

Rehabilitation of The Martin House

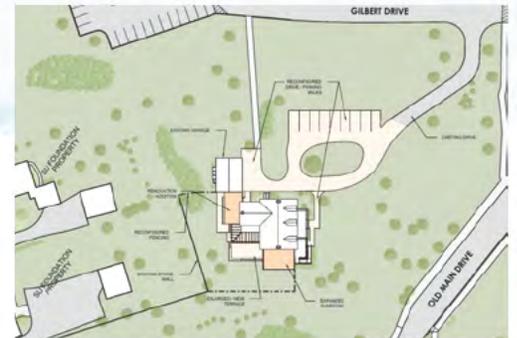
FEASIBILITY STUDY

October 2011



Prepared for:

Shippensburg University
Shippensburg, PA



Murphy & Dittenhafer
ARCHITECTS



Prepared by: **Murphy & Dittenhafer Architects**

226 West Market Street York, Pennsylvania 17401 717-848-8627

www.murphdittarch.com

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1.0 Introduction

1.0 INTRODUCTION

1.1 Purpose of the Feasibility Study

This study documents existing deferred maintenance needs, identifies near-term cyclical maintenance needs, and identifies existing program/ operational deficiencies of the Martin House, located at Shippensburg University in Shippensburg, Pennsylvania. The Martin House serves as the official residence for the president of Shippensburg University. Based on this study, the University proposes to improve and update various physical and functional conditions of the residence to provide appropriate accommodations and to serve the various functions of an official residence.

The information presented in this report is based upon Murphy & Dittenhafer Architects' feasibility investigation and analysis process which occurred from May-August 2010. This analysis found that the types of existing spaces within the Martin House are readily adaptable to a variety of hosted events and to the recommended improvements to the existing spaces and physical plant.

Subsequently, Shippensburg University requested that Murphy & Dittenhafer examine in greater detail the probable renovation construction scope of work and potential financial feasibility of rehabilitating/ renovating the Martin House. This Feasibility Study provides a comprehensive assessment of all of the necessary architectural and engineering remediation/ improvement aspects in order to develop a range of renovation scopes of work. Preliminary cost data has been developed for all aspects of the project to enable Shippensburg University to consider a comprehensive and individualized rehabilitation project.

1.2 Consultant Team

The Murphy & Dittenhafer Team was headed by Frank E. Dittenhafer, II, FAIA, LEED AP, principal of Murphy & Dittenhafer Architects of York, Pennsylvania, and Baltimore, Maryland. The team also included Todd Grove, AIA, Architect; Bruce R. Johnson, AIA, LEED AP, Architect; Jennifer Line, Associate AIA, LEED AP, Architectural Designer; and Nathan Derr, Associate AIA, Architectural Designer. Kent Hoffman, P.E.; Gary Funk, P.E.; and Jason Borowski, LEED AP of Schlenger/ Pitz & Associates of Shrewsbury, Pennsylvania, Timonium, Maryland, and Selbyville, Delaware, were responsible for mechanical/ electrical/ plumbing and fire protection consultation. Lawrence R. Baker, Jr., P.E. of Baker, Ingram & Associates of Lancaster, Pennsylvania, Dover and Newark, Delaware, Haddon Heights, New Jersey, and Centreville, Maryland, were responsible for structural consultation.

1.3 Acknowledgements

Murphy & Dittenhafer Architects is solely responsible for this report and its findings. The recommendations herein would not have been possible, however, without the commitment and involvement of a number of individuals and departments. Murphy & Dittenhafer would like to thank President William N. Ruud, Dr. Denny Terrell (Vice President for Administration and Finance), Mr. Lance Bryson (Associate Vice President for Facilities), Mr. Terry Starr (Associate Director for Facilities), Mr. Bill Lense (Associate Director for Facilities), Mr. Nick Iula (Food Services Manager), Mr. Robert Best (Food Services Manager), and the Facilities staff of the University for their input and direction.

The future potential of the Martin House as an outstanding residence in which the Shippensburg University President and his/her family may provide an appropriate setting to host special University events is excellent—and achievable within PASSHE guidelines. We greatly enjoyed our part in this Feasibility Study process and look forward to further assisting Shippensburg University with developing the final design for this exciting project.

2.0 Executive Summary

2.0 EXECUTIVE SUMMARY

Purpose – Shippensburg University has undertaken this Feasibility Study to identify existing deferred maintenance deficiencies, near-term cyclic maintenance needs, and existing program/ operational needs at the official residence of the University president. The proposed recommended alterations, rehabilitations, additions, and system upgrades, were developed to address the needs of the house as both the official private residence of the University president as well as to provide appropriately functioning public facilities for official University events and functions.

Goal - The goal of the Study was to take a comprehensive, long-term view of a range of proposed building rehabilitations/restorations/replacements through consideration of multiple options leading to a more fully developed renovation scope that considers a “menu” of potential design/construction/cost development approaches for Shippensburg University to pursue.

Activities – The Consultant Team met with Shippensburg University representatives and reviewed University data and information regarding the existing facility systems and needs. The Architectural/ Engineering team then undertook multiple site visits, reviewed applicable building and construction codes, confirmed the proposed programming, developed Concept Design drawings and a detailed proposed scope of rehabilitation work, and prepared a Preliminary Statement of Probable Construction Costs for the University’s consideration.

Concept Plan – The proposed rehabilitation/renovation concept plan satisfies existing deferred maintenance needs, provides for near-term cyclic maintenance needs, and provides solutions to the identified functional shortcomings to accommodate special public University functions. Minimal expansion and renovations to key functional aspects of the building areas, including the kitchen/pantry, sunroom and guest suite, allow the residents to better utilize the house as a private residence and to better utilize the residence for hosting University events. The concept design approach considers the building renovation in the following two physical sections: 1) the first floor to serve both private and public functions, and 2) the basement, second and third floors to serve as a private residence for the president of Shippensburg University. The concept design is based on detailed program information provided by Shippensburg University and other sources.

In Conclusion – Based on the information and material presented within this report, the Feasibility Study/Concept Design demonstrates the ability to successfully address identified deferred maintenance deficiencies, provides for near-term cyclic maintenance needs, and accommodates improvements in program/ operational needs related to the Martin House.

3.0 Process

3.0 PROCESS

3.1 Study Goals

Shippensburg University commissioned Murphy & Dittenhafer Architects to prepare a comprehensive feasibility study for the renovation of the Martin House located on the campus of Shippensburg University in Shippensburg, Pennsylvania, considering a range of proposed project rehabilitations/renovations to address deficiencies including deferred maintenance, building material component lifecycle repair/ replacement, system improvements, and energy usage aspects of the historic residence. The information and ideas developed in the study were used to determine a focused preliminary statement of probable budget costs for the proposed work at the historic official residence.

3.2 Scope

The defined scope of the Feasibility Study/Concept Drawings was to develop a range of rehabilitation/ renovation scopes of work, considering deferred maintenance, lifecycle issues, system deficiencies, and essential renovations, as well as integrating supplementary information gathered during programming and existing building investigation. The comprehensive renovation design developed through this process will enable Shippensburg University to review all of the project parameters and will assist the University in making an informed decision regarding the best direction in which to proceed with any future building improvements and renovations.

The supplementary information and comprehensive understanding was gathered from the following detailed investigations:

- In-depth program discussions with Shippensburg University including the facilities and maintenance staff personnel, administration representatives, and campus food service personnel.
- Additional survey work of the building exterior involving a closer examination of site issues and the condition of the exterior envelope components.
- Additional survey work of the building interior including structural conditions, stairs and circulation, existing building systems, and finishes
- Application of current IEBC code requirements including ADA compliance
- Field survey and evaluation of the existing mechanical, electrical, and plumbing systems with respect to their age, condition, and suitability for continued use as part of the intended building use.
- Research of Historical and State level review processes and approvals.

The information facilitated M&D's preparation of the following documents:

- Component lifecycle evaluations and recommendations.
- HVAC systems assessment and recommendations.
- Structural systems assessment and recommendations.
- Concept drawings and preliminary outline descriptions of the project renovation scope of work based upon the range of possible renovation approaches.
- Preliminary Statement of Probable Budget Construction Costs.

3.3 Activities

The key elements of the process were:

Department/User Interviews and Work Sessions – The team conducted extensive interviews with University personnel and facilities and food services department staff members to gain a complete understanding of the deficiencies and non-functioning aspects of the house.

Site Visits and Survey Work - The team completed several field visits on various occasions, including observing a hosted social event, to further study specific areas and aspects of the Martin House. In addition to further familiarizing themselves with the physical condition of the building in relation to any proposed rehabilitation and renovations, the team also evaluated approaches to separating public and private functions within the building.

Historical Research and Fact Finding – The team researched the historic structure as well as the state and local review and approval processes for any proposed alterations.

Deferred Maintenance and Cyclic Maintenance Considerations – Drawings of the last renovation to Martin House were reviewed to determine the extent of existing building components not replaced during the last renovation of the building. University officials also provided a deferred maintenance listing and listing of near-term cyclic facility needs. The team incorporated these into their project approach.

Programming Considerations – Shippensburg University officials provided confirmation of the proposed programming in addition to desired updating and/ or re-organizing of various key functional spaces within the Martin House. Murphy & Dittenhafer conceptualized additional component pieces that might be relevant in augmenting and enriching the desired short and long term programming and perceived how these pieces could be organized within the space available.

Preparation of Preliminary Statement of Project Budget Costs – Based on the preferred approach as selected by the University and the related scope of work, there was an initial exploration of the potential costs for the essential comprehensive scopes of renovation work. Utilizing their extensive experience with local project construction costs for similar building renovations, the Murphy & Dittenhafer team prepared a preliminary statement of the project cost, including contingencies, permit fees, FF&E, and soft costs.

4.0 Identification/Determination of the Needs

4.0 IDENTIFICATION/DETERMINATION OF THE NEEDS

4.1 Program for the Martin House

As result of the many interviews, work sessions, reviews and discussions held with all of the Martin House stakeholders throughout the study period, various quantitative and qualitative aspects of the historic residence were reviewed and analyzed in detail to determine ability to provide for the current/contemporary needs of a 21st century university president's residence.

A thorough inspection and evaluation of the residence's historic building components and materials was carried out to determine the need for repairs and to address deferred maintenance items.

A thorough analysis and evaluation of all of the home's mechanical, electrical, plumbing, life safety, and other miscellaneous systems was carried out, including evaluation of the home's energy efficiency, long-term sustainability, and life cycle reviews of all systems, components and elements in order to determine the best course of action regarding assessment of identified deficiencies.

The size, arrangement, layout, function, and overall appearance, of all spaces were evaluated. The overall interior appearance of rooms and finishes was analyzed for appropriateness in both providing for a minimum level of quality and durability expected to be found in the home for a university president and, in the case of the Martin House, the provision of historically appropriate interior and exterior elements/ components for a stately historic residence circa 1908.

Through this process, the following specific program elements have been developed and identified as needing to be addressed as part of a comprehensive Martin House renovation/ repair/ rehabilitation/ addition project addressing both "Private Residence" and "Public Event Space" deficiencies:

1. Common Priority Items:
 - a) Exterior building component upgrades/ restoration/ replacements, including roofing and gutters, exterior painted wood cornice and other trim, wood windows, brick cracks, wood railings, French doors, garage doors, lighting, etc...
 - b) Interior building component and finishes upgrades/ restoration /replacements, including wood, carpet, tile and/ or vinyl sheet flooring; bath upgrades including countertops, cabinetry and lighting; window treatments, wall coverings in various spaces, furniture, gas log fireplace, etc.
 - c) Site and grounds component improvements, including driveway/ drop off and parking areas conditions, appropriate landscaping and walkways, ramps, lighting, location of mechanical equipment, enlarged fenced area, and rear deck.
 - d) Upgrades and improvements to various aspects of the mechanical, electrical and plumbing systems including energy efficiency features, upgraded controls and zoning, A/C in the kitchen, A/C at the third floor guest suite, etc...
 - e) Water infiltration in the basement.

- f) Other miscellaneous items and aspects of the residence including insufficiency of closet/ storage space, headroom at stairs to the third floor, out-of-level third floor stair and floor, and insulation at the attic.
2. Crossover items:
- a) General overall use of the first floor:
 - o Kitchen: Floor area of the kitchen is reported to be adequate, but consideration should be given to other arrangements/layouts, to better accommodate and improve both residence and public event activities and usage. Improve available counter/worktop space for food service activities for public functions. Appliances and condition of the cabinetry are adequate for both private and public function usage. Area for a “breakfast” table is desired and should be maintained. Carefully consider aspects of circulation.
 - o Kitchen pantry/food service support space: There is a need to improve this aspect of the kitchen area and usage, including the need to provide storage for some event items in a more permanent manner on site, have a “landing” area during pre-function food delivery/ set up and tear down activities, need for counter or tabletop space to organize activities in connection with public functions, and need for a pantry space for the private use of the house residents.
 - o Dining Room: Size is adequate for daily family usage if desired as well as for both small dinner and larger buffet style public university serving events. Direct relationship to kitchen is adequate.
 - o Small sitting room: Furniture arrangement and use is difficult during events due to circulation required through the space to get to the dining room and the fact that the space is adjacent to the front door entry. The room is currently infrequently used as part of the day-to-day private use of the residence.
 - o Living Room: This space is furnished for the day to day use of the house including sitting, talking, reading, listening to music, and television watching. The room is also the main sitting and standing space for public functions. The size and proportions of the space, in addition to the location of the fireplace/TV, create furniture placement challenges and under-utilization. Circulation at the “edges” of the space is beneficial.
 - o Sunroom: the size and proportion of this space result in under-utilization as either a pleasant, private residence sitting space, or additional sitting and standing space during public receptions/functions. Direct access to the outdoor deck space is useful during public functions but challenging due to size/capacity/circulation issues.
 - o Powder Room: This room is used as the main “public” bath for official functions. It is poorly located in the main flow of circulation. This location does not offer the privacy needed. A better, slightly more private/ out of the main circulation flow option is desired if available. The current room is not handicapped accessible.

