



Mayslake Peabody Estate  
Forest Preserve District of DuPage County

## Master Plan Report

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# Master Plan Report: Mayslake Peabody Estate

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## I. Overview

The Forest Preserve District of DuPage County engaged AltusWorks and their consultants, Interface Engineering and the Concord Group, for professional services to create a Master Plan for the Mayslake Peabody Estate in Oak Brook, Illinois. The exercise began with a comprehensive facility condition assessment of five structures located on the estate. In the second phase, employees of the Forest Preserve and the public were engaged for their opinions on future uses for the Mansion and Retreat Building. AltusWorks synthesized this information and developed several options for programming, reuse, and building system upgrades primarily for the Mansion and Retreat Building.

The following report summarizes the efforts and results of the master planning process, presents the option selected by the Forest Preserve, and outlines a comprehensive phased Master Plan that will both showcase the history and nature of the Estate as well as provide the needed facilities to host exhibits, events, and education.

## II. Facility Condition Assessment Summary

Detailed descriptions, code analysis, photographs, key plans with restoration scope recommendations, and a detailed cost estimate can be found in the Facility Condition Assessment Report provided in **Appended Report 2**. Below is a summary of the findings.

### Mansion

In the fall of 2023, an ongoing building envelope restoration project involving window replacement, masonry repairs, roof repairs, and drainage improvements was ongoing thus an assessment of the exterior of the building was not included in this assessment. The work being executed will stabilize the building's envelope to allow for future interior rehabilitation.

The interior of the Mansion maintains the vast majority of its historic spaces, materials and finishes. The historic materials and finishes are in fair condition with areas of degradation due to water infiltration and general use. Previous alterations to accommodate program changes have resulted in abandoned plumbing infrastructure, exposed attic sprinkler lines, and modern mechanical systems routed throughout the attic and basement spaces.

High moisture levels and water seepage in the basement have been long-term, recurring issues. The current project is taking steps to mitigate the problem, however, the impact of these changes has yet to be demonstrated.

### Retreat Building

The building has limited functional spaces as areas of the first, second, and third floors have been gutted down to the structure leaving the wall layout ghosted on the floors along with the patched location of removed plumbing risers and fixtures. The exposed concrete structure is in good condition with limited spalls. A 4-stop elevator provides access to all floors but is no longer operational and is limited in size and capacity to meet current accessibility requirements.



The main functional spaces, the first-floor event space and the upper floor archival storage space, are in fair to good condition. The finishes in the adjacent rooms and stairwells are in poor condition, with peeling paint and deterioration throughout. There are scattered holes in the third-floor plaster ceiling allowing air leakage into the attic.

The exterior brick and limestone masonry is in fair to good condition with limited areas of deterioration due to failed roof drainage and typical masonry deterioration. The roof systems are in fair condition with compromised flashing conditions allowing daylight into the attic space. Windows throughout require replacement.

### **Chapel**

The Chapel is in good condition with limited mosaic tiles missing from the main elevation. A sealant material has been applied to all the limestone joints instead of a limestone compatible mortar. The wood entry doors require refinishing and limited wood replacement as well as the addition of door closers. The chapel is heated by electric wall heaters, there is no air conditioning or ventilation.

### **Garage**

There is peeling paint and some minor damage along the wood eaves and trim. The interior of the building was not assessed.

### **Gate**

The limestone entry gate and its flanking walls adjacent to the modern street entrance are in poor to fair condition requiring targeted rebuilding and tuckpointing.

## **III. Public Engagement Summary**

Detailed descriptions of the public engagement process and findings can be found in the Stakeholder Engagement Report provided in **Appended Report 3**.

### **Process**

Stakeholders were involved in the planning process to ensure that the project aligns with the Forest Preserve's goals and vision for the Estate. AltusWorks led three different workshops for stakeholders which helped identify common visions, goals, and priorities for the future of the Mayslake Peabody Estate. The findings were used to guide and refine the development of the Master Plan.

### **Findings**

Several themes emerged from the workshop conversations and activities, including accessibility. Discussions around this theme included the removal of barriers to accessibility, enhancing wayfinding, and widening access across various ages and demographics.

Stakeholders stressed the importance of making the Estate more visible and known to the public, voicing concerns about visitors driving past without realizing what is available just down the driveway. The Estate was envisioned as a cultural hub that caters to a range of interests



including art, history, nature, and outdoor activities. While many ideas were proposed to attract different age groups and communities through a variety of events, discussions about programmatic accessibility focused largely on indoor comfort across seasons. For example, the addition of air conditioning was recommended as a highly impactful improvement for the Retreat Wing.

## IV. Master Plan

### A. Planning Methodology

Drawing on the insights from the facilities assessment report, feedback from stakeholders in public engagement sessions, and the mission of the Forest Preserve, AltusWorks developed two distinct programmatic plans with a series of recommendations for exhibit spaces. These plans were intended to illustrate the overarching concepts of two possible “routes” that could be pursued by the Forest Preserve. General repairs and updates were not specified in detail in either of the plans; however, many of the recommended repairs would apply to both options. Both plans incorporated elements of accessibility and ease of maintenance, aligning with the Forest Preserve’s top priorities. Programmatic uses were detailed using the following categories, shaped by both the Forest Preserve and stakeholder/public feedback:

- House Museum
- Exhibit Space
- Community Use or Multi-Purpose
- Office Space
- Mechanical Space and Toilet Rooms

AltusWorks worked with the Forest Preserve staff to facilitate discussion and refine details as needed to develop the final plan that is detailed in the following section.

### B. Narrative Summary: Design

The Master Plan primarily focuses on the reprogramming and alterations to the Mansion and Retreat Building with limited work at the Chapel, Garage and Entry Gate. This report includes colorized and annotated floor plans in **Appendix 3** to illustrate the location of program uses and the integration of the new mechanical and ventilation systems.

The Master Plan embraces the historic qualities of the Mansion by prioritizing its use as a museum space. The museum programming includes public touring to tell the story of the Mansion and includes of the center section of the basement (the billiards room, Turkish bath, wine cellar, and entry stairs), formal living areas on the first floor, and second floor family chambers and servant quarters. Some rooms will be updated with historically accurate furnishings and finishes, while others will be dedicated to rotating exhibits and galleries or other events. In the rooms that are intended to be used as historical museum space or exhibit spaces, the historic architectural finishes will be retained, preserved, and restored. In addition to being a museum space, the formal living areas on the first floor of the Mansion will also be used as event spaces.



The Retreat Building will be utilized for supplemental programming and provide space for programming that would otherwise be incompatible with the spaces available in the Mansion. Office spaces will be largely moved to the Retreat Building, while other spaces will be converted to exhibit space and community uses. The third floor archival storage space will be retained and improved to better preserve the artifacts. The south wing of the building will be demolished to remove unused space and improve historic views from the Mansion to the lake. Additionally, the lower level under the Events Hall will be used as a flexible classroom, occupancy of the Events Hall will be increased, and the second floor's north wing will be used as exhibition space.

