulphur dioxide, and nitrogen dioxide. Other gaseous pollutants are a result of the off gassing of building construction materials, furniture, carpeting, and the collections themselves. All gaseous pollutants are very damaging to archival collections and when appropriate they should be filtered.

Special filtration systems are required for collections that off gas volatile organic compounds (VOC) such as cellulose nitrate, cellulose acetate microfilm, negatives or film, and some types of paper and plastics. Often these kinds of collections are isolated or stored off site. If collections off-gassing VOCs are stored in an archival facility, the air filtration system must be designed to manage the measured quantities of VOCs produced by these records.

Below are the current filtration standards for particulate and gaseous in archival storage rooms, processing rooms, and labs:

- Particulates: MERV 14 or higher
- Sulfur Dioxide: 1 ppb; 2.7 micrograms per cubic meter
- Nitrogen Dioxide: 2.6 ppb; 5.0 micrograms per cubic meter
- Ozone: 2.0 ppb; 4.0 micrograms per cubic meter
- Formaldehyde: 4.0 ppb; 5.0 micrograms per cubic meter
- Acetic Acid: 4.0 ppb; 10.0 micrograms per cubic meter

Fire Protection

Archival facilities, because of their unique holdings, require a higher level of fire safety than is normally required for commercial buildings. Construction requirements must comply with the Massachusetts Fire Code and the National Fire Protection Association (NFPA) standards for archival facilities. See Appendix C for pertinent codes.

Critical fire safe aspects of the facility must include:

- Adequate and uninterrupted water supply to the site and building.
- Fire detection, fire suppression and fire alarm systems.
- Properly rated and non-combustible construction and roof materials.
- Fire rated doors comparable to fire wall ratings.
- Prevention of fire ignition from building systems, furniture, and finishes.
- Compartmentalized building spaces.
- Prevention of fire migration.

Collections storage areas must have the highest level of fire safety and take into account the high level of content combustibility. The design criteria for collections storage areas include:

- Fire rated walls with no penetrations except required for essential systems; minimum is 2-hour.
- Spray-on fire proofing materials must not be used.
- Fire rated doors.
- Automatic wet-pipe or pre-action sprinkler protection – performance goal is to limit loss to 300 cubic feet maximum per National Archives standard.
- Electric mobile shelving requires wet pipe sprinkler systems with 165° F quick response sprinklers, but consideration should be given to using lower temperature (135° or 155° F) sprinkler heads.
- Electric mobile shelving must have the ability to automatically separate to create minimum 5-inch aisle between each shelving row upon activation of a smoke detector, water flow alarm, or manual alarm.
- Fire Alarm: Automatic fire alarm system should be installed throughout the storage area with manual activation devices, sprinkler flow monitoring, and audible/visible notification.

- Fire Detection: Automatic smoke detection throughout; high-sensitivity smoke detection for collection storage areas.
    - Duct fire detectors in all supply / return ducts of air handling systems with controls at central fire panel.
- Hose Systems: Fire department hose connections located outside of collections storage areas.
- Smoke Exhaust*:* Engineered smoke control system for collections storage areas greater than 500 SF.
- Secure Vault: Prefer a clean agent system; a wet-pipe sprinkler system can be considered as a back-up or secondary system.[11]
- Cold Storage Rooms: Pre-action sprinkler systems or clean agent systems for storage areas below 40°F.
- Dry-pipe systems must only be used for spaces subject to freezing.
- Optional Features include:
    - Gaseous Suppression: Clean agent suppression system in addition to automatic sprinkler protection for "high value" archival storage areas.
    - Water Mist Suppression: High-pressure water mist system in lieu of automatic sprinkler protection for "high value" archival storage areas where exposure to water is significant concern.
    - Low Oxygen System: Potential application for archival storage areas with automatic retrieval systems and limited/no occupancy.

Security

Security measures must be taken in archival facilities to protect the collections from unauthorized access, change, destruction, and other threats. Archival materials must be protected against theft, burglary, vandalism, terrorism, unauthorized alteration, other criminal acts, and casual damage or disturbance caused by inexpert or careless handling.