- Exterior deck: The deck serves as a space for hosting outdoor university events and functions and provides for private outdoor sitting, entertaining, and grilling space for the residents. The architectural style of the deck poorly complements the historical aspects of the primary residence. Improvements to this area could include a stone terrace instead of stained wood deck, additional areas for sitting and standing during public receptions, a permanent, built-in grilling/ cooking function, and improved layout and circulation in connection with the “beverage bar” during events.
- b) Use of the Second Floor: Surprisingly, the previous renovation to the Martin House eliminated the master bedroom closet. Additionally, the shared bathroom on this floor needs to be updated due to lifecycle of the existing installed building systems.
- c) General overall use of the Third Floor:
 - Guest Suite: This space provides overnight accommodations for private and official University guests. Deficiencies include raised floor and step-up to the bathroom (i.e. no ADA accessibility); reduced room efficiency due to low dormer headroom; layout/ bed placement difficulties; insufficiency of closet space; and life cycle reached for floor, wall, and ceiling finishes.
 - Attic Storage/Mechanical Room and Closet Spaces: Organize the area to better utilize as private and official storage and to serve as an important required mechanical equipment space.

5.0 Evaluations of the Conditions of the Existing Residence

5.0 EVALUATIONS OF THE CONDITIONS OF THE EXISTING RESIDENCE

5.1 Site

The Martin House is located toward the edge of campus. The surrounding land stretches from Gilbert Drive along Old Main Drive to North Earl Street (PA route 696). Located to the north of the Martin House is Gilbert Hall of Shippensburg University. To the west is a small housing development and to the east is the Steam Plant of Shippensburg University. The Martin House is highly visible particularly along Old Main Drive and is complemented by the surrounding landscape.

A small but pleasant landscaped lawn is located to the side/rear of the home adjacent to an exterior deck and provides a private exterior area. The existing bituminous paved driveway leads to a three-car garage and also provides for a limited amount of on-site parking for special University event guests.

5.2 Architectural

The Martin House, built in 1907-08 and located off of Gilbert Drive at the campus of Shippensburg University, is occupied by the President of Shippensburg University, currently Dr. William N. Ruud. The existing building is constructed with masonry exterior bearing walls and interior wood joist framing and has a total gross area of 9,170 square feet. The building is composed of three floors and a basement with a crawl space (See existing basement, first, second, and third floor plans).



East Elevation

The first floor of the Martin House is used for special events and small gatherings of up to 70 people. The first floor is also used as the president's family's main living spaces, dining room and kitchen, and laundry rooms. All of the bedrooms for the president's family are located on the second floor. The third floor doubles as a guest bedroom and mechanical and storage space. Mechanical space and more storage space are located in the basement.

The existing front entrance faces east towards Old Main Drive and leads into the main stair hall. The southern portion of the hallway leads to the living room and sunroom. To the north of the main hallway is the sitting room and dining room. Off of the hallway are a powder room, the breakfast room, and kitchen with a side pantry. Another stairway is located off the pantry leading to the second floor. Adjacent to the breakfast room is the laundry room and rear

entrance leading to a three-car garage. To the south of the breakfast room is a small wooden deck.



Living Room



Sitting Room



Dining Room



Kitchen

The basement is accessed from the main hallway. To the south is the boiler room. To the north is storage space with access to the outside through a basement door. A crawl space is located beneath the west portion of the house.



Stair to First Floor



Boiler Room

The second floor is accessed from two staircases from the first floor and both lead to the central hallway. To the east is access to the deck above the front porch. Four bedrooms are located to the north of the central hallway with a bathroom accessible to the west. The master suite including a master bath, bedroom and study are located to the south of the central hallway.



Stair/Hallway



Master Study

The third floor is accessed from a single staircase from the central hallway. Storage and mechanical spaces are accessible from the hallway and a guest bedroom and bathroom are located in the southeast corner of the third floor.



Guest Bedroom

The overall condition of the 1908 residence is good and has benefited from the ongoing maintenance programs of the University. The structure is now exhibiting systemic problems that are beyond the routine/typical abilities of University maintenance staff to address. The following elements and/ or building components and systems have been identified as requiring rehabilitation and/ or specialized rehabilitation and restoration work:

Brick Facades: While in overall good condition, the brick veneer is exhibiting cracking at various locations—such as at window openings and corners. Water is permitted to enter at these locations and will cause on-going deterioration of the brick and back up wall construction, and can promote mold growth within the construction.



Brick lintel movement



Brick lintel and veneer missing mortar

Windows: The existing single pane, painted, wood windows appear to be original to the house and include exterior aluminum storm windows. Glazing is aged and falling out. In some cases the wood framing has rotted and needs to be rebuilt. The windows do not meet modern standards for energy efficiency. The wood frames, while keeping with the original wooden construction, require a high level of ongoing maintenance. The exterior storm window assemblies are ugly and detract from the original historic appearance of this otherwise stately residence.

Roof & Gutters: The existing high main roof is an asphalt fiberglass shingle system. The roof has been exhibiting problems of the shingles becoming detached and sliding down into the gutter systems (overdriven nails suspected). On-going maintenance is required and leaking is a constant concern. The roofing shingles were replaced in 1995; the roof sheathing was not replaced then. The roof system is now nearing the end its expected useful life. Lower roofs are standing seam metal and while they have been water tight over the years, they shed water over the top of gutters. The downspout system is not adequately handling the water quantity in a number of locations and is contributing to overflow problems.



Missing roof flashing



Detached shingles and poor gutter drainage

Historic Wood Cornice: A careful inspection of the wood elements revealed that parts of the cornice are deflecting and deteriorating – primarily the soffit board and fascia. It is becoming more difficult to paint with each successive painting cycle (more and more extensive filler, sealant and preparation). The main decorative brackets and dentil work are not exhibiting as much deterioration.



Deteriorating cornice



Deteriorating cornice

Miscellaneous exterior wood trim/ porches: Existing front and small rear porches, as well as the sunroom, are constructed of historically accurate wood components and are distinguishing features of the historic home. These components are deteriorated at various locations and are ongoing maintenance problems.



Front porch roof wall connection



Deteriorated front porch roof

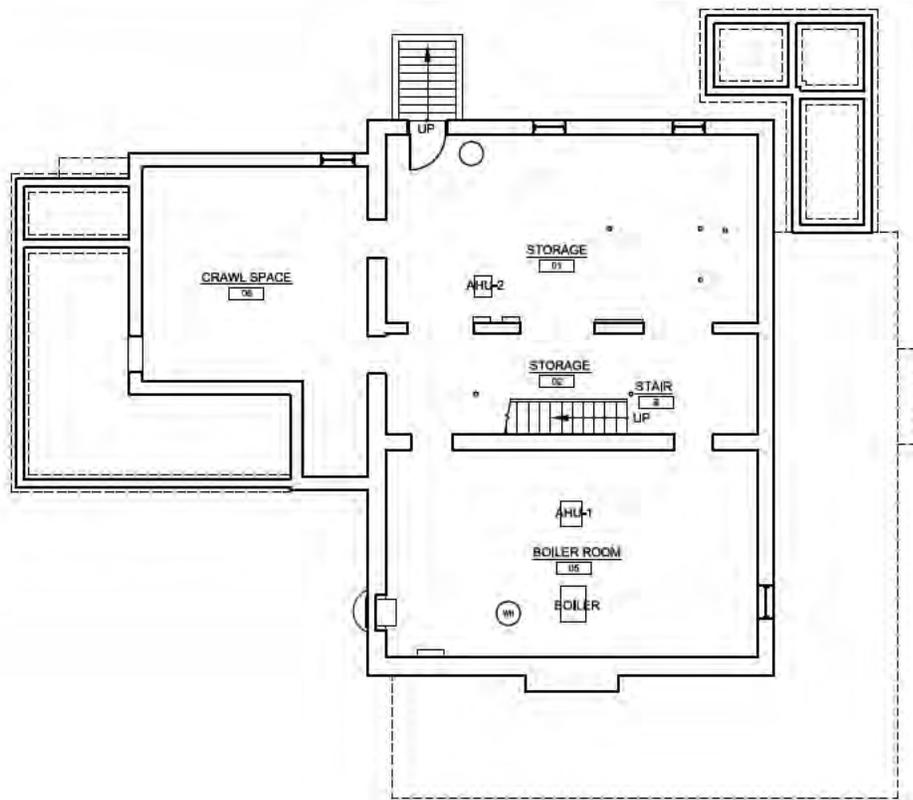


Separating front porch pilaster



Deteriorating handrail and brick corner

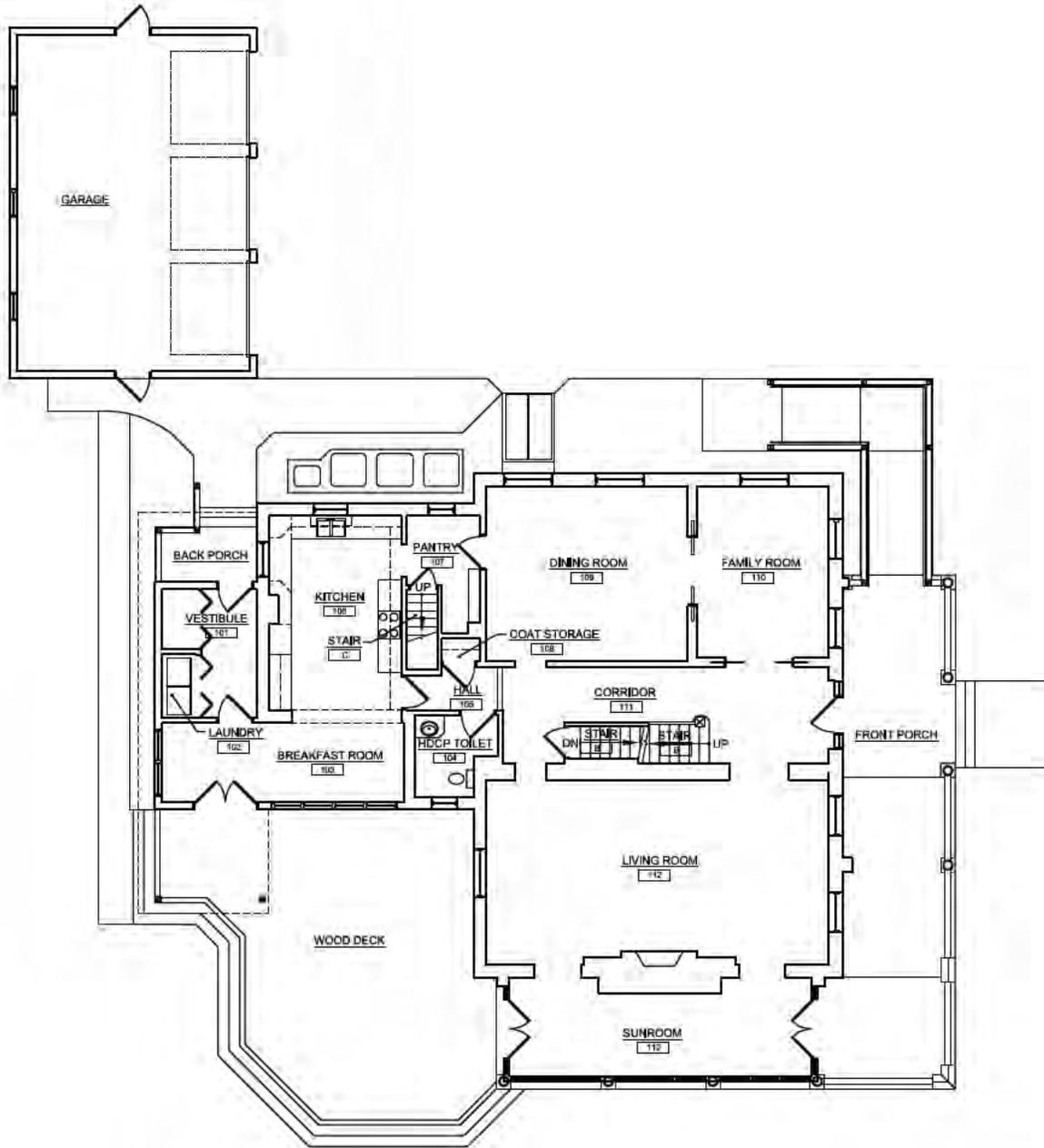
Patio Area: While the overall condition of the patio area is below average, it is used heavily during public University events. The current size of the patio is inadequate for food service and as a gathering space during events. It is difficult for guests to circulate during outdoor catered functions.