In both buildings, accessibility will be improved. The link between the Mansion and Retreat Building will be expanded to provide adequate lobby and circulation space between the buildings. Accessibility to the upper floors will be improved using elevators and lifts. The existing elevator in the Retreat Building will be modernized with a new cab and operating equipment. In the Mansion, concealed wheelchair lifts will provide access to the Living Room from both the Library and Dining Room. A limited use/limited application (LU/LA) elevator will provide access to all primary floor levels. A ramp at the second floor will provide access to the Peabody's private Chambers and Sitting Room, however access to the servants' quarters which will be open for tour, is technically infeasible. The addition of restrooms and janitor's closets throughout the two buildings will also increase accessibility, ease of maintenance, and functionality. The mechanical, electrical, plumbing, and life safety systems will be maintained, replaced, and modernized to support the new uses outlined above.

The Chapel exterior will be restored, and a new heating/cooling and ventilation system will be installed. The Garage will be demolished, and the Entry Gate will be restored.

### **C. Narrative Summary: Building Systems**

In support of the defined program, building systems were analyzed in detail and strategies were established to guide the systems selection. An energy report compared the energy use and cost of the different options against the current energy use to further inform system selection.

The mechanical system design improves the energy efficiency of the primary mechanical systems, adds cooling to the Retreat Building, and provides the code required ventilation air to the occupiable spaces in line with the new master plan uses of the buildings.

#### **Heating/Cooling Systems**

The master plan will maintain separate heating/cooling systems for each building. A new outdoor air source heat pump heater/chiller will be located where the Retreat Building south wing is planned for removal. At the Mansion, the existing air-cooled chiller will be replaced with new outdoor air source heat pump heater/chiller equipment and reusing the existing piping. Screening will be installed at both locations of exterior equipment.

The existing AC unit serving the third-floor archives area currently struggles to handle the cooling load. It will be replaced, and a second AC unit will be installed to provide additional cooling. The ductwork from the new unit will be cross-connected to the existing ductwork to provide partial cooling should either unit fail.



Heating/cooling will be added to the Chapel by way of an air source heat pump with a 2-ton outdoor condensing unit on a new pad outside the building. This unit will be installed below the floor, behind the altar and will distribute and return air through the face of the riser.

### **Ventilation**

New ventilation systems will be added where missing to provide the proper amount of IMC2021 code required outdoor air for the planned occupancies and space use. Aged air handling units will be replaced.

Existing ductwork passing through the basement rooms will be removed, but much of the existing heating/cooling piping will remain and may be relocated to reduce the visual impact. Some new hot and chilled water piping will be added.

The many existing two-pipe heating/cooling fan coil units (FCUs) serving individual rooms and areas in both buildings will be retained. The associated hot and chilled water pumps, change-over valves, and distribution piping will be reused. Some FCUs require new fan motors which will be electrically efficient EC motors should space be available within the enclosure. Valve actuators to be replaced and existing valve bodies reused.

### **Control System**

The obsolete digital control system monitoring and controlling the fan coil units, pumps, boilers, and chillers is to be replaced with a web-based building automation system (BAS). The new BAS will monitor and control all new equipment. New network cabling will be required between the new fan coil unit digital controllers as the existing cabling will limit the network performance of the new BAS. New temperature sensors to be provided, some with CO2 and relative humidity monitoring capabilities.

The electrical system design updates the existing distribution system, life safety systems, while replacing lighting, receptacles, and the fire alarm system. It will power new mechanical and plumbing equipment, vertical circulation equipment, and exterior lighting. Renewable energy is envisioned in the form of (2) photovoltaic systems mounted on the Retreat building roofs and concealed from view.

The plumbing system design will provide a complete and operational sanitary waste and vent system, kitchen waste system, storm drainage system, domestic hot and cold water piping system, condensate drain piping system, and plumbing equipment to support the new bathrooms and kitchen. Domestic cold water, sanitary, and vent shall be fed from the building's existing systems. New electric and air source heat pump water heaters will be provided for each building.

The fire protection system will be modified to accommodate changes to the building that affect the coverage of the system, addressing both the sprinkler system and location of fire extinguishers.



## V. Implementation

The Master Plan has been divided into 4 major phases to best support the needs of the Forest Preserve to maintain and systemically improve the complex as funds become available:

**Phase I: Critical Repairs and Building Systems Improvements** will address the most critical items to allow for continued use, rectify code deficiencies, improve comfort and energy efficiency while laying the groundwork for the future phases. Phase I removes structures that are no longer needed while stabilizing those that will remain.

**Phase 2: Access and ADA Improvements** will enhance physical access within the complex and update toilet facilities, vertical circulation, and life safety systems.

**Phase 3: Programming** will incorporate new programming and relocate some functions while creating space for new. This phase includes restoring the mansion interiors to promote historic touring.

**Phase 4: Enhancements** will alter and expand the connecting link between the Mansion and Retreat Building to provide a more gracious entry sequence.





A detailed opinion of probable costs for each element within a phase is included in **Appendix 4**. The following is a summary of those costs by phase and subphase.

**PHASE I: CRITICAL REPAIRS & BUILDING SYSTEMS IMPROVEMENTS**

<b>1</b>	<b>General (Retreat Building and Mansion)</b>		
a	Replace temperature controls	\$	357,917
b	Mechanical System Renovation	\$	2,789,119
c	Dedicated Outdoor Air (DOAs) units - ventilation requirements	\$	794,440
			SUBTOTAL
			<b>\$ 3,941,476</b>
<b>2</b>	<b>Retreat Building</b>		
a	Demolish south wing	\$	995,444
b	Restore/repair envelope	\$	2,537,520
c	Add supplemental Libert HVAC unit to the Archival Storage.	\$	85,290
d	Add slop sinks	\$	107,934
			SUBTOTAL
			<b>\$ 3,726,189</b>
<b>3</b>	<b>Mansion</b>		
a	Add slop sinks	\$	29,926
b	Upgrade electrical panels	\$	38,904
			SUBTOTAL
			<b>\$ 68,830</b>
<b>4</b>	<b>Link</b>		
a	Mitigate leakage – envelope	\$	99,754
			SUBTOTAL
			<b>\$ 99,754</b>
<b>5</b>	<b>Garage</b>		
a	Demolish garage structure	\$	39,902
			SUBTOTAL
			<b>\$ 39,902</b>
<b>Phase 1 CRITICAL REPAIRS/SYSTEMS TOTAL</b>			<b>\$ 7,876,149</b>

**PHASE 2: ACCESS AND ADA IMPROVEMENTS**

<b>1</b>	<b>General</b>		
a	Fire Alarm	\$	720,128
b	Update emergency lighting system	\$	20,849
c	Update fire suppression system	\$	488,794
			SUBTOTAL
			<b>\$ 1,229,771</b>
<b>2</b>	<b>Retreat Building</b>		
a	Modernize/replace elevator	\$	834,815
b	ADA updates – route and toilets	\$	218,012
			SUBTOTAL
			<b>\$ 1,052,828</b>
<b>3</b>	<b>Mansion</b>		
a	First floor access	\$	223,050
b	Vertical Access: elevator(LULA) and ramps	\$	542,960
			SUBTOTAL
			<b>\$ 766,010</b>
<b>Phase 2 ADA TOTAL</b>			<b>\$ 3,048,609</b>