External Security

- The building perimeter and all parts of the facility must be secure against unauthorized entry and vandalism. If the site layout permits provide:
    - Secure buffer zone around the building.
    - Fences, wall or natural barrier around parking area to limit pedestrian access.
    - Security gates.
- Clear illumination during dark hours.
- Screening area for all delivery vehicles.
- Optional features include:
    - Monitored and recorded video surveillance for the parking area and pedestrian walkways.
    - Emergency power backup for all security lighting fixtures.

Entry Security

Recommended minimum entry security includes:

- Manually inspect all mail and packages received at the facility.
- Provide high security mechanical locks on all doors.

[11] Clean agent fire suppression systems are also referred to as gaseous fire suppression. They use inert gases and chemical agents to extinguish a fire. See NFPA #2001, *Standard on Clean Agent Fire Extinguishing Systems.*

- Provide a dedicated public entrance separated from all collections storage, research rooms, processing and lab areas, and shipping/receiving areas.
- Provide security guard/receptionist(s) to monitor public entrances during public hours.
- Provide an intrusion detection system, covering all doors, windows, and other openings monitored by a Central Monitoring Station.
- Provide individual component battery backup for any electronic security system provided.
- Provide monitored and recorded video surveillance of public entrances.

Optional Features include:

- Electronic screening of all mail and packages received.
- On-site security command center.
- Electronic access control system on select exterior entrance doors.
- Electronic locks and access readers on all exterior doors that are operable from the outside. This will provide the ability to "lock-down" the facility should the need arise.
- Electronic access control system, utilizing a single technology (access card, key fob etc.) on select interior doors.
- Electronic visitor screening (X-ray, magnetometer) at public entrances.
- Emergency generator feed to any security systems provided.

Interior Security

Recommended minimum interior security:

- Visitor control and screening system (sign-in/out log, photo ID check).
- Employee photo ID's to be worn by employees at all times.
- Provide roving Guard patrols during public hours.
- Electronic access control system on interior doors.

Optional features include:

- Paper stick-on self-expiring visitor passes to be worn by visitors at all times.
- Photo ID's for long-term vendor and contractors to be worn at all times when on site.
- Provide roving guard patrols 24/7.
- Video surveillance system (recorded) covering all publicly accessible areas.
- Recorded video surveillance at shipping and receiving areas.

Collections Security

Security and controlled access for the collections storage, processing and lab areas begins externally and continues with layers of security inside the building.

Recommended collections security criteria:

- Doors must be locked, alarmed, and monitored.
- Stacks with high level security or high value items require minimum four-hour fire rating.
- Defined operational procedures that cover staff access to stacks.

Research Room Security

- Single secure entrance for visitors; a second secure entrance can be staff only.
- Lockers, rest rooms and researcher registration located outside the research room.
- Design to provide clear supervision of all researchers by staff.
- Provide at least a 6" elevated platform for the central desk to provide staff a clear view of researchers in all monitored rooms.

- The desk should be of sufficient size to house a closed-circuit television (CCTV) monitoring station (if specified), desktop computer, and telephone.
- The desk should be equipped with a panic alarm button connected to the security station or local police.
- Defined security rules and procedures for access to archival collections.

Electrical

A standby generator for emergency power should be supplied and located above ground. If the generator is located outdoors, it should be housed in a minimum Level 2 weatherproof enclosure. The generator should be sized to provide emergency power to life safety systems including egress lighting, alarm systems, telecom equipment, elevator, fire pump and mechanical service equipment whose failure to function will cause hazard to life or property.

Additionally, the generator may also maintain the HVAC systems for collections storage areas during a power outage. However, a risk management evaluation and analysis of the environmental fluctuations in collections storage rooms without power for a set period may offer the ability to revise the generator capabilities.

Lighting

The design should seek to minimize lighting costs and energy use by providing natural lighting in spaces that will not contain archival holdings such as the lobby, offices (if not records-containing offices), conference rooms, and break room. LED lights are preferred because they are energy efficient and do not require UV filtration.

Records Storage, Receiving, Accessioning, Processing, and Imaging Areas

- No natural lighting through windows, skylights or clerestories. Any indirect light in processing areas must be LED or UV filtered.
- In the case of a renovation, any existing sources of natural light must be completely blocked.
- Lights should be on automatic sensors or occupancy detectors to conserve power and limit light exposure. Depending on design, consider after-hours lighting controls so lights are timed to go off at night and on weekends.
- Large collections storage rooms should be divided into lighting zones.
- Use lighter floor colors to provide better reflection and enhance lower lighting levels.