EXISTING BASEMENT FLOOR PLAN



SCALE: 1/16" = 1'-0"

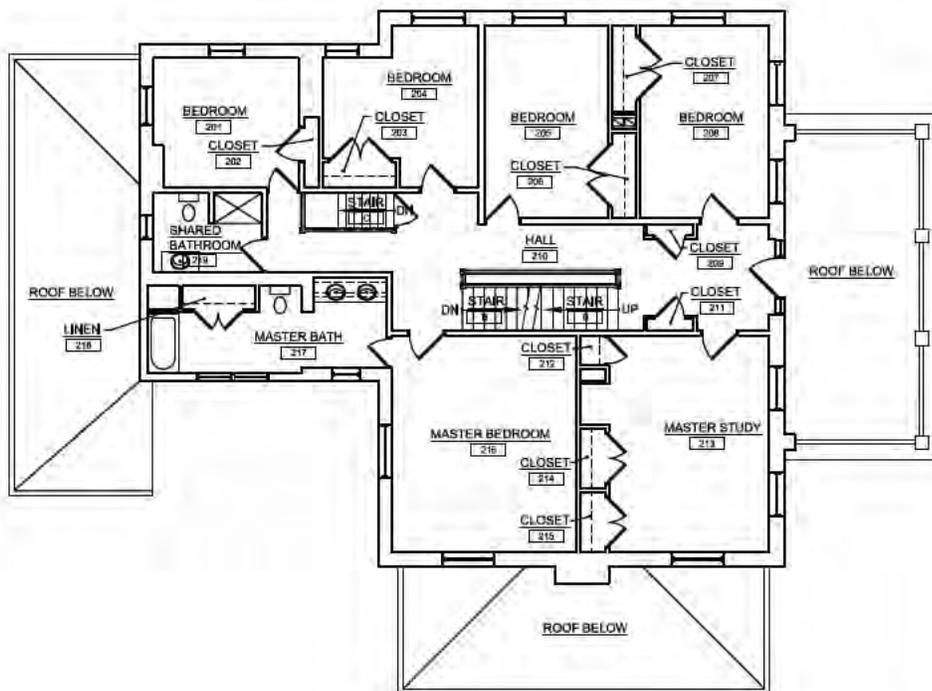


EXISTING FIRST FLOOR PLAN



SCALE: 1/16" = 1'-0"

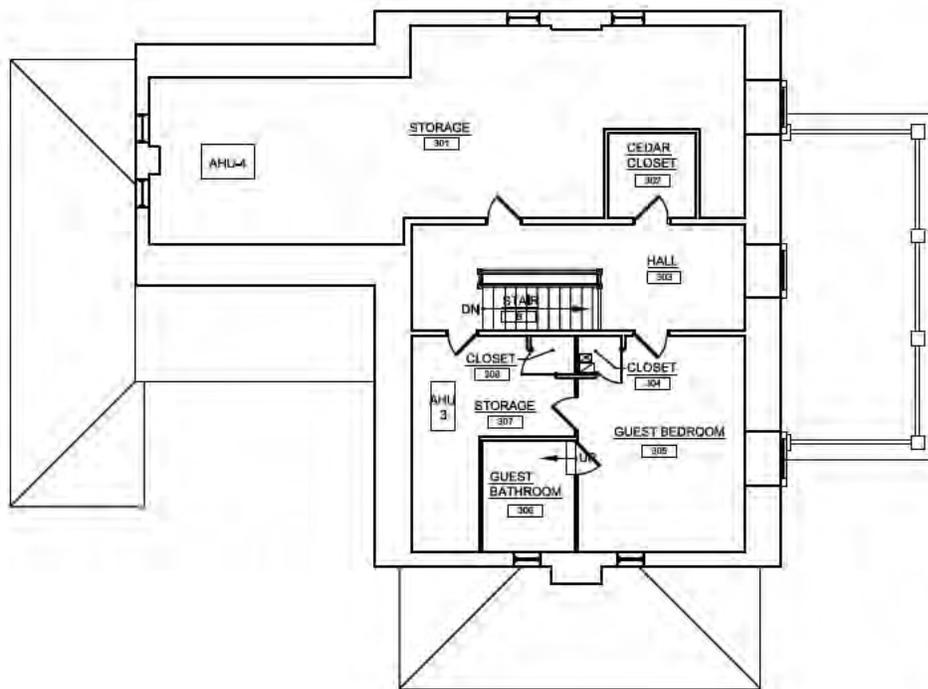




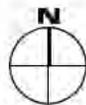
EXISTING SECOND FLOOR PLAN



SCALE: 1/16" = 1'-0"



EXISTING THIRD FLOOR PLAN



SCALE: 1/16" = 1'-0"

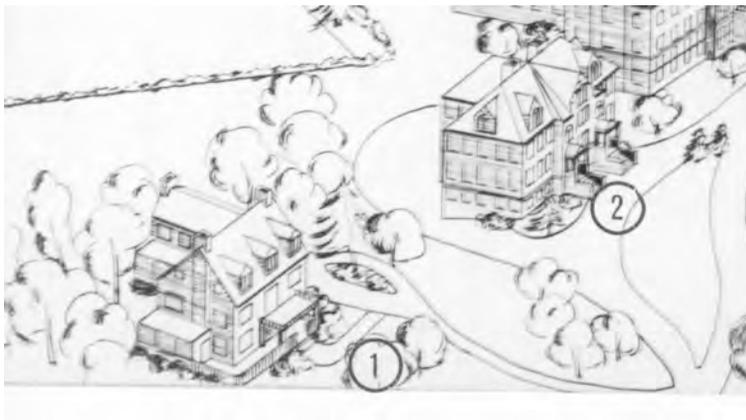
The Martin House – Historic Photographs



Historic photograph



Historic artist rendering



Historic artist rendering

The Martin House – Exterior Photographs



East Elevation



Northeast View



North Elevation



Garage East Elevation



Northwest View



West Elevation



Garage South View



Southwest Elevation



Southwest Elevation



Southwest Elevation



South Elevation



Southeast Elevation

The Martin House – Interior Photographs



Basement – boiler room



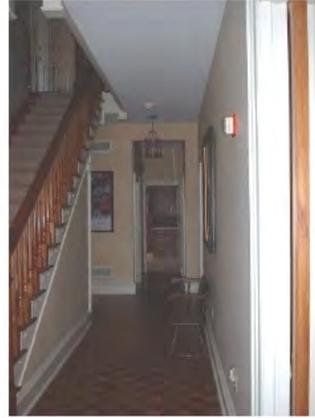
Basement – storage



Basement – storage



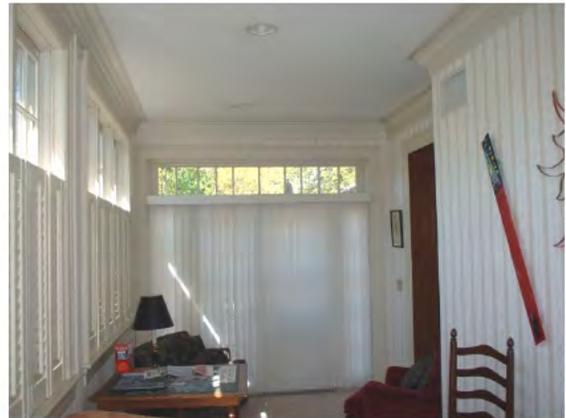
First Floor – entry



First Floor - hall



First Floor – living room



First Floor – sunroom



First Floor – sitting room



First Floor – dining room



First Floor – powder room



First Floor – breakfast room



Second Floor – stair to first floor



Second Floor – bedroom (exercise) 205



Second Floor – bedroom 204



Second Floor – bedroom 203



Second Floor – bedroom 202



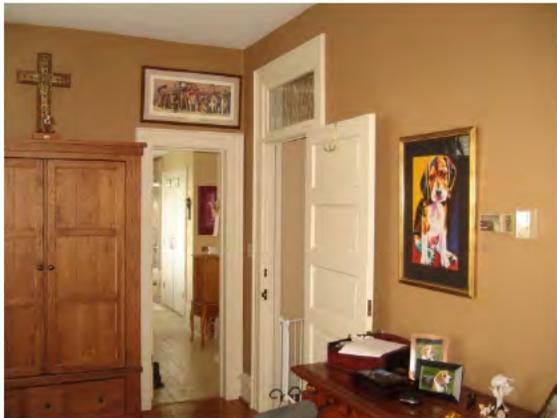
Second Floor – common bath



Second Floor – master study



Second Floor – master study



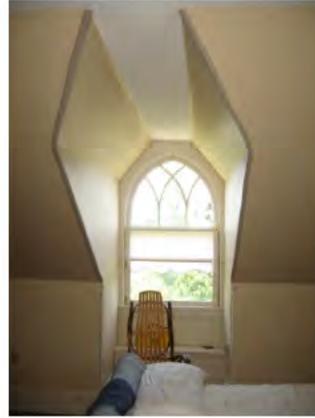
Second Floor – master bedroom



Second Floor – master bedroom



Third Floor – hall



Third Floor – guest bedroom



Third Floor – guest bath



Third Floor – storage/mechanical room



Third Floor – storage/mechanical room



Third Floor – storage/mechanical room

5.7 Mechanical/Plumbing

1. Existing Systems

The building is currently served by (4) split system heat pumps each consisting of an outdoor heat pump and indoor fan coil unit with associated distribution ductwork and air devices. Each indoor fan coil also has an associated electric/steam humidifier, which university maintenance personnel have disabled. While the heat pumps were Energy Star rated at the time they were installed, at 12 SEER they do not meet the current minimum requirement of 13 SEER for this type of equipment. Additionally, at 15 years old, this equipment is approaching the end of its anticipated service life. Based on conversations with the university personnel, at least three of the units (one serving the third floor guest suite, one serving the majority of the second floor bedrooms and one serving the kitchen) have difficulty maintaining desired space conditions. A window air conditioning unit has been installed in the third floor guest suite to supplement the existing system.



Existing Heat Pumps

Heating for the building is provided by a central boiler plant located in the basement of the building. The boiler plant serves hot water heating coils associated with each of the indoor fan coils as well as perimeter baseboard heaters located throughout the building.



Typical Baseboard Heater

No complaints were received about the operation of the boiler and based on its age and a non-intrusive visual inspection; it appears to have useful service life remaining.



Existing Boiler

The building is also served by an energy recovery ventilator located in the basement. This unit provides fresh air to each of the (4) indoor fan coils as well as providing air changes for the basement and attic space. No complaints were received about the operation of the ERV, and based on its age and a non intrusive visual inspection, it appears to have useful service life remaining.



Existing Energy Recovery Ventilator

2. Building Controls

While the university has a campus-wide energy management system this building, with the exception of the central plant and perimeter baseboard heat, has not been integrated into the campus system. The split system heat pumps and energy recovery ventilator operate on standalone controls. This prohibits the facilities maintenance department from receiving any alarm conditions indicating problems with the equipment, or from obtaining trending data which could be used to analyze system performance and make operating changes to increase system efficiency.



Existing Control Devices

The existing perimeter baseboard heating loop is served by a single temperature sensor located in the living room. This leads to poor control of this system as individual spaces may be over- or under- heated depending on what the living room sensor is reading and actual load conditions for the space.



Perimeter Baseboard Sensor

During our discussion with the university facilities group, it was discovered that the heat pump mode for the existing units is not used, except in emergency situation in which the boiler plant is down. Heat pumps are very efficient down to around 40-45 deg F in the heating mode, an efficiency that is not being taken advantage of with the current operating sequence.

3. Kitchen Hood

The kitchen range is served by a commercial-style range hood. This hood exhausts a significant amount of air with no makeup air source present. Currently it is believed that the hood is drawing makeup air in thru the existing windows. However, with new windows being proposed as part of the renovation, this makeup air path will be cut off. All three university groups with which we met indicated that the space does not maintain temperature when the hood is in operation. Lack of sufficient make up air for the hood is a major factor in the inability to maintain desired space temperature.



Existing Kitchen Hood

5.8 Electrical

1. Existing Systems

The main electrical service entrance panels are located in the basement boiler room near the corner. The service is rated at 225 amps, 120/240 volts, single phase, three wire and consists of (2) GE 'A' Series circuit breaker panels. Panel section '1R' contains a 225 amp main circuit breaker and 42 breakers/pole spaces. Panel section '1L' is a main lug only and also contains 42 breaker/pole spaces. The electrical service is protected by a Leviton transient voltage surge suppressor (TVSS) at the main panel.



Main Electrical Panels and TVSS

The electrical meter is located on the exterior corner of the building at the first level wooden deck. The JCP&L utility meter is number 507 004151. The electrical service secondary appears to be extended underground from a pad-mounted utility transformer at the adjacent building. University personnel have indicated that the electrical panels were installed in approximately 1995. The building's interior wiring system was modified throughout with nonmetallic sheathed cable NMC (Romex) at this time. Wiring visible in exposed areas was installed in a neat and proper manner. Receptacle outlets are provided throughout the building in code-required locations. Outlets are 3 wire grounding type and Ground Fault Circuit Interrupter (GFCI) type and are installed where required. In some locations it appeared that TVSS receptacle outlets were also installed to provide a secondary level of protection for sensitive electronic equipment.