**PHASE 3: PROGRAMMING**

<b>1</b>	<b>General</b>		
a	Renovate Domestic Water Piping System	\$ 269,336	
b	Renovate Sanitary Waste and Vent System	\$ 359,114	
		SUBTOTAL	<b>\$ 628,450</b>
<b>2</b>	<b>Retreat Building</b>		
a	Relocate office spaces from Mansion and within Retreat Building	\$ 558,205	
b	Add program spaces	\$ 3,815,388	
c	Add restrooms	\$ 370,710	
d	HVAC terminal units to suit programming	\$ 115,715	
e	Upgrade lighting and electrical	\$ 755,137	
		SUBTOTAL	<b>\$ 5,615,154</b>
<b>3</b>	<b>Mansion</b>		
a	Restore finishes	\$ 1,206,009	
b	Kitchen renovation	\$ 58,057	
c	Renovate existing toilets and add new	\$ 138,982	
d	Electric and Air Source Heat Pump Water Heaters	\$ 53,867	
		SUBTOTAL	<b>\$ 1,456,915</b>
<b>4</b>	<b>Chapel</b>		
a	Restore exterior	\$ 210,960	
b	Provide a new HVAC system	\$ 149,631	
		SUBTOTAL	<b>\$ 360,590</b>
<b>5</b>	<b>Gate</b>		
a	Restore gate and flanking walls	\$ 89,769	
		SUBTOTAL	<b>\$ 89,769</b>
<b>6</b>	<b>Site Lighting and Lighting Controls Upgrade</b>		
a	Upgrade exterior lighting	\$ 200,206	
		SUBTOTAL	<b>\$ 200,206</b>
		<b>Phase 3 PROGRAMMING TOTAL</b>	<b>\$ 8,351,084</b>

**PHASE 4: ENHANCEMENTS**

<b>1</b>	<b>Link</b>		
a	Alter and expand connecting link to create entry pavilion	\$ 178,011	
		<b>Phase 4 LINK TOTAL</b>	<b>\$ 178,011</b>
		<b>GRAND TOTAL</b>	<b>\$ 19,453,852</b>



The detail of this phasing is outlined below.

## PHASE I: CRITICAL REPAIRS & BUILDING SYSTEMS IMPROVEMENTS\*

### 1. General (Retreat Building and Mansion)

- a. **Replace temperature controls:** The obsolete digital control system monitoring and controlling the fan coil units, pumps, boilers and chiller to be replaced with a web-based building automation system (BAS). New network cabling between the new fan coil unit digital controllers as the existing cabling would limit the network performance of the new BAS. New temperature sensors to be provided, some with CO2 and relative humidity monitoring capabilities. Fan coil unit valve actuators to be replaced, and existing valve bodies reused.
- b. **New Heat Pump Heating/Cooling plant,** connect to existing terminals in the Mansion
  - i. The Mansion and the Retreat Building will maintain separate heating/colling plants. Each Plant will include air source heat pump heater/chillers that produce hot or chilled water but not both simultaneously, therefore requiring additional piping.
    1. Plant 1: Retreat Wing: install (1) new ~100 ton air source heat pump heater/chiller. New piping is required from the outdoor heat pump to the new hot/chilled water distribution pumps located indoors in the lower level of the Retreat Wing. New larger piping will be installed in the ceiling of Lobby 005 to provide chilled water to the fan coil units on the northside of the Retreat Building and to provide hot water from the boilers to the new AHU and DOAS units. Additional smaller sized chilled and hot water piping from Plant 1 will be installed into the Mansion west basement only to serve the new west side DOAS unit and Billiard Room fan coil unit.
    2. Plant 2: Mansion: Replace existing chiller with (1) new ~60 ton air source heat pump heater/chiller. The existing piping from the mansion chiller will be reused and connected to the new Plant 2 equipment.
  - ii. The existing hot water boilers in both buildings would be retained and operate below 35F outdoors when the efficiency and output capacity of the air source heat pump heater/chiller declines and becomes less efficient.
  - iii. **Fan Coil Units Maintenance:** The existing fan coil units are in good condition with some of the units requiring new fan motors. New electrically efficient EC motors would be installed if space is available within the equipment enclosure.
  - iv. **Renewable Energy:** To augment the system and further the Forest Preserve's sustainable goals, add photovoltaic systems consisting of:
    1. 45 kW system on the north Retreat building roof.
    2. 32 kW system on the center Retreat building roof.
    3. Tie solar into main electrical room panel.
    4. Add a 100 kWh battery storage system, tie into mansion electrical panel for operation during grid outage



- c. **Dedicated Outdoor Air (DOAs) units** are required to satisfy IMC2021 code ventilation requirements:
- i. DOAS-M.1. Located in the mansion east basement, this unit serves the east half of the basement, east half of the first floor including the LR, DR, breakfast porch, kitchen and 234 rooms. It replaces the existing Carrier make-up air unit. This dedicated outdoor air system (DOAS) utilizes return air from the space through an energy recovery device to precondition the outdoor ventilation air. It requires both hot and chilled water services. The unit throttles air volume based upon indoor occupancy as determined by CO<sub>2</sub> sensors in the LR and DR. New fan coil units will condition the Turkish bath and wine cellar. Unit size shown on drawing.
  - ii. DOAS-M.2. Located in the west basement, this unit serves the west half of the basement, west half of the first floor including the sun porch, library, study and entry hall. Unit utilizes return air from the space through an energy recovery device to precondition the outdoor ventilation air. It requires both hot and chilled water services from the Retreat Building routed through the basement. The unit throttles air volume based upon indoor occupancy as determined by a CO<sub>2</sub> sensor in the library. A new fan coil unit will condition the billiards room and stair hall. Unit size shown on drawing.
  - iii. DOAS-M.3. Located in the main attic, this unit serves the entire second floor. Unit utilizes return air from the space through an energy recovery device to precondition the outdoor ventilation air. Requires both hot and chilled water services. The unit throttles air volume based upon indoor occupancy as determined by a CO<sub>2</sub> sensor in the common return air duct. Unit size shown on drawing.
  - iv. DOAS-M.4. Located in the attic above the servant quarters, this unit serves the first floor rooms 133-135 and second floor servant quarters. This fan coil unit conditions outdoor air via a low ambient variable refrigerant flow outdoor compressor.
  - v. DOAS-R.1. Located in the main attic, this unit serves the lower level classroom space and first floor tall ceiling events hall. Unit utilizes return air from the space through an energy recovery device to precondition the outdoor ventilation air. Requires both hot and chilled water piping routed up from the boiler room to the attic. The unit throttles air volume based upon indoor occupancy as determined by CO<sub>2</sub> sensors in the classroom and events hall. Unit size shown on drawing.
  - vi. AHU-R.1. Located in the Retreat Building basement mechanical room, this air handling unit replaces the existing unit and serves the lower and upper level lobbies. It requires both hot and chilled water services. The unit throttles outdoor air volume based upon indoor occupancy as determined by a CO<sub>2</sub> sensor in the first floor lobby. Unit size shown on drawing.
  - vii. DOAS-R.1. Located in the Retreat Building attic, this unit serves the Event Space and the lower lever Multipurpose Classroom. Unit utilizes return air from the space through an energy recovery device to precondition the outdoor ventilation air. Requires both hot and chilled water services. The unit throttles air volume based upon indoor occupancy as determined by a CO<sub>2</sub> sensor in each room served. Unit size shown on drawing.
  - viii. ERV-R.2. Located in the south mechanical room on the third floor of the Retreat Building, this energy recovery ventilator unit provides ventilation air to the archives



area. The unit uses an energy recovery core and throttles volume based upon indoor occupancy as determined by a CO2 sensor in the return air duct. The unit supply air is ducted into the inlet of a new self-contained air conditioning unit. The existing perimeter fan coil units provide heating or cooling of the individual rooms. Unit size shown on drawing.