Research Area

- Natural light can be used if appropriate measures for diffusing and filtering UV and IR radiation are implemented in accordance with the standards for archival facilities.

New Construction versus Adaptive Reuse

The best solution for the Marblehead Archival Facility is a permanent, stand-alone facility that is designed and built to meet the functional requirements for archives storage and preservation. It should reflect best archival practices and optimize operational programs while preserving the records and serving the Town of Marblehead's citizens.

A newly designed, purpose-built facility offers the greatest flexibility and the ability to comply with archival standards and guidelines. However, a well-designed renovation can also meet staff, researcher, and collection needs.

Adaptive reuse of an existing building should include a detailed conditions assessment, a feasibility study, and a test fit drawing/layout to ensure that the building meets the size and programmatic requirements. In particular, the designs of the storage areas are critical. When considering the reuse of an existing building, the planners must consider many factors. These include:

- Roof age and structure
- Original building materials
- Floor load and stiffness (especially if using mobile shelving),
- Ceiling heights
- Ability to mitigate against water intrusions
- Spaces for the necessary mechanical and fire protection equipment
- Future expansion capabilities

Archival buildings should be designed with long life expectancies and include quality and durable materials. Adapting an existing building for archival use can cost more than constructing a new facility.

Consideration of repurposing an existing building for archival use should address the following:

- Suitable to modify to meet the standards for an archival facility.
- Located outside flood plain borders.
- Practical distance from other Town buildings.
- Savings in procurement costs.
- Savings in site development, site servicing, and project administration costs.
- Site administrator and management have experience working with cultural institutions.
- Passive energy capabilities: structure supports energy savings while maintaining environmental conditions for the long-term preservation of archival materials.
- Structure has the necessary floor loads for mobile shelving.
- One-story structure eliminates elevators and increases operational efficiencies.
- High ceilings offer shelving efficiencies.

An archival facility can be developed with new construction or by reusing an existing building. Project participants should look at other archival and collections storage building successes and at best practices as they work through the planning and design process.

Current Site Considerations

On July 26, 2018 the Town Archives Advisory Council decided that the Mary Alley Office Building would be the site of the new Town Archives. The Council:

- Agreed that the Mary Alley Office Building site is our plan for locating the facility, with 3 options:
    - Basement – the lower level, including the School Department office area
    - Construct new top floor – add a second story to the building
    - Construct a new building on the grounds of the site.

Section 6 Recommendations and Next Steps

Recommendations

Marblehead requires an appropriate, permanent archival facility that is designed to archival standards and that meets the functional requirements for archives storage and access. The Town should strive to develop a building that uses efficient storage solutions and that can be adapted for growth and changing environmental standards. As the keeper of Marblehead's history, it is important for the Town to be able to account for all the Town's historical records and to properly preserve and make them accessible to all citizens.

A new or a remodeled town-wide archival facility provides the Town with the best opportunity to address the future preservation of its records. The benefits include:

- Ability to house and manage the current and future archival collections of the Town in appropriately sized and environmentally precise storage spaces.
- Ability to perform processing, preservation, and digital operations to preserve and access the Town's public records and its private organizational collections.
- Appropriate security and conditions for all archival collections.
- Provisions for future expansion of the archival collections.
- Greater operational and maintenance efficiencies for the Town Archives.
- Ability to start an effective records management program and ensure that all archival records can be accessioned on time and in a proper manner.
- Insurance that no archival records are lost because of inadequate storage.

This report concludes that the most efficient and cost-effective plan for Marblehead is to develop a facility that supports archival best practices, advances efficient operations and programs, that preserves the records of the Town, and that serves the citizens of Marblehead. This report estimates that a new Marblehead shared archival facility that stores a selected number of objects and artifacts on 7 shelves high (90" high) fixed shelving requires a **16,083 SF** square foot facility. Marblehead should continue their planning for a shared facility to be located in the Mary Alley Office Building.

Next Steps

<u>Administrative Planning: Development of Policies, Procedures and Agreements:</u>
As noted in the 2017 Marblehead Archives Project Phase I report in Section 8, there are still many facility issues and questions that need to be evaluated and discussed. Agreements, policies, and operational procedures are still in development and may impact the size and requirements of the facility.