Lighting in the building is provided with a combination of ceiling lighting fixtures and switched receptacle outlets serving table or floor lamps. Ceiling lighting consisted of decorative pendants, chandeliers, track lighting and recessed downlights furnished with incandescent lamps. Fluorescent strip fixtures were provided in utilitarian areas of the basement and third floor. Exterior lighting is provided with decorative traditional wall mounted fixtures, decorative pendant fixtures, damp location recessed downlights, standard cast socket base flood lamps and post top traditional fixtures. The post top fixtures are utilizing screw base fluorescent coil lamps and all other fixtures appeared to have incandescent lamping.

2. Fire Alarm System

The main fire alarm control panel is a Cerberus Pyrotronics model SXL and is located in the basement. The fire alarm appears to be a non-addressable system installed in approximately 2000, while it meets current codes, University standards require an addressable system to be installed. This fire alarm system is a 4/8 zone conventional wiring type system. A small remote annunciator with LED indicator lights is installed near the kitchen vestibule door. The building is protected throughout by automatic detectors such as smoke detectors in most rooms and heat detectors in mechanical and kitchens areas. Audible/visual (horn/strobe) devices are provided on each level typically in the stair hall. The system is monitored by Shippensburg University Police.



Fire Alarm AV Device and smoke detector. Security motion sensor.

3. Security System

The building is also protected by a Maxsys hard wired security system. The system appears to be from the 1995 renovation and is inadequate to meet current needs. The main control panel is located in the basement adjacent to the Fire Alarm control panel. A remote keypad is installed near the Kitchen vestibule door and also at the second floor landing. PIR type motion detectors are installed throughout the building for security coverage and alarm initiation. Door switches were evident at the first floor entry doors. It is possible that some devices are wireless RF type.



Security and Fire Alarm control Panels

4. Telephone and Data System

The building is provided with a fiber optic network connection to the University. The building is furnished with a wired and wireless network system. The telephone, data and CATV head end equipment is located in the basement.

Wireless access points are located in the basement and third floor level. Hard wired outlet jacks are located in most rooms and consist of data and CATV connectors. The telephone system utilizes VOIP technology.



Telephone/Data and CATV Head end equipment.

5.9 Structural

1. Attic and Third Floor

- a. The original roof framing, viewed from the attic access hatch, appears to be in generally good condition. Framing consists of 2x8 rafters at approximately 24 inches on-center. We observed one split rafter. See Photographs 1 and 2.



Photograph 1 – Attic framing.

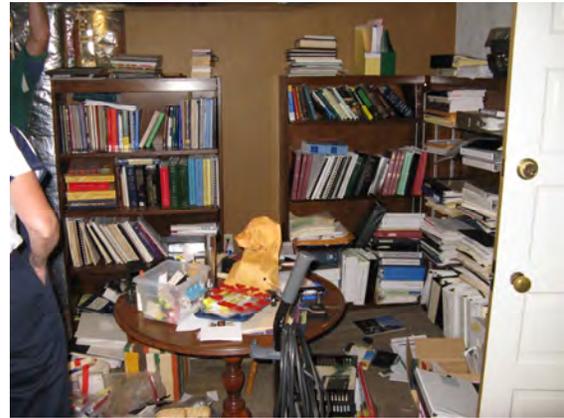


Photograph 2 – Split rafter.

- b. New mechanical equipment was added in 1995. An air handler appears to be suspended from third floor ceiling joists. We do not know if existing framing was reinforced to support this equipment. See Photograph 3.



Photograph 3 – Air handler suspended from attic or roof framing.

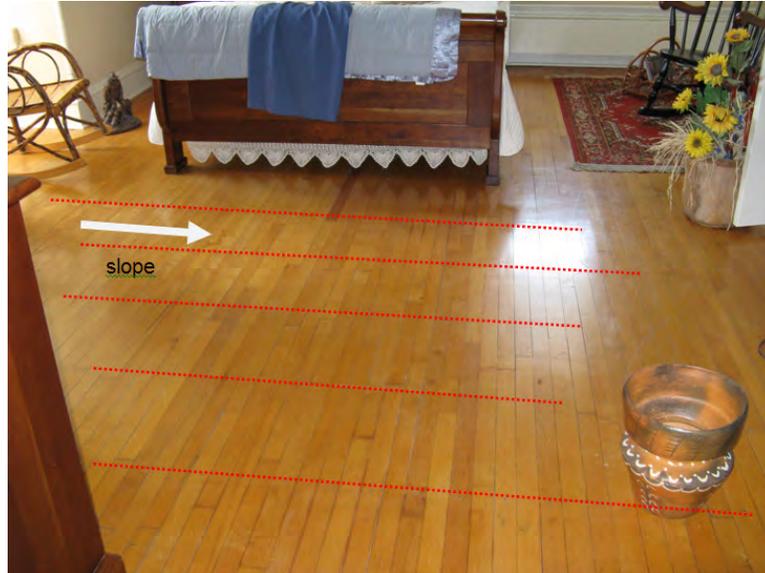


Photograph 4 – Paper, books, and notebook storage on third floor

- c. The rooms on the north side of the third floor are used as storage rooms. A concentration of books, notebooks, and file cabinets occurs in a small area of the larger room. A separate smaller room to the east is used as clothing storage. Although no distress was observed, this historic structure was not designed for this loading. See Photograph 4.
- d. The floor of the Guest Bedroom is noticeably sloped down to the center of the room. See Photograph 5. Nails have been installed from the surface of the finish flooring into joists spanning east-west in an attempt to minimize squeaking. The floor joists span from the east wall to a partition wall on the second floor between the study and the Master Bedroom. This second floor partition is then supported on concealed beams in the first floor Living Room ceiling.

No distress in any wall or ceiling was observed. The bearing partition wall on the second floor appears to be slightly tapered at the top with no visible distress. This indicates that the slope probably existed at the time the wall was constructed.

The deflection in the Guest Room floor is likely due to a combination of initial sagging of the timbers, the size of the floor framing, and the accumulation of loads causing long-term deflection of the framing. Sleeping room framing in similar historic structures of this period is typically 2x8 joists at 16 to 24 inches on-center.



Photograph 5 Sloping Guest Room floor showing nail lines.

- e. The stairway between the second and third floor slopes to the open side of the stair, particularly at the third floor landing area. No distress in the wood trim or in the plaster soffit is visible. See Photograph 6.
2. Second Floor Framing
 - a. No portion of the second floor framing was visible. We did not observe any distress in the plaster ceiling of the Living Room. Beams supporting the bearing walls above are concealed within the depth of the floor assembly.
3. First Floor Framing
 - a. The first floor framing consists of 3x10 joists, spaced at 16 inches on-center, and supported by stone foundation walls and a mix of interior brick piers, walls, and built-up timber girders. There are additional steel posts and shoring beams supporting the framing at the stair opening, below the Dining Room partition, and below the front of the Family Room. See Photographs 7 and 8. We do not know when these elements were installed.
 - b. Joists with wood-boring insect damage were observed. See Photographs 9 and 10.
 - c. One floor joist was locally cut by the installation of a duct.
 - d. The stone foundation walls appear to be in relatively good condition with no obvious signs of structural fatigue or failure. Portions of the wall are damp.



Photograph 7 Shoring below Family Room



Photograph 8 Shoring below first floor



Photograph 9 Insect damaged first floor joist at north wall.



Photograph 10 Insect damaged first floor joist, southeast corner.

4. Exterior Masonry

- a. The exterior walls are multi-wythe brick. Window lintels are flat-arches with a limestone keystone. A number of flat arches have failed, particularly at the first floor on the east elevation. Cracks and displaced bricks also occur above the lintels. Previous mortar patches are visible. No interior wall damage was observed in areas behind deteriorated arches. See Photographs 11 and 12.



Photograph 11 Flat arch lintel above north-east Family Room window.
Note out of plane movement



Photograph 12 Flat arch lintel above south-east Living Room window
Note open joists and deflected arch

- b. A vertical crack exists between the first floor lintel and the second floor sill at the north-east windows.



Photograph 13 Crack in brick above northeast window



Photograph 14 Loose brick south west wall.

- c. A loose brick was observed at the deck level on the south west wall. See Photograph 14.
- d. Three chimneys extend above the roof. The mortar joints in the corbelled brick and concrete caps are loose, and in some areas, missing. Moss is growing on the corbelled brick shelves. See Photographs 15 through 17.



Photograph 15 Top of north chimney



Photograph 16 South chimney



Photograph 17 West chimney

5.10 Historic Information

The Martin House was named in honor of its resident, Rev. Dr. Samuel Martin, who was also the first university president to live in the home. Cherry wood from Dr. Martin's property was used to build some of the interior woodwork elements. Nine presidential families have lived in the Martin House since it was built, and some of the original woodwork still remains. At the time when the Martin House was constructed, Shippensburg University was called 'The Cumberland Valley Normal School'. It is one of the original 5 buildings on the Shippensburg University campus that have been placed on the National Register of Historic Places.

The following is excerpted from the nomination form for the National Register of Historic Places; The Martin House "... was erected in the southwest corner of campus between 1907 and 1908, to house the school's chief executives. This two-and-a-half story brick and gable-roof structure with rear wing, a pattern reminiscent of the area's vernacular dwellings, was designed by Maurice R. Rhoads, a Chambersburg builder-turned-architect who was acquiring a name in the locale.

The Martin House incorporates the Classical themes which were becoming prevalent in the CVNS campus by the early twentieth century. Its cornices feature both dentils and simple brackets, the latter matching those on Horton Hall and Yessler's Old Main. Other key elements include two end chimneys, large front and side porches connected by an open deck and surmounted by simple wooden balustrades, and wide windows incorporating 12/1 sash relations and flat arches with granite keystones.

Three dormers break the Martin House's slate roof. The pedimented center dormer features a rectangular window with diamond panes in its upper sash. And, with other fanciful touches that helps tie the house to the other eclectic campus structures, both of the flanking dormers incorporate Gothic windows with tracery in their upper sash. In a departure from the traditional Classical balance, the fenestration of both the front and the north gable end, like the dormer placement, is noticeably asymmetrical.

During the occupancy of successive Shippensburg presidents, this center hall dwelling has experienced relatively little alteration, either inside or out. The exterior changes include the removal of the Classical urns that originally decorated the front porch balustrades, the shortening of a north kitchen window and the addition ... on the rear wing's south side. The interior still features the cherry woodwork provided by the Reverend Dr. Samuel A. Martin, the principal who guided the house's construction. In the 1930's, a three-stall brick garage with slated gable roof was erected to the north of the dwelling."

6.0 Recommendations / Findings / Concept Design

6.0 RECOMMENDATIONS/FINDINGS/CONCEPT DESIGN

6.1 Featured Elements of the Proposed Layout Improvements, Renovations & Additions

The proposed concept design for the renovations/addition to the Martin House corrects deferred maintenance items, provides for needed life cycle replacement of specific building components and systems, corrects deficiencies and improves the functionality for hosting University events, and provides minimal enhancements to the private residence living space.

6.2 Recommendations

As the Martin House's structure is now exhibiting systemic problems that are beyond the routine/ typical abilities of University maintenance staff to address, the following recommendations have been established to improve the integrity and functionality of the residence:

Brick facades: The deteriorated window heads will require re-building. The cracks in the joints should be raked to remove any loose or deteriorated mortar and repointed with a matching mortar of the same/similar hardness mortar as the existing mortar. See the structural evaluation of this study for more information regarding this subject.

Windows: Energy efficiency and occupant comfort would benefit from replacing the windows with modern aluminum clad, wood windows of a similar type/ appearance acceptable to the historical agencies to match the existing sizes, profiles, and details of the current windows.



Dormer

Roof & Gutters: This roof system should be replaced with a new asphalt fiberglass system with proper underlayment and ice and water shield, and historically accurate zinc/ lead coated copper valley and other flashings as/ where required. The size, location and routing of the gutter system need to be corrected as part of the re-roofing work and any proposed alterations/ additions undertaken.



Roof

Historic wood cornice: A distinguishing feature of the residence is its built-up, painted, decorative wood cornice. The work at the cornices will involve the removal and replacement of the soffit and fascia wood/ boards with high quality painted wood components. Brackets and other trim appear to be adequate and will require scraping, sanding and proper preparation for painting as part of the cornice re-building effort. Some corrective work of the substructure blocking and sheathing should be anticipated.

Miscellaneous exterior wood trim/porches: The railing and other trim pieces must be patched and repaired and in many instances, new matching high quality wood painted components must be fabricated and installed by skilled craftsmen/ carpenters experienced in this type of work.



Second Floor Deck and Railing

6. 3 Interior Scope of Work

In addition to the proposed circulation, room layout, system improvements, and the addition of needed space, deficient qualitative aspects of the interior finishes and appearance should be addressed as part of a comprehensive rehabilitation and restoration. The current interior appearance of the residence includes most of the original room features and finishes listed on the Historical Register. These have been maintained well, and in some cases have been updated by the university, and generally provide for an overall pleasant interior. To address the identified deficiencies, the following items should be included with this rehabilitation project.