- d. **Cooling Coil Condensate Drain System:** All cooling coil condensate drain piping from indoor HVAC units to closest service sink, floor sink, floor drain or other plumbing drain locations.

## 2. Retreat Building:

- a. **Demolish the south wing**, provide new exterior wall enclosure to sections remaining, and prepare slab for new heating/cooling plant.
- b. **Restore/repair envelope** – repair roof and drainage system, restore masonry and replace windows.
- c. **Archival Storage Cooling:** Replace existing Libert HVAC unit and install a second AC unit to provide additional cooling. The ductwork from the new unit to be cross-connected to the existing ductwork to provide partial cooling should either unit fail.
- d. **Add slop sinks** at janitor's closets 003a, 104, 205a, and 302a.

## 3. Mansion:

- a. **Add slop sinks** all floors
- b. **Upgrade electrical** panels, switches and wiring: Replace general panels CLP-1, LP-1 and LP-2. Perform an arc flash study and apply labels to distribution equipment. Tag all electrical panels and equipment with labels.

## 4. Link:

- a. **Mitigate leakage** – repair envelope

## 5. Garage:

- a. **Demolish garage** structure, remove slab and restore landscaping.



## Phase 2: ACCESS AND ADA IMPROVEMENTS

### 1. General:

#### a. Fire Alarm

- i. Separate systems will be provided for each building which can be connected together to act as one or left separate. The final configuration shall be determined by the local fire department.
- ii. Mansion: Fire alarm panel upgrade and new devices including additional smoke detectors in Museum spaces for above code minimum coverage.
- iii. Retreat Building: Replace existing fire alarm system, initiating devices, notification devices, with new fire alarm system capable of supervised off-site communication and remote monitoring in the Mansion Building.

#### b. Update emergency lighting system:

- i. Replace existing exit signs with new LED battery backed (90 minute) luminaires.
- ii. Replace existing egress luminaires with new LED battery backed (90 minute) units.

#### c. Update fire suppression system: The existing buildings fire sprinkler systems will be modified to accommodate any changes to the building that affect the coverage of the system.

### 2. Retreat Building:

#### a. Modernize/replace elevator cab and equipment to increase vertical accessibility. The updated elevator to be used to transport objects to and from the archive space, as well as provide access for visitors.

#### b. ADA updates – route and toilets

- i. Renovate first floor men's and women's toilet rooms, renovate second floor single restrooms (207a and 207b).
- ii. Electric and Air Source Heat Pump Water Heaters: Provide a new hybrid electric heat pump water heater in the basement mechanical room to serve the new and existing restrooms from basement to second floor in the Retreat Building. A self-contained heat pump water heater with a storage capacity of 66 gallon and 76 GPH recovery rate will be absorbing ambient heat from the surrounding air in the mechanical room to heat up the water for domestic uses. Provide 120V-60Hz A.C., 15.0 A electric connection and a bladder type expansion tank for the heater. Hot water recirculation systems shall be provided where there is hot water distribution. Domestic hot water will be stored at 140 degrees and will be reduced to 120 degrees for distribution by meter mixing valve.

### 3. Mansion:

#### a. First floor access spaces: add 2 concealed lifts to access living and dining rooms.

#### b. Vertical access: A limited use-limited application elevator (LULA) provides access between the basement, first, and second floors. A ramp on the second floor provides access to the Peabody's sitting room.



## Phase 3: PROGRAMMING

### 1. General:

- a. **Renovate Domestic Water Piping System:** Provide piping distribution systems to all plumbing fixtures and equipment. Provide tempering and isolation valves to horizontal lines serving separate areas.
- b. **Renovate Sanitary Waste and Vent System**
  - i. All plumbing fixtures shall be drained by gravity through a sanitary waste and vent piping system that conveys waste water and vapors from fixtures and equipment throughout the building.
  - ii. Existing sanitary sewer service and existing vent connections through the roof are expected to remain.

### 2. Retreat Building:

- a. **Relocate office spaces** from Mansion and within Retreat Building to the north wing to facilitate staff monitoring visitors as they arrive.
- b. **Add program spaces:**
  - i. Storage (101) to service the Event's Hall at the first-floor north wing.
  - ii. Exhibit space on the second floor.
  - iii. Classroom/multi-purpose gathering room (009) to be located in the basement.
- c. **Add restroom** in basement (003) and first floor family restroom (110).
- d. **HVAC terminal units** to suit programming:
  - i. ERV-R.1. Located in the north wing on the first floor of the Retreat Building, this energy recovery ventilator unit provides ventilation air to the active storage and office area. The unit uses an energy recovery core and throttles volume based upon indoor occupancy as determined by a CO2 sensor in the return air duct. Unit size shown on drawing.
  - ii. AHU-R.2. Located on the second floor, this air handling unit serves the second floor lobby and exhibit spaces. It requires both hot and chilled water services. The unit throttles outdoor air volume based upon indoor occupancy as determined by CO2 sensors in the exhibit space. The existing fan coil units are assumed to be removed for exhibit use. If not, then a DOAS would be installed. Unit size shown on drawing.
- e. **Upgrade electrical** panel, switches and wiring:
  - i. Upgrade electrical distribution:
    1. Perform an arc flash study and apply labels to distribution equipment.
    2. Replace general electrical panels - LP-B1A, CLP-1, CLP-2 and B1-EM.
    3. Tag all electrical panels and equipment with labels.
  - ii. Lighting
    1. Replace existing incandescent and fluorescent light sources with new LED luminaires.
    2. Upgrade of existing lighting controls with new controls compliant with the energy code IECC-2021. Include all occupancy and daylight controls.



iii. Receptacles

1. Add new receptacles and faceplates with new receptacles and faceplates of the appropriate type (e.g. GFCI, tamper resistant) in classroom space, and administrative offices spaces.

**3. Mansion:**

**a. Restore finishes,** install new historic and exhibit lighting

- i. The majority of the mansion first floor is museum space. Replace existing incandescent and fluorescent light sources with new LED luminaires.
- ii. Upgrade of existing lighting controls with new controls compliant with the energy code IECC-2021. Include all occupancy and daylight controls.

**b. Kitchen renovation**

- i. Add new receptacles and branch circuits to feed new all electric kitchen equipment
- ii. All kitchen sinks and floor sinks that receive the drainage from fixtures and equipment with grease laden waste in the catering kitchen shall be drained by gravity through a kitchen waste and vent piping system to a grease interceptor. Provide vent piping to the grease interceptor.

**c. Renovate existing toilets.** Add new restrooms at basement 031A, 031b and at 2nd floor, Chamber 4 (room number 288A).

**d. Electric and Air Source Heat Pump Water Heaters:** Provide a new fully integrated heat pump water heater system in the basement storage room to serve the new restrooms, catering kitchen, laundry room and an existing bathroom in a chamber in the Mansion Building. The heat pump water heater with a storage capacity of 119 gallon and 90 GPH recovery rate at hybrid mode will be absorbing ambient heat from the surrounding air in the storage room to heat up the water for domestic uses. Provide a 120-gallon additional hot water storage tank for extra storage capacity to support the hot water demand during peak hours. The heat pump water heater is rated at 12 kW @ 240V or 9 kW @ 208V, single phase, 60 cycle AC. Provide bladder type expansion tank for the heater. Hot Water Recirculation Systems shall be provided where the hot water distribution. Domestic hot water will be stored at 140 degrees and distributed to the kitchen at 140 degrees. Domestic hot water distribution to elsewhere will be reduced by water mixing valve.