Starting with the "Town of Marblehead Archives Facility Principles," the Archival Advisory Committee and the potential partner organizations should begin critical discussions to define the policies and procedures for the new Town Archives, especially those that will impact the size and functional requirements of the facility.

The Advisory Committee, Town staff, and partner organizations, in conjunction with architectural consultants, should continue to visit comparable sized modern archival facilities and their websites to

review best practices and to adapt their successful procedures and operations for the Town's archival facility.

Final policies and procedures should be codified in an Archival Facility Policy Manual approved by the Town Administrator and the Governing Board. There should be a Memorandum of Understanding between the Archival Facility and each participating organization. Issues to consider include:

- Collections Policies
- Operational Policies and Procedures
    - Reference Services
    - Collection Preservation
    - Collection Processing
    - Inventories/Cataloging
    - Online Services
    - Exhibits
    - Loans and Access
    - Building Management
- Staffing
    - The Archives Advisory Committee agreed in July 2018 to begin planning for a full time Archival Director, an assistant archivist, and for a minimum of 6 trained volunteers.

The consultant will prepare a "Facility Organization and Operating Requirements" report that will present recommended policies, procedures, and staffing and outline the remaining open issues to be considered for a fully functional Town Archives.

Final Programming of Requirements:
After review of this Preliminary Requirements report and in conjunction with policy and operational decisions, a follow-up programming phase will be required to reconcile and finalize the building's requirements after final site selection within the Mary Alley Building. The Town and committed organizations should continue their collections assessments and program evaluations to finalize the requirements for the new facility.

This preliminary requirements' report should be used as a starting point and guide in computing and finalizing the plans for the selected location of the Archives at the Mary Alley Building site.

The consultant will continue to assist in refining the facility requirements outlined in this report in conjunction with the Advisory Committee, committed community organizations, and the site evaluations.

Facility information still required includes:

- Final requirements for the functional spaces of facility, outside of collections storage, including:
    - Lobby/Reception
    - Exhibits
    - Multi-purpose Room
    - Research Room
    - Processing areas
    - Imaging Lab
    - Conference room(s)

    - Office/Administration
    - Break Room
    - Receiving
- Collections that will be located at the shared facility.
    - This can be finalized after the development of the Collections Policies.
- Types and Quantities of shelving and special shelving equipment to be purchased.
    - Fixed Shelving
    - Future mobile shelving and rail installation (dependent on the budget and location within the Mary Alley Building)
    - Size and quantity of flat files
    - Size and quantity of oversized shelving
    - Size and quantity of special shelving – ex. art bins, wall-mounted art racks, cabinets
    - Size and quantity of extra shelves for horizontal volume storage
- Operations and management plans.
- Final Program of Requirements.
- Move planning and preparation.
    - Preservation decisions
    - Collections location systems
    - Processing priorities

Collections Inventories and Processing:

Work should begin to prepare the collections to obtain more precise size estimates and to gain better intellectual control for the move to the new facility.

- Develop a common collection inventory system.
- Explore location systems and software decisions.
- Each department and community organization should begin to use the common cataloging tool to inventory their collections.
- Physical processing of the materials should begin with appropriate re-boxing and re-foldering of materials and preparing oversized materials for their future storage.

Site Evaluation and Selection:

- Analysis of Mary Alley Office Building to determine the best option for the location of the Archives within the Mary Alley Building.
- Architectural review
    - Test fits for selected location of the Archives
    - Blocking and concept drawings

Budget Determination:

Develop the budgetary requirements that are needed to advance the archives project.

- Establish cost estimates for site development, design, construction, equipment, and related costs.
- Establish a firm “design-to-build” budget for the project.
- Estimate annual operating and maintenance budgets and provisions for future annual funding.
- Review outside funding sources. Appendix D outlines funding and educational resources that can assist in the development of the Marblehead facility.

Master Plan:

After the development of the policies, procedures and final program, the consultant will prepare a Master Plan that summarizes the concept, requirements, location, timeline, and cost estimate for the Town of Marblehead Archives.

Commitment:

The Town of Marblehead and its partners must make a commitment to design and construct an archival facility for Marblehead. Education of the Town's citizens should continue as the project progresses. Activities may include:

- Public meetings to explain and review the progress of the project.
- Newspaper articles about the project.
- Establish a "Friends of the Archives" group to help advance the archives project.