Floor Finishes: Most spaces and rooms still maintain their original hardwood flooring (carpeted over in some cases). The wood floors are durable and appropriate to the period house and should be refinished as part of the rehabilitation work since the existing finishes are approaching the end of their useful lives. In the Living Room, which is one of the primary spaces utilized for hosting University events, the wall-to-wall carpet should be removed and the wood floor restored; appropriate area rugs or bound carpets should be installed. In the case of other spaces such as kitchen and baths, vinyl sheet flooring materials were installed as part of past renovations. These finishes were of low quality and durability and are nearing the end of their useful lives.

As mentioned in other parts of this study, the Third floor guest suite wood floor is exhibiting noticeable deflection and the individual floor boards have been face nailed (nail heads are exposed to view) as part of past projects in an effort to stabilize the floor. Other room wood floors have been also face nailed, but do not exhibit abnormal deflection conditions. In the case of the third floor guest suite, this condition will be remedied as part of the reconfiguring of that area for an improved guest suite. In the case of the other rooms, the face nails may remain but should be set and filled and the floors refinished in place.

Historic center stair/Stair hall: The beautiful original historic wood stair is located in the main center hall space and adjacent to the main entry of the home and is in good condition. However, cut pile carpet with limited wearing ability has been installed on the stair. This should be replaced with a quality runner with hold down hardware appropriate to the historic residence. This would also contribute to the overall appearance of the main entry hall and provide the necessary long term durability.

Wall and Ceiling finishes and trim: Walls and ceilings are original plaster with painted and/ or wall covering finishes throughout. These surfaces are in very good condition, do not exhibit extensive cracking, and have benefitted greatly from university on-going maintenance efforts. However, the wall coverings and paint color schemes are outdated and should be replaced in many instances with finishes and wall coverings that would contribute to the desired overall appearance of a historic home and the venue for special University functions.

The 1908 home maintains all of the original historic stained and painted wood base, door, window and miscellaneous trim throughout which is in good condition and should remain as part of the rehabilitation effort.

Updated finishes, cabinetry, lighting and other miscellaneous features, are required and will be installed in the outdated second floor shared bathroom. The first floor powder room utilized by guests at University functions is not accessible per the ADA, is displaying wear of outdated features and finishes, and would be updated with more appropriate, durable finishes such as

solid surface counter tops, tile flooring, improved lighting and fixtures, as well as other miscellaneous features and finishes.

Kitchen breakfast area: To address the determined kitchen area deficiencies, and in addition to the layout changes proposed to improve function and circulation, new finishes in this area include replacing the vinyl flooring with a more durable/appropriate tile or stone flooring material, replacing existing counters with solid surface counter tops, appropriate quality level cabinetry, and improved lighting. The appliances such as the gas range and hood are recent additions and should be incorporated into the work.

Attic insulation: The existing attic is currently not insulated. As part of the new rehabilitation work new R-38 attic insulation is to be installed throughout the entire attic area.

Window treatments: The window treatments including various types and styles of horizontal and vertical blinds, shutters, and draperies, are in various conditions. The various types, in many cases, are neither appropriate nor coordinated throughout the residence to be in keeping with an overall required appropriated interior aesthetic. New window treatments addressing the individual room needs and coordinated with new finishes and schemes should be part of the comprehensive plan for the residence.

Furnishings and furniture: The provision of appropriate furniture and furnishings to address the unique needs of the residence to host special University functions is critical. Proper seating of various types which can be arranged in various manners to accommodate a variety of different types and sizes of events is required in the first floor living/ sitting/ sun room spaces. The seating also needs to provide for the everyday comfort needs of a contemporary residence. Coordination of the finishes and fabrics of these pieces is critical to providing the desired appearance of the rooms and spaces appropriate for the historic nature of the residence, its use as the official private residence, and its use for University special events.

6.4 Mechanical/Plumbing Scope of Work

1. Summary

- a. The Martin House mechanical systems are generally comprised of equipment that has been operated beyond the anticipated service life. Additionally, through meetings with university personnel and site observations, it has been determined that there are controllability and comfort issues currently within the building, leading to inefficient building operation and increased energy usage.

2. Mechanical System Upgrades

- a. Replace the existing 12 SEER split system heat pumps as they are nearing the end of their service life. Replacement units would be 15 SEER to reduce operating costs by using less energy. The units serving the 3rd floor guest suite, the majority of the 2nd floor bedrooms and the kitchen should be evaluated to determine if the available capacity is adequate and the size of the replacement units should be adjusted accordingly. The replacement units shall be relocated to a more appropriate, out-of-sight location indicated on the architectural drawings attached to this report.
- b. Architectural modifications are proposed for the 3rd floor guest suite, sunroom and kitchen areas. The mechanical and plumbing systems serving these areas should be evaluated and modified as required to accommodate the new architecture, including modifications to the 3rd floor guest suite to remove the existing air conditioning window unit.
- c. Several of the air devices are in poor shape and some have begun to corrode. Evaluate the air devices for replacement and replace as necessary.



Existing Air Device

3. Building Controls Upgrades

- a. Integrate the building systems with the campus wide energy management system by Automatic Logic. This will allow for the provision of alarm conditions to notify the facilities maintenance personnel of equipment failures as well as for trending information to better analyze and modify building operation for improved energy efficiency.
- b. Install additional control valves and temperature sensors for the perimeter baseboard system to provide individual zone control to help better regulate individual space temperature.
- c. Modify the operating sequence of the heat pumps to make better use of the efficiency of the heat pump during the certain outside air temperatures. The existing outdoor temperature sensor associated with the boiler to operate the heat pumps in heat pump mode down to a certain outdoor air temperature (adjustable). Below a certain outside air temperature, heating shall be accomplished by the hot water coil associated with each unit.

4. Kitchen Hood Makeup Air

- a. In order to provide make up air for the kitchen hood, a new duct shall be installed off the existing ERV with a motorized damper that is normally closed. When the kitchen exhaust hood is switched on, motorized dampers in the existing ductwork shall close, and the motorized damper in the new duct shall open to divert air off the ERV to be used as make up air to the kitchen. The makeup air duct would be provided with a hot water coil and a DX coiling coil to temper the air to a neutral discharge air temperature before introducing it into the space. This will greatly improve the ability to maintain the desired space temperature in the kitchen area.

6.5 Electrical Lighting/Power Scope of Work

1. Summary

- a. The electrical systems installed in the Martin House are in relatively good condition and incorporate up to date modern components, materials and equipment. The existing panels are of sufficient capacity to accommodate the proposed additions and renovations.

2. Electrical System Upgrades

- a. Since architectural modifications are being proposed for the 3rd floor guest suite, sunroom and kitchen areas, the electrical power and outlets, lighting, fire alarm, security and data systems serving these areas should be evaluated and modified as required to accommodate the new architecture.
- b. Current electrical codes require the installation of arc fault circuit breakers for branch circuits serving most rooms. This new technology provides protection from electrical fires due to arcing within receptacle and outlets boxes. Although not a requirement to upgrade to current standards under renovations, these breakers will be installed as part of this rehabilitation project for their enhanced safety features.
- c. Current electrical codes require the installation of tamper resistant receptacles in most rooms. This receptacle provides protection from children sticking items into the receptacle outlet possibly causing personal injury or fire. Although not a requirement to upgrade to current standards under renovations, the owner may want to consider installing these receptacles for their enhanced safety features.

- d. To eliminate the hodge-podge of extension cords along the front porch and deck area for seasonal lighting displays, exterior, weatherproof, GFCI receptacles will be installed and connected to a time clock and/or photocell controlled circuit.
 - e. The existing doorbell system will be extended to include an additional chime on the second floor stair landing.
 - f. Electric heat trace will be installed in the downspout and gutter system to eliminate the recurring problem of ice buildup.
 - g. Where possible, interior lighting fixtures will be re-lamped utilizing fluorescent or LED bulbs that simulate the standard A-type incandescent shape and appearance.
 - h. Exterior lighting fixtures will be replaced with more appropriate period styles; selection of fixture size will be proportionate to scale of building.
 - i. Exterior lighting fixture control will be modified to provide automatic operation by time clock and/or photocell control.
 - j. Exterior lighting will be enhanced to provide additional lighting for the break down and clean up for crews associated with larger social events at the building. Obscure flood lighting fixtures on manual switches will be provided for this purpose.
 - k. Additional exterior site receptacles will be provided to accommodate catering events on the property. The center island will receive new outlets. Existing outlets in other areas should be investigated for appropriate provisions at each location and made readily accessible to event staff.
3. Fire Alarm System
- a. Replace the existing Fire Alarm control panel with an addressable system that will network with the campus system and meets the University Design Guidelines. System shall be compatible with existing conventional devices such that the existing interior building wiring and initiation devices (smoke detectors, heat detector, etc.) would not need to be replaced.
4. Security System
- a. Make adjustments or provide additional contact switches such that the existing security system will allow windows to remain in an open position for some level of ventilation while still allowing the system to arm and protect the property.

6.6 Structural Scope of Work

1. Attic and Third Floor Recommendations

- a. The split roof framing member should be sistered with a new 2x8.
- b. The concentrated loads on the third floor should be spread out, or the floor framing reinforced for light-storage loading.
- c. New mechanical equipment was added in 1995. An air handler appears to be suspended from third floor ceiling joists. No signs of structural distress are evident. See Photograph 3.
- d. Reinforce the Guest Room floor framing to level the floor and provide increased load capacity.
- e. Re-frame the third floor stair header and stringers to remove the uncomfortable and hazardous slant.



Photograph 6 Stair to Third Floor – slopes to open side

2. Second Floor Framing Recommendations

- a. There are no recommendations at this time.

3. First Floor Framing Recommendations

- a. In order to increase load capacity, limit deflection, and reduce noticeable vibration of the first floor during large gatherings, it is recommended that shoring be added mid-span of floor joists and beams.
- b. Sister damaged framing.
- c. Provide termite protection to affected areas (already accomplished by University staff)

- d. Repair damage to framing caused by duct and piping installation.
4. Exterior Masonry Recommendations
- a. Remove exterior brick wythe of failing flat arch lintels on the east and north walls. Evaluate condition of interior wythes and reconstruct exterior wythe using existing materials.
 - b. Re-point loose brick.
 - c. Clean tops of chimneys and re-point brick and concrete caps.
5. Garage Recommendations
- a. No recommendations required.