**4. Chapel:**

**a. Restore exterior**

**b. Provide a new heating, cooling and ventilation system.** Provide new door closers in coordination with the HVAC system.

**5. Gate:**

**a. Restore gate and flanking wall elements**

**6. Site Lighting and Lighting Controls Upgrade:**

**a. Upgrade exterior light standards to install radio based dimming controls in each fixture allowing compliance with dark sky initiatives, energy savings and individual controllability. Eliminate existing exterior lighting time clock and relay panels.**





**\*Phase 4: ENHANCEMENTS (consider as a “want” item within Phase 1)**

**1. Retreat Building:**

- a.** Alter and expand connecting link to create entry pavilion



## **Appendices**

1. Program and Occupancy
2. Master Plan Drawings
3. Opinion of Probable Costs



Appendix 1:  
Program and Occupancy

Table 1: Square Footage of Program Uses by Level

Level	Use Type	Area in Square Feet
Basement	Assembly	2352
	Circulation	2417
	Demolish	3210
	Mechanical	4501
	Museum	1999
	Restroom	220
	Storage	6438
Level	Use Type	Area in Square Feet
First Floor	Assembly	2916
	Circulation	2765
	Demolish	3130
	Kitchen	508
	Mechanical	888
	Museum	5119
	Office	1623
	Restroom	696
	Storage	2008
Level	Use Type	Area in Square Feet
Second Floor	Assembly	218
	Circulation	2258
	Demolish	3226
	Exhibit	4721
	Mechanical	562
	Museum	3303
	Restroom	358
	Storage	66
Level	Use Type	Area in Square Feet
Third Floor	Circulation	322
	Demolish	2908
	Mechanical	495
	Office	227
	Storage	3487

Table 2: Occupancy Load by Level

Level	Occupancy Load
Basement	248
First	882
Second	305
Third	15
<b>Total</b>	<b>1440</b>

## Appendix 2: Master Plan Drawings

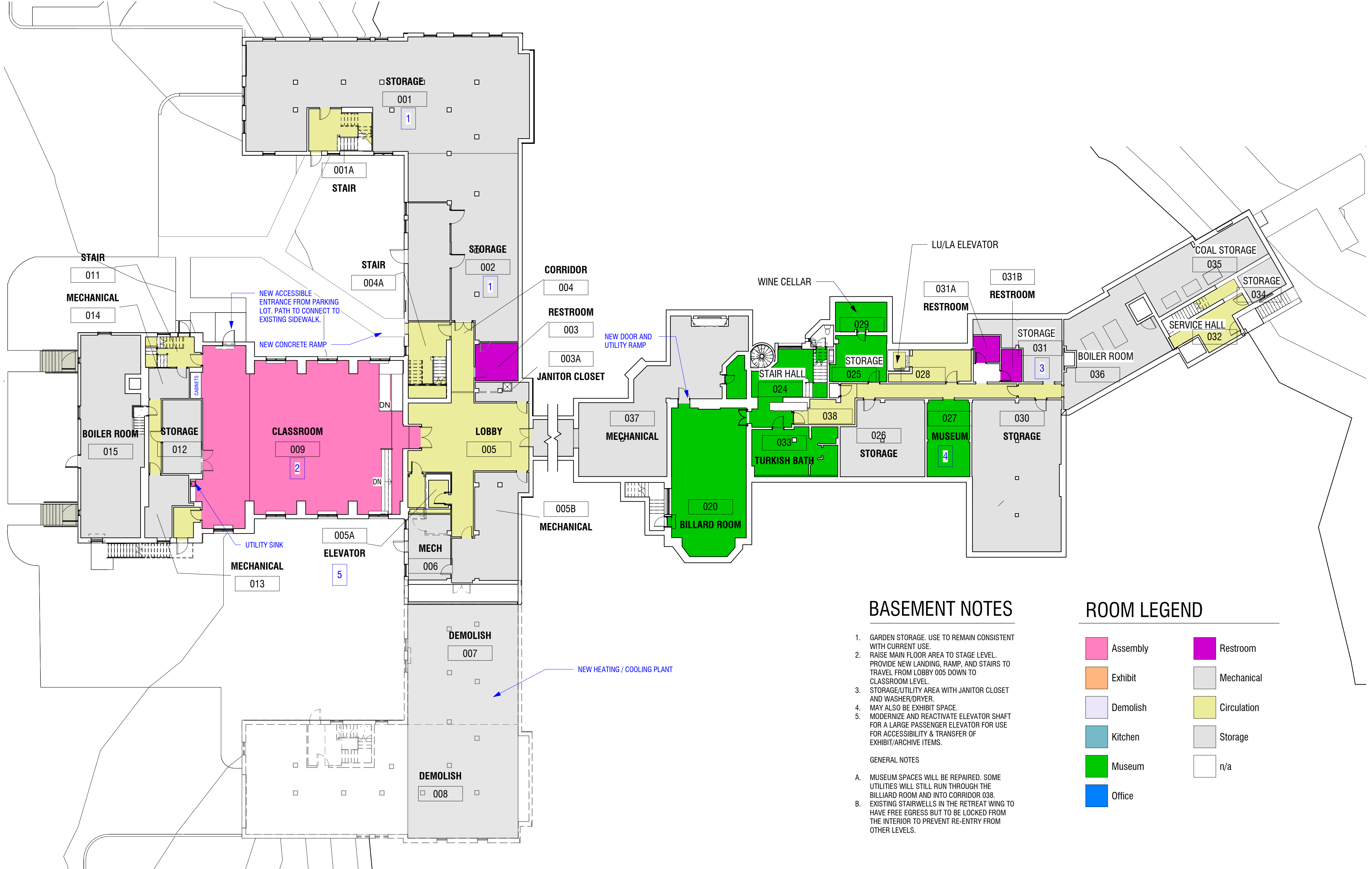


### LEGEND

1. ENTRY GATE
2. CHAPEL
3. RETREAT WING
4. MANSION
5. GARAGE

MASTER PLAN DRAWING INDEX	
Sheet Number	Sheet Name
A1.00	MASTER PLAN
A1.01	PLAN A BASEMENT LEVEL
A1.02	PLAN A FIRST LEVEL
A1.03	PLAN A SECOND LEVEL
A1.04	PLAN A THIRD LEVEL
MEP1.01	BASEMENT LEVEL
MEP1.02	FIRST LEVEL
MEP1.03	SECOND LEVEL
MEP1.04	THIRD LEVEL

① SITE PLAN - MASTER PLAN  
1 : 1350



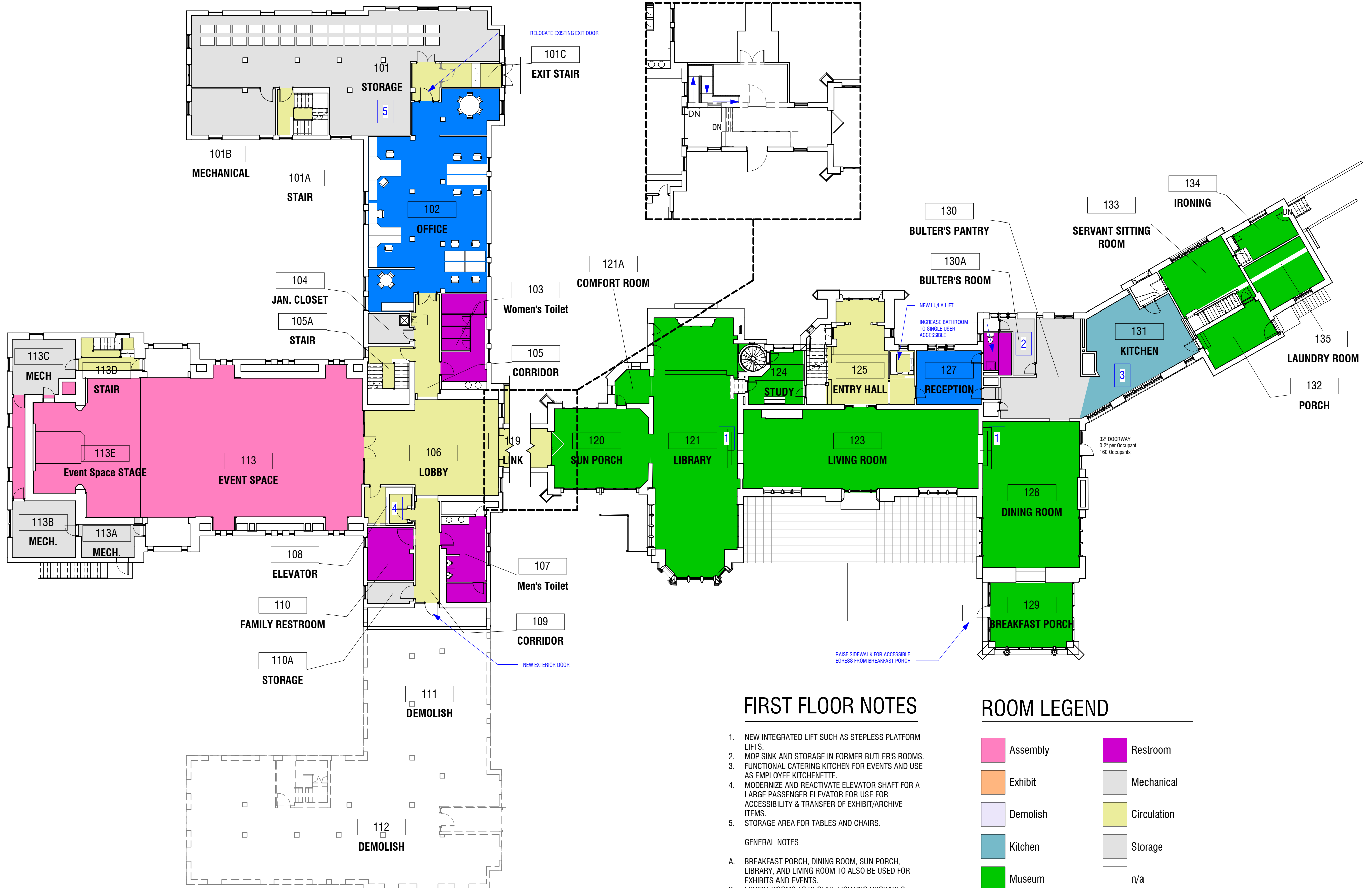
**BASEMENT NOTES**

1. GARDEN STORAGE. USE TO REMAIN CONSISTENT WITH CURRENT USE.
  2. RAISE MAIN FLOOR AREA TO STAGE LEVEL. PROVIDE NEW LANDING, RAMP, AND STAIRS TO TRAVEL FROM LOBBY 005 DOWN TO CLASSROOM LEVEL.
  3. STORAGE/UTILITY AREA WITH JANITOR CLOSET AND WASHER/DRYER.
  4. MAY ALSO BE EXHIBIT SPACE.
  5. MODERNIZE AND REACTIVATE ELEVATOR SHAFT FOR A LARGE PASSENGER ELEVATOR FOR USE FOR ACCESSIBILITY & TRANSFER OF EXHIBIT/ARCHIVE ITEMS.
- GENERAL NOTES
- A. MUSEUM SPACES WILL BE REPAIRED. SOME UTILITIES WILL STILL RUN THROUGH THE BILLIARD ROOM AND INTO CORRIDOR 038.
  - B. EXISTING STAIRWELLS IN THE RETREAT WING TO HAVE FREE EGRESS BUT TO BE LOCKED FROM THE INTERIOR TO PREVENT RE-ENTRY FROM OTHER LEVELS.

**ROOM LEGEND**

<span style="display: inline-block; width: 15px; height: 15px; background-color: #FF69B4; border: 1px solid black;"></span> Assembly	<span style="display: inline-block; width: 15px; height: 15px; background-color: #800080; border: 1px solid black;"></span> Restroom
<span style="display: inline-block; width: 15px; height: 15px; background-color: #FFD700; border: 1px solid black;"></span> Exhibit	<span style="display: inline-block; width: 15px; height: 15px; background-color: #A9A9A9; border: 1px solid black;"></span> Mechanical
<span style="display: inline-block; width: 15px; height: 15px; background-color: #E0E0E0; border: 1px solid black;"></span> Demolish	<span style="display: inline-block; width: 15px; height: 15px; background-color: #FFFF00; border: 1px solid black;"></span> Circulation
<span style="display: inline-block; width: 15px; height: 15px; background-color: #4682B4; border: 1px solid black;"></span> Kitchen	<span style="display: inline-block; width: 15px; height: 15px; background-color: #D3D3D3; border: 1px solid black;"></span> Storage
<span style="display: inline-block; width: 15px; height: 15px; background-color: #00FF00; border: 1px solid black;"></span> Museum	<span style="display: inline-block; width: 15px; height: 15px; background-color: #FFFFFF; border: 1px solid black;"></span> n/a
<span style="display: inline-block; width: 15px; height: 15px; background-color: #0000FF; border: 1px solid black;"></span> Office	