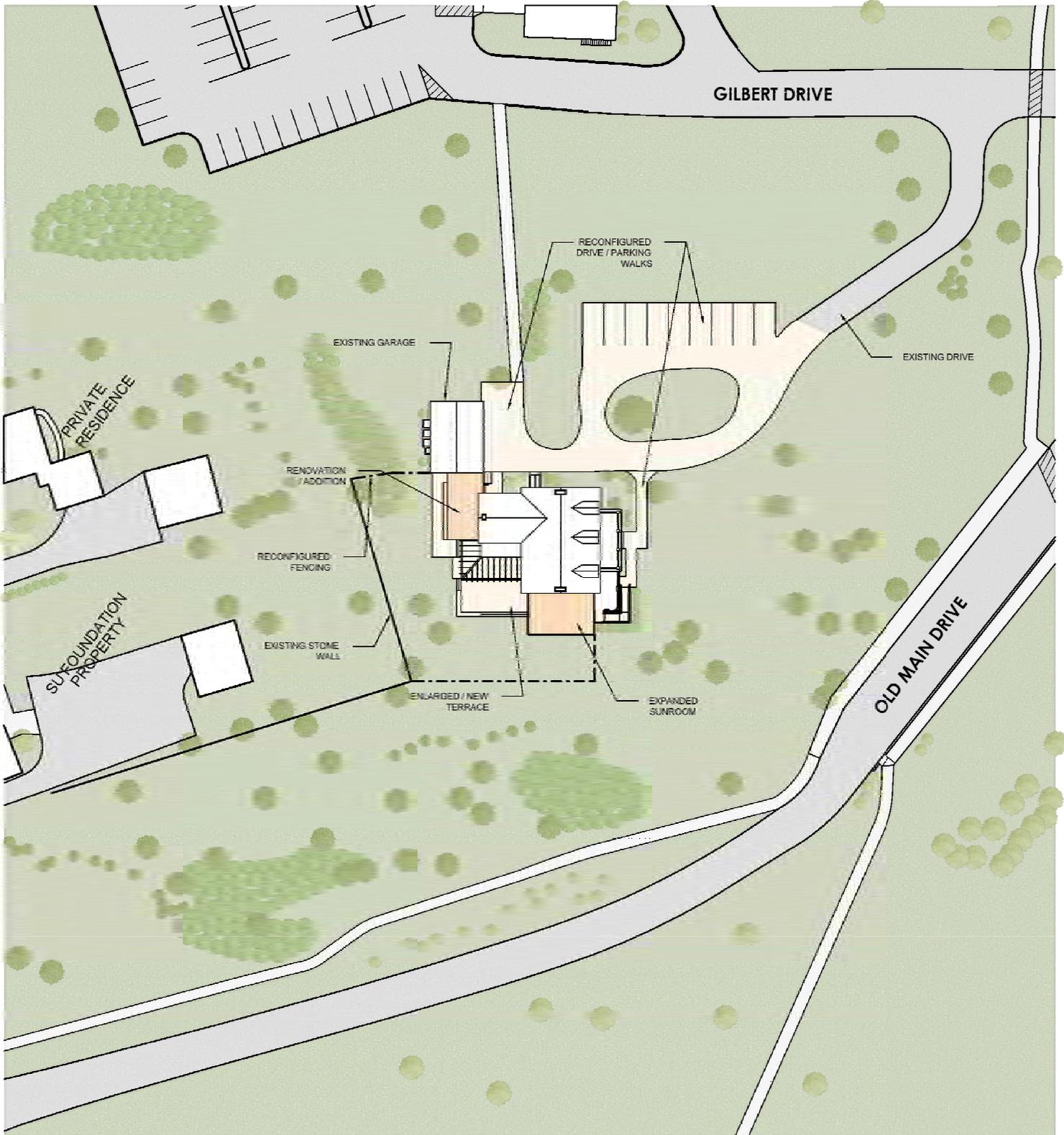
6.7 Functional Shortfalls Scope of Work

1. Access. The current walk and ramp are poorly sited. Realigning the accessible ramp to the front of the porch, versus the current side entry, improves the important identifiable front features of the historic residence and continues to provide easy access for guests with disabilities. The walkway is also reconfigured to provide a more direct approach to the front porch from the driveway and guest parking.
2. Official space. The first floor provides official space for hosting the many social and entertainment obligations. Existing space deficiencies include insufficient reception space and insufficient catering kitchen space. The PASSHE space planning guidelines allow 2,250 GSF, the Martin House currently has 2,086 SF, and this study and schematic design provides 2,492 SF. This additional square footage provides the necessary preparation and storage space for the Food Services Department and to provide for adequate reception space, thus compensating for the historic building's floor plan. The proposed schematic design relocates the laundry room, a residential function, to the second floor and provides additional catering space by extending the existing small one story addition to the garage. The sunroom is enlarged to make the existing undersized space more fully usable for public receptions/gatherings. Access from this area to the reconfigured terrace is maintained and allows easy access during public receptions/gatherings. The powder room has been maintained in size but reconfigured for improved function and accessibility. The adjacent kitchen and breakfast room have been maintained in size, but reconfigured for improved circulation and function. The small pantry off to the east side of the kitchen has been maintained.
3. The kitchen now leads to the rear entry vestibule with coat closet and access to the garage. The attached porch provides easy access for catering in the house. The rear entry vestibule also leads to a large catering area/pantry for preparation and storage of event items.
4. Living space. The second floor provides living space for the President and family. Existing space deficiencies include insufficient closets in the master bedroom. The PASSHE space planning guidelines allow 3,025 GSF, the Martin House currently has 1,776 SF, and this study and schematic design provides 1,771 SF. The laundry room is

relocated to the second floor in the northwest room for access from the bedrooms for private use. The master suite is reorganized to provide an appropriate walk-in closet off the existing master bedroom. The master study is also reorganized to accommodate the walk-in closet and a small closet within the study.

5. Guest room with bath. The third floor provides space for a guest room and bath suite. Existing space deficiencies include a rise in elevation between the bedroom and the bathroom, thus eliminating access to those individuals with disabilities. The PASSHE space planning guidelines allow 225 GSF, the Martin House currently has 319 SF, and this study and schematic design provides 384 SF. This square footage is not all usable since much of it underlies the sloped attic roof in this area. The guest suite restroom is reconfigured to eliminate the existing steps between the bathroom and bedroom. The guest bedroom is enlarged to permit the bed to be located away from low-head room dormers, providing proper headroom for guests.

7.0 Recommendations Figures and Images



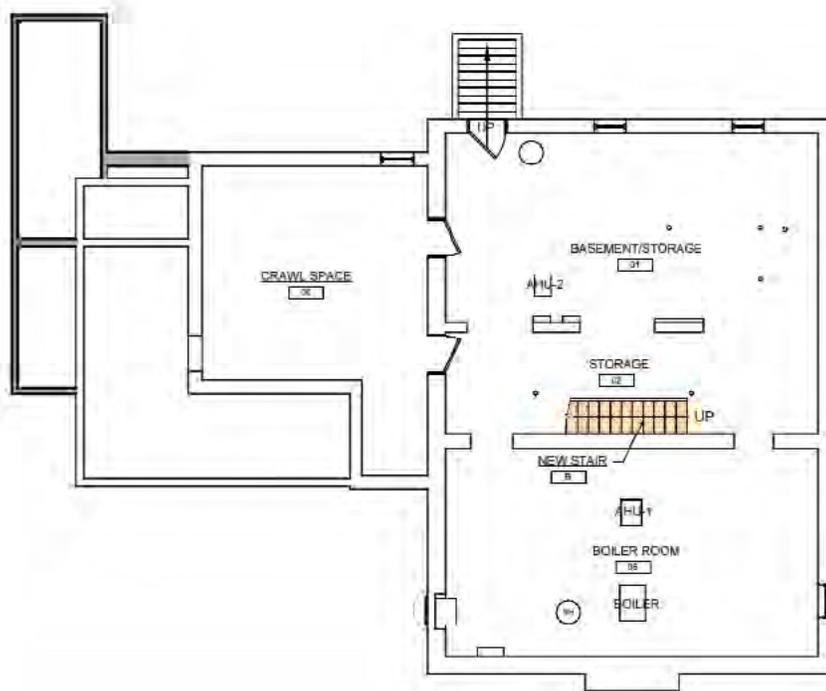
PROPOSED SITE PLAN



0 32' 64' 128'



SCALE: 1/64" = 1'-0"



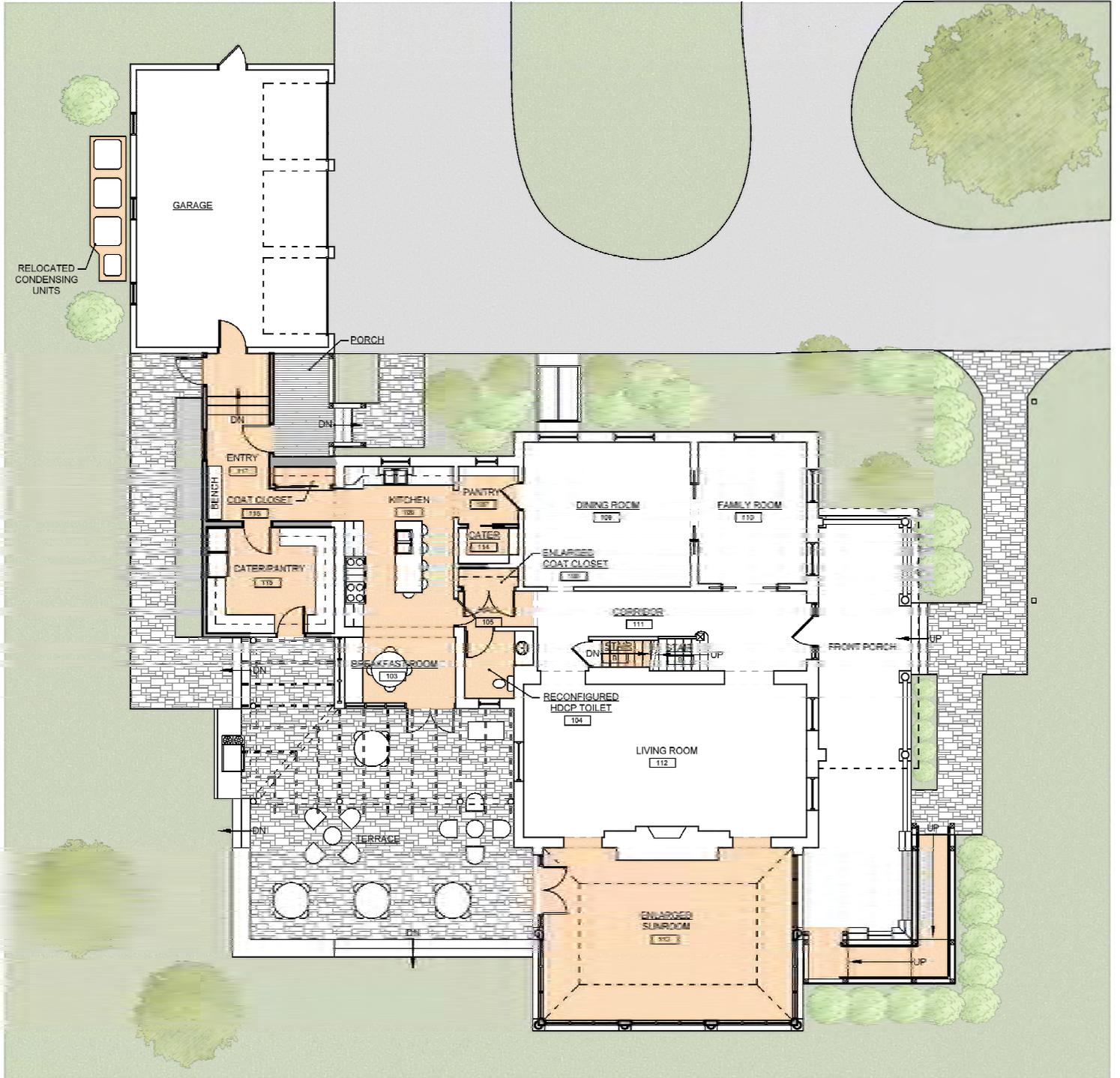
PROPOSED BASEMENT FLOOR PLAN



0 8' 16' 32'



SCALE: 1/16" = 1'-0"



PROPOSED FIRST FLOOR PLAN



0 8' 16' 32'



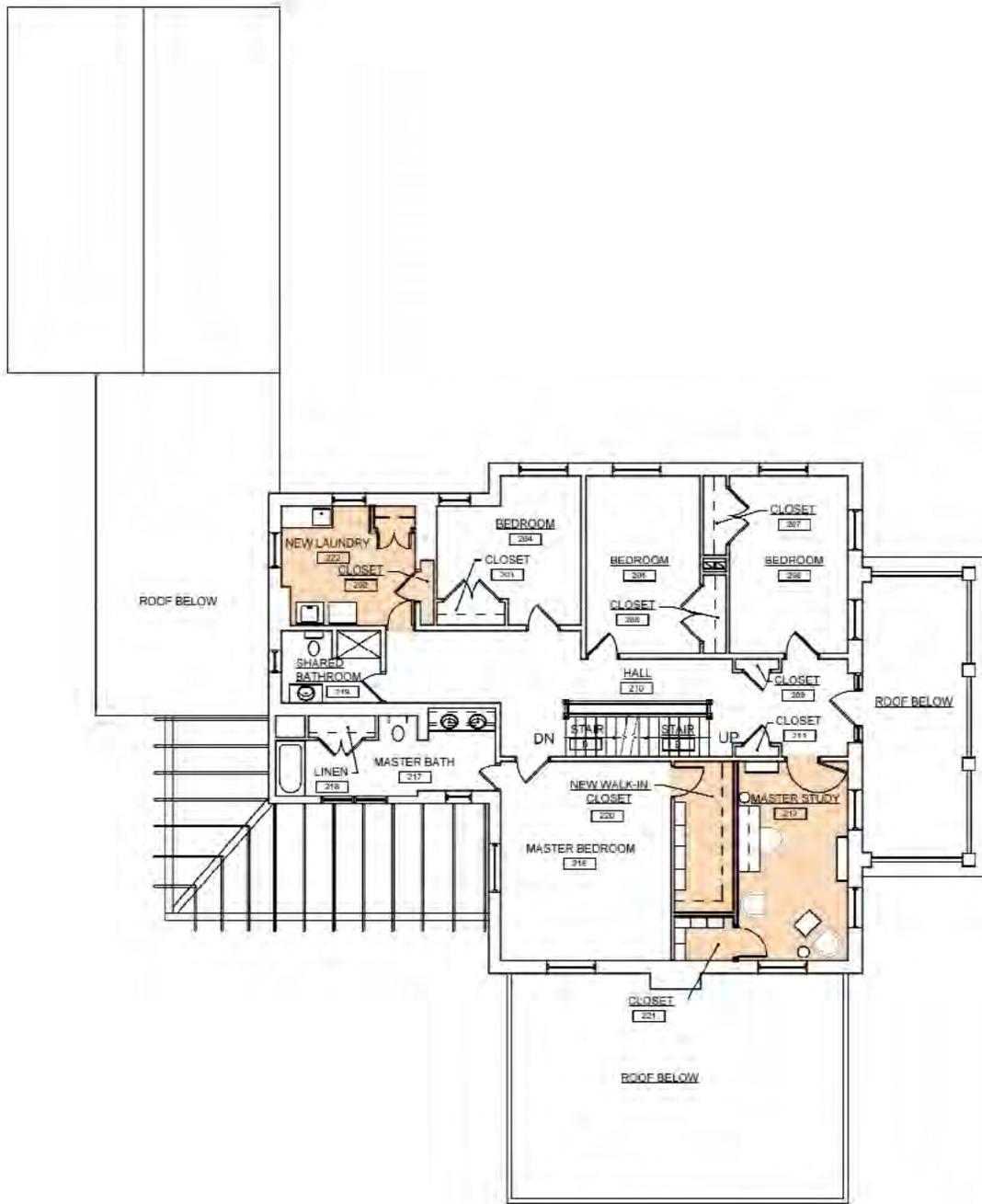
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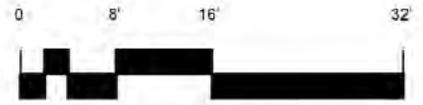
FEASIBILITY STUDY FOR THE MARTIN HOUSE - SHIPPENSBURG UNIVERSITY
SHIPPENSBURG, PENNSYLVANIA