1 PLAN A BASEMENT LEVEL  
1/16" = 1'-0"



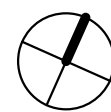
### FIRST FLOOR NOTES

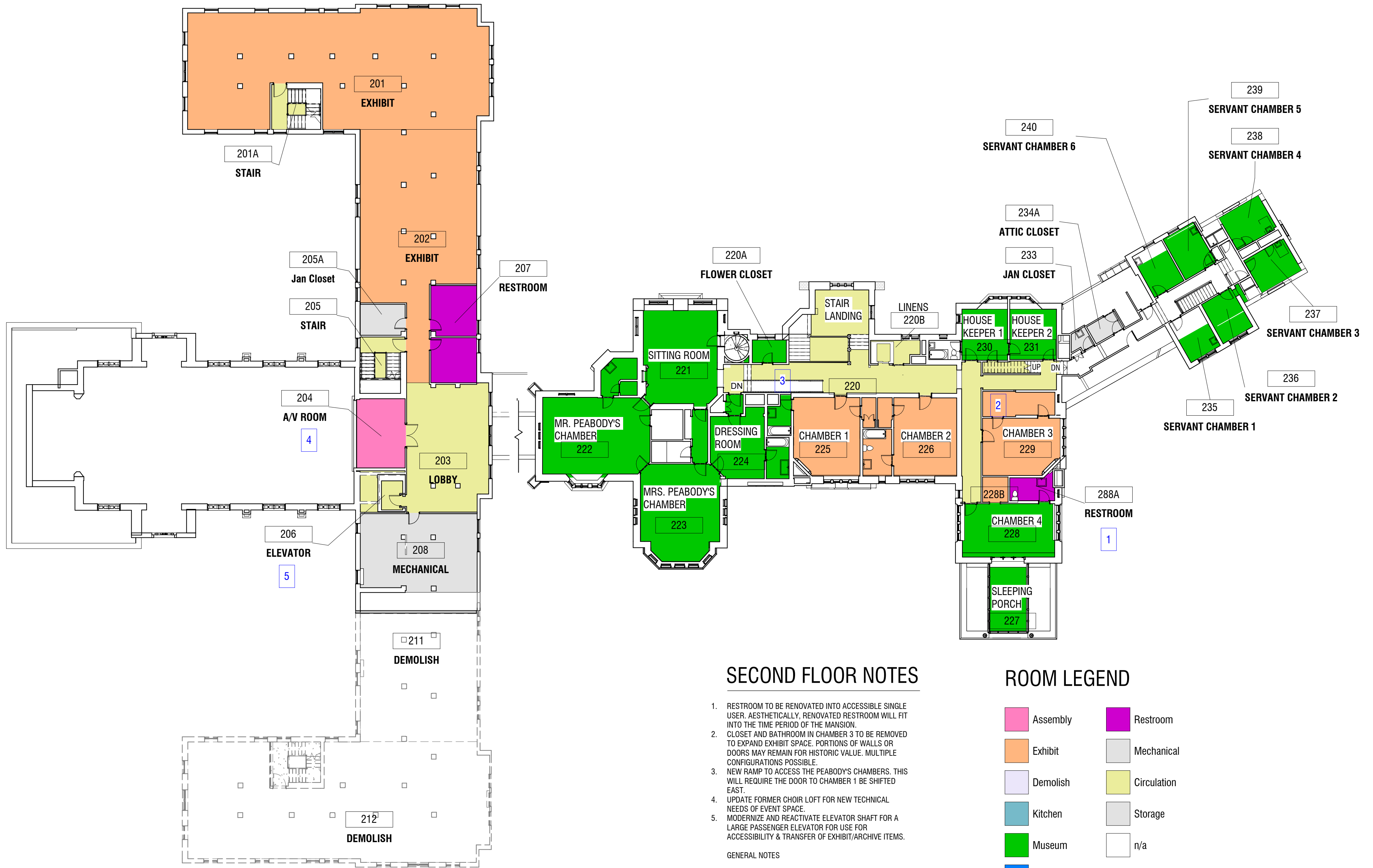
1. NEW INTEGRATED LIFT SUCH AS STEPLESS PLATFORM LIFTS.
  2. MOP SINK AND STORAGE IN FORMER BUTLER'S ROOMS.
  3. FUNCTIONAL CATERING KITCHEN FOR EVENTS AND USE AS EMPLOYEE KITCHENETTE.
  4. MODERNIZE AND REACTIVATE ELEVATOR SHAFT FOR A LARGE PASSENGER ELEVATOR FOR USE FOR ACCESSIBILITY & TRANSFER OF EXHIBIT/ARCHIVE ITEMS.
  5. STORAGE AREA FOR TABLES AND CHAIRS.
- GENERAL NOTES
- A. BREAKFAST PORCH, DINING ROOM, SUN PORCH, LIBRARY, AND LIVING ROOM TO ALSO BE USED FOR EXHIBITS AND EVENTS.
  - B. EXHIBIT ROOMS TO RECEIVE LIGHTING UPGRADES.
  - C. EXISTING STAIRWELLS IN THE RETREAT WING TO HAVE FREE EGRESS BUT TO BE LOCKED FROM THE INTERIOR TO PREVENT RE-ENTRY FROM OTHER LEVELS.

### ROOM LEGEND

<span style="display: inline-block; width: 15px; height: 15px; background-color: #FF69B4; border: 1px solid black;"></span> Assembly	<span style="display: inline-block; width: 15px; height: 15px; background-color: #800080; border: 1px solid black;"></span> Restroom
<span style="display: inline-block; width: 15px; height: 15px; background-color: #FF8C00; border: 1px solid black;"></span> Exhibit	<span style="display: inline-block; width: 15px; height: 15px; background-color: #A9A9A9; border: 1px solid black;"></span> Mechanical
<span style="display: inline-block; width: 15px; height: 15px; background-color: #D3D3D3; border: 1px solid black;"></span> Demolish	<span style="display: inline-block; width: 15px; height: 15px; background-color: #F0E68C; border: 1px solid black;"></span> Circulation
<span style="display: inline-block; width: 15px; height: 15px; background-color: #ADD8E6; border: 1px solid black;"></span> Kitchen	<span style="display: inline-block; width: 15px; height: 15px; background-color: #A9A9A9; border: 1px solid black;"></span> Storage
<span style="display: inline-block; width: 15px; height: 15px; background-color: #00FF00; border: 1px solid black;"></span> Museum	<span style="display: inline-block; width: 15px; height: 15px; background-color: #FFFFFF; border: 1px solid black;"></span> n/a
<span style="display: inline-block; width: 15px; height: 15px; background-color: #0000FF; border: 1px solid black;"></span> Office	

1 PLAN A FIRST LEVEL  
1/16" = 1'-0"





### SECOND FLOOR NOTES

1. RESTROOM TO BE RENOVATED INTO ACCESSIBLE SINGLE USER. AESTHETICALLY, RENOVATED RESTROOM WILL FIT INTO THE TIME PERIOD OF THE MANSION.
2. CLOSET AND BATHROOM IN CHAMBER 3 TO BE REMOVED TO EXPAND EXHIBIT SPACE. PORTIONS OF WALLS OR DOORS MAY REMAIN FOR HISTORIC VALUE. MULTIPLE CONFIGURATIONS POSSIBLE.
3. NEW RAMP TO ACCESS THE PEABODY'S CHAMBERS. THIS WILL REQUIRE THE DOOR TO CHAMBER 1 BE SHIFTED EAST.
4. UPDATE FORMER CHOIR LOFT FOR NEW TECHNICAL NEEDS OF EVENT SPACE.
5. MODERNIZE AND REACTIVATE ELEVATOR SHAFT FOR A LARGE PASSENGER ELEVATOR FOR USE FOR ACCESSIBILITY & TRANSFER OF EXHIBIT/ARCHIVE ITEMS.