DATE: 10/14/11

Murphy & Dittenhafer
ARCHITECTS

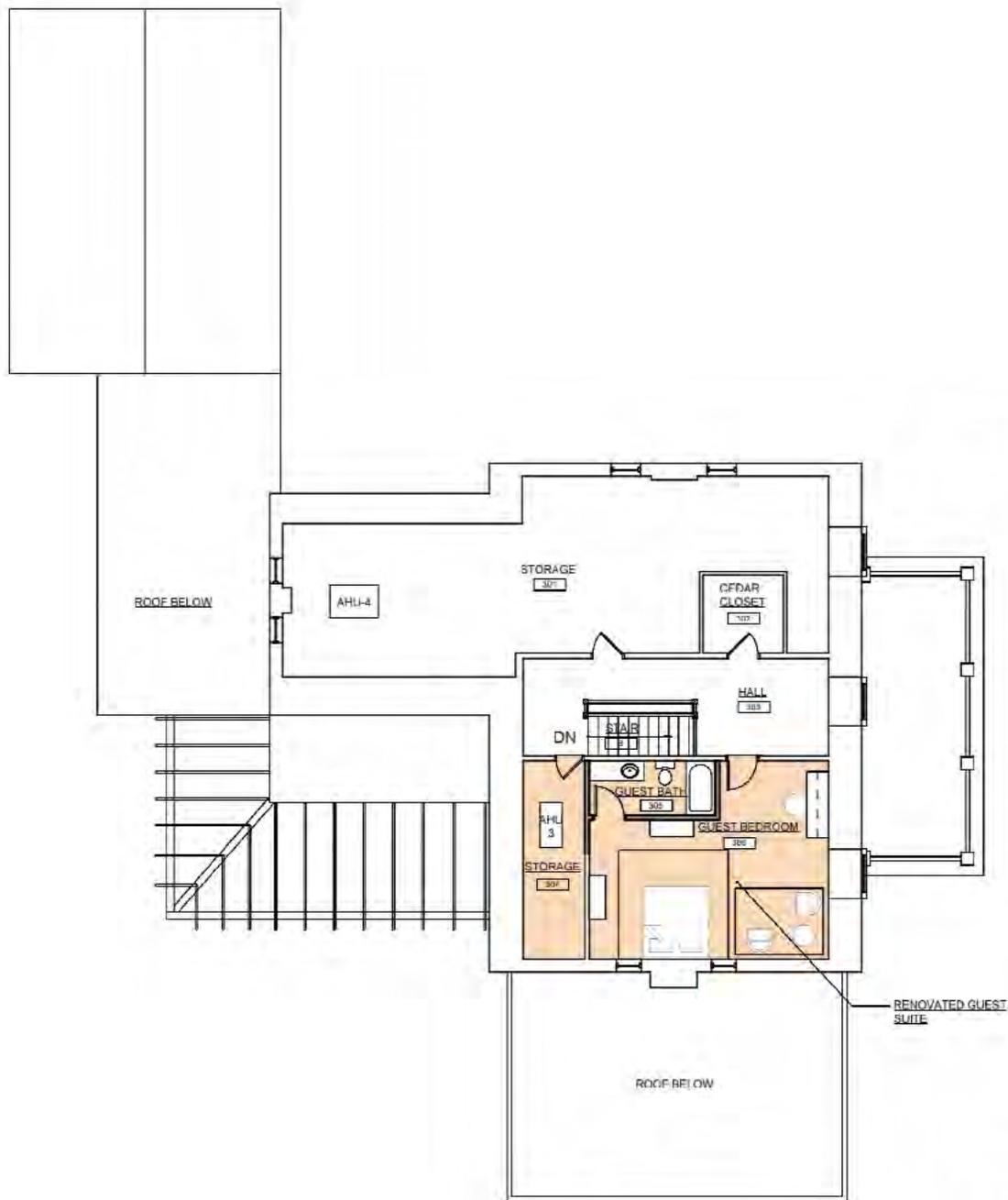


PROPOSED SECOND FLOOR PLAN

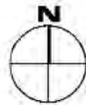


SCALE: 1/16" = 1'-0"





PROPOSED THIRD FLOOR PLAN



0 8' 16' 32'



SCALE: 1/16" = 1'-0"

8.0 Summary of Code Issues

8.0 Summary of Code Issues

Summary of Requirements and Compliance:

Proposed work at the Martin House will require the review and approval by the Pennsylvania Department of Labor and Industry. Final inspections and issuance of the certificate of occupancy will also be required to be obtained from the Department of Labor and Industry.

The rehabilitation and repair work and any proposed additions will be required to comply with the provisions of the International Residential Code (2009) as adopted by the State of Pennsylvania. The rehabilitation work proposed for the historic house's building components, materials, plumbing, electrical, heating, ventilation and air conditioning systems, will provide full compliance with all current building code requirements.

The property is currently located in a University zone according to the Shippensburg Township Zoning Map.

The proposed site/drive modifications and proposed sunroom expansion will require Land Development approval.

9.0 Preliminary Statement of Probable Construction Cost

9.0 Preliminary Statement of Probable Construction Cost

This Statement of Probable Construction Cost reflects preliminary cost parameters for consideration and use in determining basic feasibility, initial budgets, and financial strategies for the rehabilitation of the Martin House based on the scope of work as developed and presented in this study.

SHIPPENSBURG UNIVERSITY - RENOVATIONS & ADDITIONS TO THE MARTIN HOUSE

ARCHITECT'S PROJECT 10116

Statement of Probable Construction Costs

10/14/11

DIV	ITEM	QTY (SF)	COST/SF	SUBTOTAL	DIVISION TOTAL
1	GENERAL REQUIREMENTS				\$60,000
		6 MONTHS	\$10,000.00	\$60,000	
2	SITWORK				\$121,220
	Demo driveway	5800	\$1.10	\$6,380	
	Grading/prep	6400	\$1.25	\$8,000	
	Asphalt paving and base	5800	\$2.80	\$16,240	
	Brick walks (on slab)	325	\$16.00	\$5,200	
	Bluestone terrace and slab	1000	\$24.50	\$24,500	
	Landscaping	L.S.		\$30,000	
	Site lighting	L.S.		\$2,400	
	Fence re-work	L.S.		\$5,000	
	Ramp	L.S.		\$6,500	
	Miscellaneous demo (renovations)	L.S.		\$17,000	
3	CONCRETE				\$19,665
	Additions and foundations	L.S.		\$19,665	
4	MASONRY				\$29,100
	Brick/Lintel/Re-point/Repair	L.S.		\$12,000	
	Brick cleaning - all facades	L.S.		\$5,000	
	Chimney re-point/cap	L.S.		\$2,500	
	CMU foundations	L.S.		\$9,600	
5	METALS				\$2,500
	Miscellaneous	L.S.		\$2,500	

SHIPPENSBURG UNIVERSITY - RENOVATIONS & ADDITIONS TO THE MARTIN HOUSE

ARCHITECT'S PROJECT 10116

Statement of Probable Construction Costs

10/14/11

DIV	ITEM	QTY (SF)	COST/SF	SUBTOTAL	DIVISION TOTAL
6	WOOD AND PLASTICS				\$64,600
	Patch/repair wood cornice	200 L.F.	\$75.00 (avg)	\$15,000	
	Patch/repair/rebuild wood porch railings	74 L.F.	\$150.00	\$11,100	
	Minor floor and roof framing	L.S.		\$2,500	
	Wood trellis	L.S.		\$8,000	
	Basement stairs and railing	L.S.		\$3,000	
	Kitchen re-work	L.S.		\$25,000	
7	THERMAL & MOISTURE PROT.				\$39,175
	Basement waterproofing	L.S.		\$2,500	
	Tear off existing and install new asphalt shingle roofing system with copper flashing	28 squares	\$300.00	\$8,400	
	Copper gutter and downspout rework	L.S.		\$2,500	
	Insulate attic (blown-in)	1850	\$1.50	\$2,775	
	Addition metal roofing	L.S.		\$18,000	
	Tear off existing and install new asphalt shingle roofing system on garage	L.S.	\$5,000.00	\$5,000	
8	DOORS & WINDOWS				\$73,000
	Replace windows with painted wood insulated double hung units	35	\$1,000.00	\$35,000	
	New painted wood garage doors	3	\$3,000.00	\$9,000	
	Miscellaneous hardware modifications	L.S.		\$3,000	
	Doors and hardware	L.S.		\$26,000	
9	FINISHES				\$72,981
	Living Room - remove carpet and refinish wood floors	558	\$3.55	\$1,981	

SHIPPENSBURG UNIVERSITY - RENOVATIONS & ADDITIONS TO THE MARTIN HOUSE					
ARCHITECT'S PROJECT 10116					
Statement of Probable Construction Costs			10/14/11		
DIV	ITEM	QTY (SF)	COST/SF	SUBTOTAL	DIVISION TOTAL
	New powder room configuration, sink/base and floor finish	L.S.		\$6,000	
	Re-paint walls and ceilings (additions/renovations)	L.S.		\$2,950	
	Upgrade flooring, cabinetry/sink/lighting second floor bath	L.S.		\$5,000	
	Stud and drywall partitions	L.S.		\$3,650	
	Paint exterior wood trim	L.S.		\$10,000	
	Wood floor - 3rd floor guest suite	L.S.		\$10,000	
	Painted wood ceiling - sunroom addition	L.S.		\$5,200	
	Floor finish renovations - sunroom addition	L.S.		\$13,200	
	Paint remaining interior of house	L.S.		\$15,000	
10	SPECIALTIES				
	N/A				
11	EQUIPMENT				
	N/A				
12	FURNISHINGS				
	N/A				
13	SPECIAL CONSTRUCTION				
	N/A				
14	CONVEYING SYSTEMS				
	N/A				

SHIPPENSBURG UNIVERSITY - RENOVATIONS & ADDITIONS TO THE MARTIN HOUSE

ARCHITECT'S PROJECT 10116

Statement of Probable Construction Costs

10/14/11

DIV	ITEM	QTY (SF)	COST/SF	SUBTOTAL	DIVISION TOTAL
15	MECHANICAL				\$124,025
	Building controls modifications - integrate with campus system	L.S.		\$18,475	
	Zone valves for baseboard heat	L.S.		\$52,350	
	Modify heat pump sequencing - replace existing split system	L.S.		\$2,880	
	Replace heat pumps with new 15 SEER units	L.S.		\$29,090	
	3rd floor A/C guest suite	L.S.		\$3,650	
	Relocate outdoor units	L.S.		\$9,680	
	Alternate air devices - addition and renovations	L.S.		\$2,500	
	3rd floor guest suite plumbing	L.S.		\$5,400	
	Commissioning				
16	ELECTRICAL				\$20,750
	Modifications to security system to allow fresh air from open windows while still armed	L.S.		\$5,000	
	Heat trace for gutter downspout systems	L.S.		\$1,500	
	Power and lighting renovations/additions	L.S.		\$8,200	
	Replacement floor outlets with recessed type receptacles in living room	2 receptacles	\$200.00	\$400	
	Extend door bell system with second floor chime	L.S.		\$250	
	Replace existing fire alarm system with addressable type to meet campus wide specifications	L.S.		\$2,500	
	Provide additional exterior receptacle outlets for seasonal events	L.S.		\$2,400	
	New gas log	L.S.		\$500	

SHIPPENSBURG UNIVERSITY - RENOVATIONS & ADDITIONS TO THE MARTIN HOUSE

ARCHITECT'S PROJECT 10116

Statement of Probable Construction Costs

10/14/11

DIV	ITEM	QTY (SF)	COST/SF	SUBTOTAL	DIVISION TOTAL
	SUBTOTAL				\$627,016
	Bonds	1%		\$6,270	
	6% material sales tax	6%		\$15,048	
	Overhead and profit	7%		\$43,891	
	Escalation	3 1/2%/yr	2 years	\$43,891	
	CONSTRUCTION TOTAL				\$736,117
	Contingency	20%		\$147,223	
	Architectural/Engineering Fees	15%		\$110,417	
	Local approvals	Allowance		\$9,000	
	Land Development	L.S.		\$2,500	
	FF&E	L.S.		\$30,250	
	PROJECT TOTAL				\$1,035,507

10.0 Next Steps

10.0 NEXT STEPS

10.1 Proposed Preliminary Project Schedule

The project schedule below reflects a general preliminary time projection to implement the renovations of the Martin House. Time is allocated for the various project phases. Shippensburg University may use this information to determine how the project can be scheduled to provide maximum benefit for the University's use.

The overall phases of this process and proposed durations are as follows:

- Complete concept study (October 2011)
- Submit funding request to Council of Trustees (November 2011)
- Submit funding request to PASSHE (December 2011)
- Submit funding request to Board of Governors (January 18/ 19, 2012)
- Board of Governors approval
- Design firm advertisement and selection (assume 3 months)
- Start Design (May 2012; assume 12 months to complete)
- Develop construction timeline (April 2013)
- Complete Design Development & Construction Documents Phases (May 2013)
- Start Bidding & Permit Phase (June 2013; assume 4 months to complete)
- Determine temporary official residence (assume 9 months)
- Approval/ Award of Contract (October 2013)
- Start Construction (May; assume 8 months to complete)
- Complete Construction (June 2014)
- Relocate official family (July 2014)

10.2 Conclusion

Based on the information and material presented in this report, Murphy & Dittenhafer concludes that the Feasibility Study successfully confirms the program accommodation and scope of work, and presents financial parameters of the renovation under consideration by the Shippensburg University to renovate the Martin House to properly accommodate University events and the private residence for the president.

The project team has reached this conclusion of feasibility in consultation after consideration of a wide range of issues including:

- Architectural
- Structural
- Mechanical/ Plumbing
- Electrical
- Program Accommodation
- Site
- Exterior Images
- Private/ Public Aspects
- Historic Appropriateness
- Energy Efficiency
- Lifecycle Costs

Appendices

Pennsylvania State System of Higher Education Facilities Manual

Volume IX-A Official Residences

A facility designated as an official residence to house the president of a State System university requires special project planning and programming for repair, renovation, improvement, and additions to existing facilities or, for construction of a new facility. Routine preventative maintenance should be planned and performed for such facilities, along with all other institution facilities. Since facilities projects for the repair, renovation, improvement, or construction of a new facility may be funded from the State System reserve, as discussed in Policy 1984-07, special procedures must be used in processing facilities projects for such facilities. Requests for funding for special facilities projects for presidents' residences from the State System reserve must be submitted for Board of Governors' approval. The form shown in Figure IX-1 should be submitted for each project. The procedures for building or acquiring an official residence, shown in Appendix IX-A-1, should be used for planning such projects. The procedures specified in Volume V for System-financed capital facilities projects should be followed for obtaining Board of Governors' approval of projects for State System presidential residences.

Approval of projects for repairs and renovations will be based upon the life cycle profile for the facility. State System institutions should prepare a life cycle profile for the facility, and plan and program repairs and renovations according to the profile. A copy of an updated profile must be submitted with each request for project funding for repairs or renovations. Annual funding expended for preventative maintenance, by year, using the last request for life cycle funding requirements should be maintained and submitted with each request for State System reserve funding.

Facilities projects for improvements and additions to an existing facility and for construction of a new facility designated as a residence for a university president should be submitted for Board of Governors' approval using the special project request form shown in Figure IX-1. The procedures specified in Volume V for System-financed capital facilities projects will be used for obtaining the Board's approval of the project. The reasons or rationale for requesting approval of the project should be clearly stated with each request. The Board of Governors may choose to participate with the respective council of trustees in selecting the design professional and in establishing the requirements to be incorporated into the feasibility study and/or design for the improvements or construction of new facilities.

Acquisition or purchase of real property for a presidential residence must follow the procedures specified in Volume VII-C. Accomplishment of approved special facilities projects for designated presidential residences must be processed in accordance with the procedures specified in the *Administrative Procedures for Professional Services* and *Contract Procurement for Facilities Projects* manuals.

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State System of Higher Education

Procedures for Building or Acquiring An Official Residence

Purpose

To publish space planning guidelines and establish procedures for planning and programming the construction, acquisition, lease, or rental of an official residence at a State System of Higher Education university.

Background

Construction, acquisition, lease, or rental of an official residence for a System university must be planned and programmed carefully. Planning and programming an official residence involves consideration of the qualitative aspects of size, cost and location of the facility; utility for conducting official functions; and qualitative aspects impacting family life. Such considerations include privacy, safety and security, neighborhood, parking, and access and convenience for both official visitors and residents. The qualitative and quantitative aspects must be addressed before an official residence is constructed or acquired.

Quantitative Considerations

Attachment 1 contains the Space Planning Guidelines for constructing or acquiring official residences for the System. Planning for construction or acquisition of new official residences must be measured according to these space-planning guidelines. Deviations from the guidelines for temporary or short-term lease or rental of a property for interim use as an official residence may be considered on a case-by-case basis.

The cost of new construction shall be commensurate with the square foot costs established in the current Means cost-estimating guides, adjusted for public construction and site requirements. Acquisition costs shall be determined by the current market value for a facility sized within the space planning guidelines. The cost for any subsequent refurbishment, as required, to make a newly acquired facility habitable as an official residence shall be added to the acquisition costs. The total should not exceed the cost to construct a new facility, including a parcel of land of equal value.

Qualitative Considerations

The qualitative aspect of privacy for the family and official guests afforded by the location and configuration of the proposed residence to be acquired, constructed, leased, or rented must be evaluated and considered acceptable to the university, Council of Trustees, and Board of Governors, both for official functions and for the resident family. The location must provide a safe and secure environment for the residents and the official guests. Additionally, the location should also afford ease of access, both to the grounds and the interior, for the physically impaired. The residence should be conveniently located for daily life's activities of the resident family. Consideration must be given to the possible needs of young or teenage children. There should be a yard for family outdoor activities, an outdoor area with adequate parking close by for official functions and entertainment, and a separate parking area for the residence vehicles.

Other qualitative features include separately zoned HVAC systems and an energy management system.

Procedures

The university should conduct a quantitative review of the facility to be acquired, constructed, leased, or rented by comparing the space planning guidelines against the existing university assets. If other facilities exist where the university official functions could be held more advantageously than in an official residence, the space requirements in the official residence can be reduced accordingly. The quantitative review should produce project space requirements for the residence to be acquired, constructed, leased, or rented.

A qualitative analysis should be conducted to determine the quality of life aspects to be incorporated or contained in the residence to be constructed or acquired. Each of the factors discussed above should be considered in the analysis. The results of the quantitative analysis should be added to the results of the qualitative analysis to develop a project scope.

Based on the project scope developed from the quantitative and qualitative analyses, an initial cost estimate should be prepared to establish a cost allocation or monthly rental cost for use in obtaining the services of an architect or realtor. The proposed scope and cost estimate should be forwarded to the Office of the Chancellor, attention Vice Chancellor of Finance and Administration, for review and confirmation with the Board of Governors' criteria for System reserve funding. After approval, the Vice Chancellor of Finance and Administration will work with the university Council of Trustees to design and construct the official residence, lease, rent, or acquire an official residence for the university within the approved scope and cost approved by the Board of Governors.

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**State System of Higher Education
Official Residence
Space Planning Guidelines**

Attachment 1

_____ University of Pennsylvania	Gross Sq. Ft.	Official Residence	
Official Space¹			
Reception area for 60	1,000		
Dining area for up to 20	380		
Entrance	200		
Closets/Storage	60		
Powder room	40		
Kitchen/catering	370		
Circulation	200		
Guest room with bath	225		
Total	2,475		
Living Space²			
Living/sitting/family	375		
Den/study	275		
Four bedrooms with closets	1,000		
Master bathroom	200		
Family bath	100		
Family room	625		
Circulation/storage/laundry	450		
Total	3,025		
Site Considerations			
Exterior entertainment area	300 sq. ft. deck		
Two-car garage	625		
Distance from campus - ten minutes			
Parking for ten vehicles			
Handicap accessible			
Smoke detection throughout			
Security system			
Energy management system			
Separately-zoned HVAC			

¹Official space on same level.

²Living space shall be physically separated from official space.

*Same as sitting room.

*Adjust for space on campus.

**On same floor as official space.

**State System of Higher Education
Request for Project Approval for
President's Residence**

Request for (check all appropriate items):

- | | |
|---|--|
| <input type="checkbox"/> Life Cycle Renovation | <input type="checkbox"/> Addition |
| <input type="checkbox"/> Major Maintenance/Repair | <input type="checkbox"/> Purchase of Real Estate |
| <input type="checkbox"/> Improvement | <input type="checkbox"/> New Construction |
-

Narrative Justification:

Estimated project cost	
Basis for cost estimate	
Life cycle profile attached	
Maintenance fund average for last 5 years	
Date of Council of Trustees resolution (attach resolution)	
Date of Board of Governors' approval	

Board of Governors Participation

- Feasibility Study
- Design Guidance
- Selection of Professional
- Design Review and Approval Prior to Construction Approval

State System of Higher Education

Official Residence

Space Planning Guidelines

Shippensburg University of Pennsylvania	Allowed GSF	Ex. Official Residence	Proposed Official Residence
Official Space			
Reception area for 60	1000	964	1219
Dining area for up to 20	380	295	295
Entrance	200	166	166
Closets/Storage	60	63	63
Powder room	40	47	47
Kitchen/catering	370	469	498
Circulation	200	82	204
Guest room with bath	225	319	384
Total	2475	2405	2876
Living Space			
Living/sitting/family	375	158	158
Den/study	275	280	204
Four bedrooms with closets	1000	777	712
Master bathroom - existing	200	136	136
Family bath - existing	100	62	62
Family room	625	0	0
Circulation/storage/laundry	450	363	499
Total	3025	1776	1771
Site Considerations			
Exterior entertainment area	300 sq. ft. deck	697	864
Two-car garage - existing	625	736	736
Distance from campus - ten minutes			
Parking for ten vehicles			
Handicap accessible			
Smoke detection throughout			
Security system			
Energy management system			
Separately-zoned HVAC			

**State System of Higher Education
System-Financed Facilities Project
Planning and Programming Data Sheet**

University: Shippensburg

Date: October 14, 2011

Project Title: Martin House Renovation/Expansion

Project Type:

Auxiliary X Infrastructure _____ Deferred Maintenance _____ Other _____

Nature of deficiency: Shippensburg University reports an existing auxiliary space deficiency of catering/special event space on the first floor, many deficiencies including deferred maintenance, lifecycle system issues, building material component repair/replacement requirements, and energy usage deficiencies of historic structures. The Martin House was constructed on the southwest corner of campus between 1907 and 1908, and has had few alterations. The Martin House currently hosts small special events on the first floor, but the existing conditions are insufficient to properly cater any small events as well as function properly mechanically to today's building standards.

Proposed solution: Renovate and reconfigure the existing building, correcting all code, life cycle and maintenance deficiencies. Construct a 563 gross square foot addition to the rear of the building to fully accommodate catering for special events, expand the existing sunroom, relocate the laundry room to the second floor, redesign the master study, redesign the guest suite to properly accommodate guests, and relocate the handicapped ramp to preserve and showcase the historic front porch.

Project justification: The Martin House is insufficient to properly host special events on the first floor and existing life cycle equipment is beyond its useful life. To continue as a viable institution of higher learning, Shippensburg University requires sufficient space to cater and accommodate small gatherings at the Martin House and upgrade the exterior and interior functions and finishes of the space as a residence.

Proposed method of financing and cost impact to student: Funds for the construction of this project will be derived from State System reserve funds. No cost impact to students.

Planning schedule:

Completion of feasibility study:	<u>October 2011</u>
Estimated Board of Governors notification	<u>January 2011</u>
Design start	<u>May 2012</u>
Design completion	<u>May 2013</u>
Construction contract award	<u>October 2013</u>
Construction completion	<u>June 2014</u>

Cost summary*	
Construction	\$736,117
Design	\$110,417
Contingency	\$147,223
Furnishings	\$30,250
Other	\$11,500
Financing Project Total	\$1,035,507

*Provide details on reverse side.

State System of Higher Education
Martin House Renovation/Expansion - 563 gsf Addition
Project Cost Estimate - October 2011

System Financed Capital Project Budget

Line Item Description	Budget	Design	Construction	Other
Direct Construction				
Prime 1 General Construction	\$692,226		\$692,226	
Prime 2 HVAC				
Prime 3 Plb. & FP				
Prime 4 Electrical				
Cost Escalation/Job Extension - 7%	\$43,891		\$43,891	
Land Acquisition				
Project Contingency - 20%	\$147,223			\$147,223
Building/Site Support				
Electrical Power				
Site Utilities				
Telephone Equipment/Installation				
Asbestos Removal/Replace/Lead Abatement/Testing				
Professional Fees: Architect	\$110,417	\$110,417		
Schematic Design				
Preliminary Design Development				
Pre-Final Design Documents				
Final Design Documents				
Bid and Award				
Construction Administration				
Warranty Inspection				
Consultant's Fees				
Reimbursable Expenses				
Professional Fees: Construction Manager				
Feasibility Study and Analysis				
Preliminary Design Review				
Design Review				
Bid and Award Support				
Construction Support				
Operations Support				
Reimbursable Expenses				
Additional Professional Services				
MEP System Commissioning				
Interdisciplinary Document Review				
Geotechnical Services				
CAD Plans				
Parking Improvement Design				
Asbestos Abatement Design				
Bond Sales Costs				
Miscellaneous				
Design Contingencies				
University Project Administration				
Advertising				
Miscellaneous Physical Plant Costs	\$11,500			\$11,500
Relocation/Moving Costs				
Equipment				
Moveable Equipment				
Furniture				
Special - Window Treatments	\$30,250			\$30,250
Total Project Amount	\$1,035,507	\$110,417	\$736,117	\$188,973