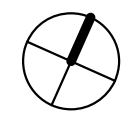
#### GENERAL NOTES

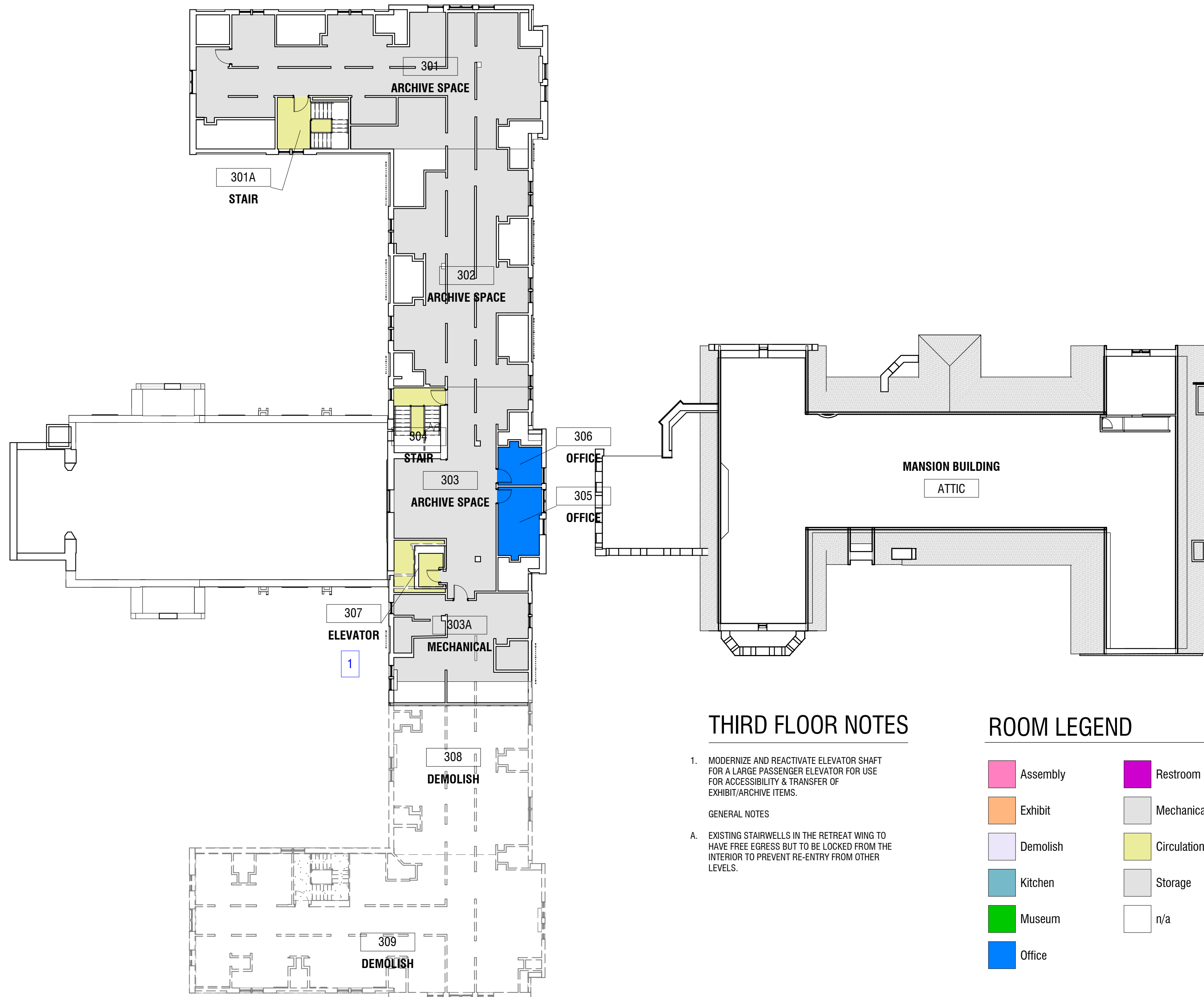
- A. EXHIBIT ROOMS TO RECEIVE LIGHTING UPGRADES.
- B. EXISTING STAIRWELLS IN THE RETREAT WING TO HAVE FREE EGRESS BUT TO BE LOCKED FROM THE INTERIOR TO PREVENT RE-ENTRY FROM OTHER LEVELS.

### ROOM LEGEND

<span style="display: inline-block; width: 15px; height: 15px; background-color: #FF69B4; border: 1px solid black;"></span> Assembly	<span style="display: inline-block; width: 15px; height: 15px; background-color: #800080; border: 1px solid black;"></span> Restroom
<span style="display: inline-block; width: 15px; height: 15px; background-color: #FF8C00; border: 1px solid black;"></span> Exhibit	<span style="display: inline-block; width: 15px; height: 15px; background-color: #A9A9A9; border: 1px solid black;"></span> Mechanical
<span style="display: inline-block; width: 15px; height: 15px; background-color: #E0E0E0; border: 1px solid black;"></span> Demolish	<span style="display: inline-block; width: 15px; height: 15px; background-color: #FFFF00; border: 1px solid black;"></span> Circulation
<span style="display: inline-block; width: 15px; height: 15px; background-color: #ADD8E6; border: 1px solid black;"></span> Kitchen	<span style="display: inline-block; width: 15px; height: 15px; background-color: #D3D3D3; border: 1px solid black;"></span> Storage
<span style="display: inline-block; width: 15px; height: 15px; background-color: #008000; border: 1px solid black;"></span> Museum	<span style="display: inline-block; width: 15px; height: 15px; background-color: #FFFFFF; border: 1px solid black;"></span> n/a
<span style="display: inline-block; width: 15px; height: 15px; background-color: #0000FF; border: 1px solid black;"></span> Office	

1 PLAN A SECOND LEVEL  
1/16" = 1'-0"





**THIRD FLOOR NOTES**

- 1. MODERNIZE AND REACTIVATE ELEVATOR SHAFT FOR A LARGE PASSENGER ELEVATOR FOR USE FOR ACCESSIBILITY & TRANSFER OF EXHIBIT/ARCHIVE ITEMS.

GENERAL NOTES

- A. EXISTING STAIRWELLS IN THE RETREAT WING TO HAVE FREE EGRESS BUT TO BE LOCKED FROM THE INTERIOR TO PREVENT RE-ENTRY FROM OTHER LEVELS.

**ROOM LEGEND**

<span style="display: inline-block; width: 15px; height: 15px; background-color: #FF69B4; border: 1px solid black;"></span> Assembly	<span style="display: inline-block; width: 15px; height: 15px; background-color: #FF00FF; border: 1px solid black;"></span> Restroom
<span style="display: inline-block; width: 15px; height: 15px; background-color: #FF8C00; border: 1px solid black;"></span> Exhibit	<span style="display: inline-block; width: 15px; height: 15px; background-color: #D3D3D3; border: 1px solid black;"></span> Mechanical
<span style="display: inline-block; width: 15px; height: 15px; background-color: #E6E6FA; border: 1px solid black;"></span> Demolish	<span style="display: inline-block; width: 15px; height: 15px; background-color: #F0F0F0; border: 1px solid black;"></span> Circulation
<span style="display: inline-block; width: 15px; height: 15px; background-color: #4682B4; border: 1px solid black;"></span> Kitchen	<span style="display: inline-block; width: 15px; height: 15px; background-color: #A9A9A9; border: 1px solid black;"></span> Storage
<span style="display: inline-block; width: 15px; height: 15px; background-color: #00FF00; border: 1px solid black;"></span> Museum	<span style="display: inline-block; width: 15px; height: 15px; background-color: #FFFFFF; border: 1px solid black;"></span> n/a
<span style="display: inline-block; width: 15px; height: 15px; background-color: #0000FF; border: 1px solid black;"></span> Office	

1 PLAN A THIRD LEVEL  
1/16" = 1'-0"

